LEXOLOGY
Getting The Deal Through

ENVIRONMENT & CLIMATE REGULATION 2024

Contributing editors
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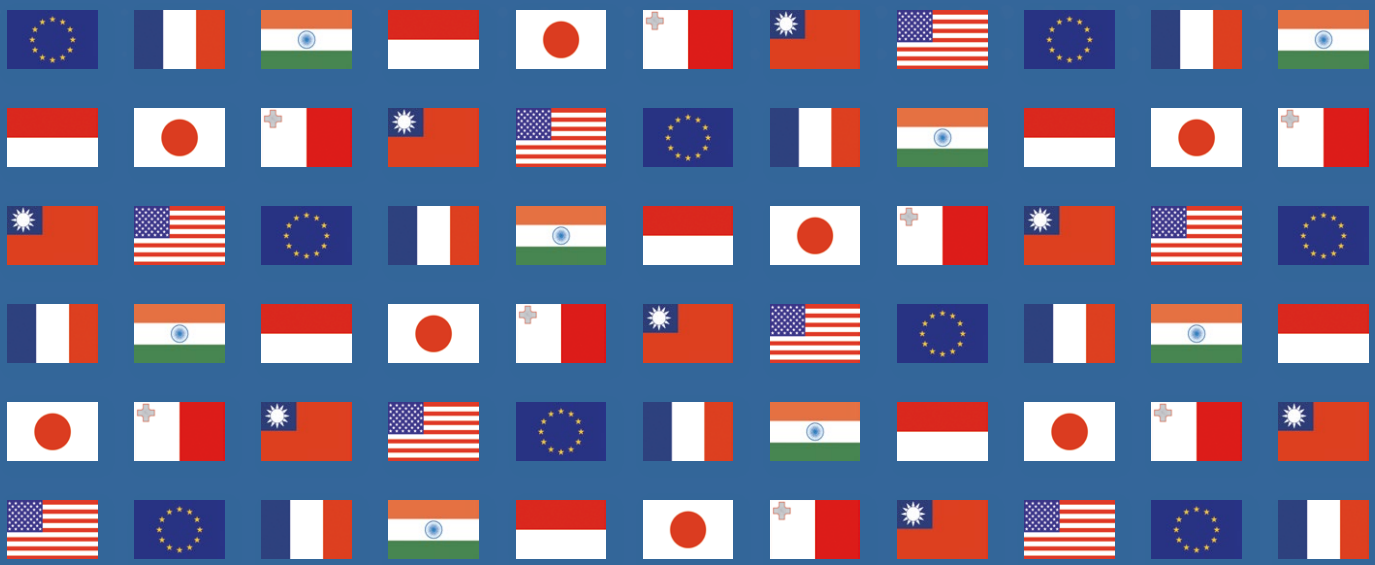

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Introduction

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Environmental law – indeed the environment itself – continues to evolve at a rapid pace and we see no signs of this slowing. The global community continues to grapple with issues such as climate change and adaptation, sustainability and supply chains, waste and circular economy considerations, infrastructure development, oceans and species protection, management of plastics and chemicals such as Per- and polyfluoroalkyl substances (PFAS), and environmental justice, to name a few. Corporate, investor, and NGO and stakeholder attention to ESG – environmental, social and governance – issues continues to rise even as an 'anti-ESG' movement also takes shape.

At the same time, individual countries continue to witness changes to their domestic regulatory regimes and significant court decisions. For example, the United States in recent years has seen both passage of significant legislation aimed at curbing greenhouse gas emissions and deploying renewable energy and other energy technologies even as the US Supreme Court has narrowed the scope of environmental regulatory agency authority to promulgate certain rulemakings. Nonetheless, significant regulatory activity and litigation continue to shape key areas, such as PFAS regulation, waste, traditional and renewable energy development, greenhouse gas emissions, green marketing, and climate change disclosures. New US legislation is also starting to make its mark, with new laws aimed at permitting reforms and reducing and sequestering greenhouse gas emissions poised to make a significant impact.

Beveridge & Diamond is pleased to lead the preparation of the *Lexology Getting the Deal Through: Environment & Climate Regulation* chapters at this exciting time. As the largest dedicated environmental law firm in the United States, Beveridge & Diamond is a US and global leader on all the issues discussed in these chapters. Beveridge & Diamond is also honoured by the opportunity to work with the esteemed contributing firms outside the United States and appreciates their authored additions to this valuable resource.

We hope you find this publication helpful, and we invite you to reach out to the contributing editors or any of the authors for additional insights.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

The main statutes and regulations relating to the environment at EU level are dispersed in various directives and regulations, including the following:

- Directive 2010/75/EU (the Industrial Emissions Directive);
- Directive 2004/35/EC (the Environmental Liability Directive);
- Directive 2008/98/EC (the Waste Framework Directive);
- Directive 2008/50/EC (the Ambient Air Quality Directive);
- Directive 2000/60/EC (the Water Framework Directive);
- Directive 2008/56/EC (the Marine Strategy Framework Directive);
- Regulation (EU) 2023/1115 (the Deforestation Regulation);
- Directive 2009/147/EC (the Birds Directive);
- Directive 92/43/EEC (the Habitats Directive);
- Directive 2002/49/EC (the Environmental Noise Directive);
- Directive 2014/95/EU (the Non-Financial Reporting Directive);
- Directive (EU) 2022/2464 (the Corporate Sustainability Reporting Directive);
- Regulation (EC) 1907/2006 (the REACH Regulation);
- Directive 2011/92/EU (the Environmental Impact Assessment Directive); and
- Directive 2001/42/EC (the Strategic Environmental Assessment Directive).

In addition, several pieces of legislation in relation to specific topics exist, such as Directive 2006/66/EC (the Batteries Directive), Directive 2000/53/EC (the End of Life Vehicles Directive), Directive 1999/31/EC (the Landfill Directive), Directive 2006/21/EC (the Mining Waste Directive), Directive 94/62/EC (the Packaging and Packaging Waste Directive), Directive 96/59/EC (the Directive on the Disposal of PCBs/PCTs), Directive 2011/65/EU (the RoHS Directive), Directive 86/278/EEC (the Sewage Sludge Directive), Regulation (EU) No. 1257/2013 (the Ship Recycling Regulation), Regulation (EU) 2019/1021 (the POPs Regulation), Regulation (EC) No. 1013/2006 (the Waste Shipments Regulation), Directive (EU) 2019/904 (the Single-use Plastics Directive), and Directive 2012/19/EU (the WEEE Directive).

Most directives and regulations foresee the possibility for member states to sanction breaches of environmental law; this is thus regulated on a member state level.

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Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

Yes. Directive 2010/75/EU (the IED) forms the main EU instrument regulating pollutant emissions from industrial installations. The IED relates to all the environmental impacts of a number of activities that are subject to prior review and (as the case may be) specific conditions. The specific conditions may be re-examined and updated in the course of the operation of the installations or activities.

According to the IED, installations are subject to (1) a prior review, (2) operating conditions and (3) monitoring. Installations include all stationary technical units in which one or more activities in the following sectors are carried out: energy, metal production and processing, minerals, chemicals, waste management and other sectors such as pulp and paper production, slaughterhouses and the intensive rearing of poultry and pigs.

First, member states are obliged to take all necessary measures to ensure that no installation, combustion plant, waste incineration plant or waste co-incineration plant is operated without a permit.

According to the IED, the permit must include all measures required to achieve a high level of environmental protection in general and to ensure that the installation is operated in compliance with the general principles governing the operator's basic obligations. The permit must, inter alia, also include emission limit values for polluting substances, or equivalent parameters or technical measures and monitoring requirements.

The permit conditions should be set on the basis of the best available techniques (BATs), namely, the most effective and advanced stage in the development of activities and their methods of operation, which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole.

Second, member states are given the possibility to include requirements for certain categories of installations, combustion plants, waste incineration plants or waste co-incineration plants by the means of 'general binding rules'. In this regard, member states must ensure an integrated approach and a high-level of environmental protection equivalent to that achievable with individual permit conditions.

Last, a system of monitoring is foreseen. According to the IED, operators must supply the competent authority at least annually with information on the basis of results of emission monitoring and other required data that enables the competent authority to verify compliance with the permit conditions. In addition, the IED obliges member states to set up a system of environmental inspections of installations addressing the examination of the full range of relevant environmental effects from the installations concerned and to draw up inspection plan accordingly. Every one to three years, using risk-based criteria, a visit of the installations must take place.

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As announced in the European Green Deal, the European Commission (the Commission) proposed a revision of the IED on 5 April 2022.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

At present, at EU level, there is no binding, overarching framework that defines (parameters for) soil protection/rules applicable to soil pollution. However, on 5 July 2023, the Commission adopted a proposal for a Directive on Soil Monitoring and Resilience, as part of their 2021 'Soil strategy for 2030'. The proposal aims at monitoring soil health as well as identifying and managing contaminated sites.

Regulation of waste

4 | What types of waste are regulated and how?

Directive 2008/98/EC (the Waste Framework Directive) forms the framework of general rules that apply to all categories of waste and integrates / consolidates formerly applicable (specific) directives, in particular with regard to hazardous waste and the disposal of waste oils. The abandonment, dumping or uncontrolled management of waste is prohibited by the Waste Framework Directive.

Waste includes any substance or object that the holder discards or intends or is required to discard. It does not cover certain types of waste such as gaseous effluents, land (in situ), uncontaminated soil, radioactive waste, decommissioned explosives, faecal matter, animal by-products and waste from extraction activities.

In particular, waste should not be confused with by-products. By-products are substances or objects obtained from production processes, where the primary aim is not the production of those items, when the following four conditions are fulfilled: (1) the further use of the substance or object is certain, (2) the substance or object can be used directly without any further processing other than normal industrial practice, (3) the substance or object is produced as an integral part of a production process and (4) further use is lawful. Animal by-products are separately regulated under Regulation (EC) No 1069/2009, laying down health rules as regards animal by-products and derived products not intended for human consumption.

The Waste Framework Directive sets out a waste hierarchy that applies as a priority order in waste prevention and management legislation and policy: prevention, preparing for re-use, recycling, other recovery and disposal. Member states should take appropriate measures to this end.

Member states must require establishments or undertakings intending to carry out waste treatment to obtain a permit from the (national) competent authority. This permit must specify the types and quantities of waste that may be treated, the technical and any other requirements relevant to the site concerned, the safety and precautionary measures to be taken, the method to be used for each type of operation, monitoring and control operations (as far as necessary) and closure and after-care provisions (as far as necessary).

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Furthermore, the Waste Framework Directive introduces the 'polluter pays' principle, which entails that the costs of waste management shall be paid by the original waste producer, and the 'extended producer responsibility' concept, which consists of a set of measures taken by member states to ensure that producers of products bear financial responsibility for the management of the waste stage of a product's life cycle. It furthermore incorporates certain provisions on hazardous waste (ie, waste that displays one or more of the hazardous properties listed in Annex III of the Waste Framework Directive) and waste oils (ie, any mineral or synthetic lubrication or industrial oils that have become unfit for the use for which they were originally intended, such as used combustion engine oils and gearbox oils, lubricating oils, oils for turbines and hydraulic oils). Within the context of the European Green Deal, a proposal for a targeted revision of the Directive, focusing on food waste prevention as well as the management and prevention of waste from the textile and footwear industries, was issued by the Commission on 5 July 2023.

In addition to the Waste Framework Directive, several pieces of legislation on specific categories on waste exist, such as Directive 2006/66/EC (the Batteries Directive), Directive 2000/53/EC (the End of Life Vehicles Directive), Directive 1999/31/EC (the Landfill Directive), Directive 2006/21/EC (the Mining Waste Directive), Directive 94/62/EC (the Packaging and Packaging Waste Directive), Directive 96/59/EC (the Directive on the Disposal of PCBs/PCTs), Directive 2011/65/EU (the RoHS Directive), Directive 86/278/EEC (the Sewage Sludge Directive), Regulation (EU) No 1257/2013 (the Ship Recycling Regulation), Regulation (EU) 2019/1021 (the POPs Regulation), Regulation (EC) No 1013/2006 (the Waste Shipments Regulation), Directive 2012/19/EU (the WEEE Directive) and Directive (EU) 2019/904 (the Single-use Plastics Directive).

A number of the above directives and regulations are currently being revised, such as the Packaging and Packaging Waste Directive, which is being revised and replaced by a regulation and the Batteries Directive (which is expected to be replaced shortly by the Batteries Regulation as approved in the Parliament's plenary session of 14 June 2023). In 2023, the Commission also plans to propose a new regulation to tackle the unintentional release of micro plastics into the environment. To this effect, it launched an Open Public Consultation in 2022.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Regarding air emissions, a distinction should be made between the rules concerning ambient air quality and clean air on the one hand, and the rules concerning emissions of pollutants on the other hand.

Directive 2008/50/EC (the Ambient Air Quality Directive) provides for concentration limit values and alert triggers, as well as the establishment of air quality plans. According to this Directive, air ambient quality must be assessed in all agglomerations. These are conurbations with a population in excess of 250,000 inhabitants or with a given population density per km^2 to be set by the member states.

The concentration limit values are fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health or the environment, or

both, must be attained within a given period and must not be exceeded once attained. They should be distinguished from critical levels and alert triggers.

Moreover, air quality plans set out measures to attain the limit values or target values, which must be established by member states in agglomerations where the levels of pollutants in ambient air exceed the concentration limit value (increased by any relevant margin of tolerance).

In addition to the Ambient Air Quality Directive, Directive 2004/107/EC (the Arsenic et al in Ambient Air Directive) sets out specific target values of certain pollutants' concentration in ambient air, not to be exceeded, provided that it does not entail disproportionate costs for member states.

On 26 October 2022, the Commission issued a proposal for a Directive, aiming at a zero pollution objective for 2050. It would on one hand merge the Ambient Air Quality and the Arsenic et al in Ambient Air Directives. On the other hand, the proposal provides for the closer alignment of certain EU air quality standards with World Health Organisation recommendations, inter alia by reducing the limit for the emission of fine particulate matter.

Regarding measures concerning emissions of pollutants, several aspects are regulated. First, the emissions of motor vehicles and their fuels are regulated. Numerous directives and regulations exist in this regard. Introduced in Regulation 595/2009 for heavy-duty vehicles and Regulation 715/2007 for light-duty vehicles, the EURO 6 / VI standards entail the emission limit values for motor vehicles and are mandatory for all vehicles placed on the market since 2015. Standards have also been set for fuels, including limit values for lead and benzene with respect for petrol and sulphur for diesel fuel. It should be noted that member states can require that fuels must comply with more stringent specifications for all or part of the vehicle fleet. Secondly, the emissions of certain plants (eg, combustion plants and volatile organic compounds) are regulated. The main tool used by the relevant directive in this regard, the IED, is emission limit values.

On 10 November 2022, the Commission issued a proposal for a new regulation, providing for Euro 7 emission standards. The standards would be applicable to all new vehicles, regardless of their size or the nature of the energy powering them, thus tightening the limits applied to heavy-duty vehicles. The proposal also provides for the extension of the emissions limits to previously unregulated pollutants from vehicles, such as nitrous oxide emissions.

The measures regarding emission reduction that apply to activities or goods that release greenhouse gases (GHG) are described in *Lexology Getting the Deal Through* Environment & Climate Regulation 2023.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Directive 2000/60/EC (the Water Framework Directive) and Directive 2008/56/EC (the Marine Strategy Framework Directive) form the main legal framework for the protection of fresh water and marine resources.

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The Water Framework Directive foresees a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. In this regard, the Directive provides for both structures as well as instruments.

First, member states must identify the river basins located within their territories, which are then regrouped in river basin districts. It is at the level of these districts that the management of water resources must take place, which implies that all administrative arrangements for the application of the Directive must be made individually within each district.

Second, member states are bound to a systematic observation. This implies that they must ensure that they establish programmes with the purpose of monitoring the water status within each river basin district.

Third, member states are requested to establish river basin management plans, as well as specific programmes of measures to achieve the objectives of the Water Framework Directive. River basin management plans are established for each river basin district and include, inter alia, a summary of significant pressures and impact of human activity on the status of surface water and groundwater.

The Water Framework Directive is supported by other directives, such as Directive 2006/118/EC (the Groundwater Directive), Directive 98/83/EC (the Drinking Water Directive), Directive 2006/7/EC (the Bathing Water Directive), Directive 91/676/EEC (the Nitrates Directive), Directive 91/271/EEC (the Urban Waste Water Treatment Directive), Directive 2008/105/EC (the Environmental Quality Standards Directive), Directive 2007/60/EC (the Floods Directive) and the IED. The Urban Waste Water Treatment Directive, for example, sets minimum standards and timetables for the collection, treatment and discharge of urban waste water.

The Marine Strategy Framework Directive had made it a priority to achieve a good environmental status of the European marine waters by 2020 and to continue its protection and preservation, as well as to prevent subsequent deterioration.

In order to achieve the aforementioned good environmental status, member states had to develop their own ecosystem-based strategies for their marine waters, which had to be reviewed every six years. The strategy included, *inter alia*, the establishment of environmental targets and associated indicators, as well as a monitoring programme and regular updates of targets to achieve a good environmental status by 2020.

A number of the above directives are being revised. For instance, on 26 October 2022, the Commission issued a proposal for a Directive revising the Water Framework, the Groundwater and the Marine Strategy Framework Directives.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

With regard to the conservation of flora and fauna species and their habitats, two directives are relevant, namely Directive 2009/147/EC (the Birds Directive) and Directive 92/43/EEC (the Habitats Directive). Central to both Directives is the designation and conservation of

special protection areas for certain bird species (the Birds Directive) and special areas of conservation for certain natural habitats and wild fauna and flora (the Habitats Directive). These two types of areas form the Natura 2000 network, which forms a coherent European ecological network.

As far as natural spaces and landscapes are concerned, the Habitats Directive is the most relevant due to its protection of natural habitats. Natural habitats are terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural. The aim of the Habitats Directive is to ensure, through the designation of special areas of conservation, the restoration or maintenance of natural habitats and species of Community interest at a favourable conservation status. Annexes I and II list these natural habitat types and species respectively.

In the Habitats Directive, the protection of the aforementioned areas and against harmful plans and projects is regulated as well. The protection requirements stipulate, inter alia, that plans or projects that adversely affect special areas of conservation may be authorised only under certain cumulative conditions: an appropriate assessment must be carried out and the public must be given the opportunity to participate. If the appropriate assessment concludes that the plan or project will have significant effects in the area, further conditions must be fulfilled.

In principle, it is up to the member states to make the special areas of conservation subject to a set of appropriate rules for their conservation. The Habitats Directive does not specify in detail what measures a member state must take, but that member states must maintain or restore a favourable conservation status to natural habitats and, in particular, special areas of conservation through conservation measures, preventive measures and compensatory measures. However, the Habitats Directive stresses that, in the special areas of conservation, there must be no deterioration of natural habitats and the habitats of species, nor disturbance of the species for which the areas have been designated. The same applies in relation to the Birds Directive.

In addition to the Birds and Habitats Directives, Regulation (EU) 2023/1115 (the Deforestation Regulation) specifically focuses on forest areas. It provides for the prevention of forest degradation by monitoring certain products available on the European market, such as soy, cattle meat or rubber, to ensure that their production and manufacture does not contribute to deforestation. It does so regardless of the product's origin.

On 22 June 2022, as part of the EU Biodiversity Strategy for 2030, the Commission issued a proposal for a regulation on nature restoration (the Nature Restoration law). The proposal notably provides the framework for restoration measures of damaged terrestrial, freshwater and marine ecosystems, to be put in place by member states on a percentage of their territory and will complement the current Habitats and Birds Directives. Under the proposal, member states will have to ensure continuous improvement of the damaged areas and prevent further deterioration, with a focus on active restoration. The scope of the proposal extends well beyond existing Natura 2000 sites covered by the Habitats Directive.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

With regard to the conservation of flora and fauna species, the Birds Directive and the Habitats Directive are relevant.

The Habitats Directive protects flora and fauna species in the following way: (1) for species listed in Annex IV, a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites, (2) for species listed in Annex V, member states shall take measures to ensure that the exploitation and taking in the wild of aforementioned species is compatible with maintaining them in a favourable conservation status.

Regarding the protection of fauna, the Birds Directive is relevant. The Birds Directive aims to protect all wild bird species that naturally occur in the EU. The Directive protects the wild bird species in the following way: (1) for wild bird species listed in Annex 1 and for all migratory bird species, member states must designate special protection areas for their survival, and (2) only wild bird species listed in Annex 2 can be hunted, albeit under certain conditions.

Furthermore, both Directives ban several activities. The Birds Directive stipulates several prohibitions on the taking, possessing and trading of, in principle, all species of birds covered by the Birds Directive. This includes the deliberate capture or killing of birds and the destruction of their nests. The Habitats Directive contains several prohibitions on taking, possessing and trading as well. In addition, regulations on habitat protection are mentioned in the Habitats Directive. By a way of example, the damage or destruction of breeding sites or resting places of the animal species concerned is, in principle, prohibited.

The Nature Restoration law proposed by the Commission also provides for the protection of flora and fauna species, as part of a more general framework to protect terrestrial, fresh-water and marine ecosystems. It imposes inter alia the restoration of pollinator populations, therefore including birds.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Directive 2002/49/EC (the Environmental Noise Directive) aims to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. Environmental noise entails unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity such as those defined in Annex I to Directive 96/61/EC (the IPPC Directive, which, in the meantime, has been replaced by the IED).

According to the Environmental Noise Directive, the following actions must be implemented by the member states: (1) the determination of exposure to environmental noise through

noise mapping, (2) ensuring that information on environmental noise and its effects is made available to the public, and (3) the adoption of action plans, based upon the noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

In addition to the Environmental Noise Directive, there are various directives that define maximum permissible sound levels that a range of products must comply with to be placed on the market. By a way of example, motor vehicles, lorries, buses and airplanes are subject to limit sound emission values.

Regarding odours, the IED should be mentioned as it obliges member states to take all necessary measures to ensure that industrial activities giving rise to pollution are covered under a permit. The permit conditions should be set on the basis of BATs.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

Directive 2004/35/EC (the Environmental Liability Directive) forms a framework based on the polluter pays principle to prevent and remedy environmental damage.

Environmental damage is defined as damage to protected species and natural habitats (ie, any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species), damage to water (ie, any damage that significantly adversely affects the ecological, chemical or quantitative status or the ecological potential of the waters concerned and the environmental status of the marine waters concerned) and damage to land (ie, any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms).

According to the Environmental Liability Directive, the principle is that an operator whose activity has caused environmental damage or causes the imminent threat of this damage is to be held financially responsible. In this way, operators are encouraged to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to the financial consequences of their liability is reduced.

The Environmental Liability Directive applies to (1) environmental damage caused by any of the occupational activities listed in Annex III of the Directive and to any imminent threat of such damage, occurring by reason of any of those activities, and (2) damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III of the Directive, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent.

Among other things, the Environmental Liability Directive lays down several important obligations for operators. For instance, the Environmental Liability Directive provides that the operator must take the necessary preventive measures immediately when environmental damage has not yet occurred but there is an imminent threat of this damage occurring. When environmental damage has occurred, the operator must immediately inform the

competent authority of all relevant aspects of the situation and take all steps to immediately control, contain, remove or otherwise manage the relevant pollutants or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health. In addition, the operator must also take all necessary remedial measures. He or she shall bear the costs for the preventive and remedial measures taken.

On 26 October 2022, the Commission issued a proposal for the revision of the Ambient Air Quality Directive. The proposal provides inter alia for the right of people suffering health effects from air pollution to be compensated if member states would breach the air quality provisions set by the Directive. It also provides for the establishment of an effective remedy to challenge the legality or the opportunity of decisions taken by member states pursuant to European air quality rules.

Environmental taxes

11 | Is there any type of environmental tax?

The European environmental tax revenue is broken down into the following four categories: energy taxes, transport taxes, pollution taxes and resource taxes.

The taxation differs from member state to member state, apart from energy taxation. As required by Directive 2003/96/EC, which is currently being revised as part of the Fit for 55-package, there is a comprehensive energy taxation in the member states. The proposed revision focuses on a widened taxable base, expended to more energy products. It also focuses on a new tax structure, setting the tax rate of the energy according to its environmental performance, polluting fuels being, therefore, taxed the highest.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Yes. The main instruments providing for reporting requirements are Directive 2014/95/EU (the NFRD), Directive (EU) 2022/2464 (the CSRD), Regulation (EC) No 166/2006 (the European PRTR Regulation) and the international conventions organising a global reporting framework.

According to the NFRD, all large undertakings or parent undertakings of a group exceeding on their balance sheet an average number of 500 employees during the financial year must disclose information on the way they operate and manage social and environmental challenges. More specifically, in their management report, undertakings must include a non-financial statement containing information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters.

The scope of the NFRD was extended by the CSRD to a broader set of large companies as well as listed small and medium listed companies. As of financial year 2024, the CSRD

also provides for more detailed reporting requirements and for the independent auditing of reported information. Regarding companies outside the scope of the CSRD, the Commission issued on 23 February 2023 a proposal for a Directive on Corporate Sustainability Due Diligence, which would impose certain additional reporting requirements.

Additionally, the European PRTR Regulation establishes a publicly accessible register. Operators of certain industries, such as the mineral or the chemical industries, must annually report in this register the amount of pollutants released into the atmosphere, if it exceeds fixed thresholds. On 5 April 2022, the Commission issued a proposal for a regulation, aiming at improving transparency by setting up the Industrial Emission Portal, a freely accessible electronic database publishing operators' reports.

Finally, the EU and the member states, as parties to the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, are obliged to both (1) annually report on their greenhouse gas emissions, as well as (2) regularly report on their climate policies, measures and progress to the United Nations. Regarding the annual reporting on emissions, the Regulation on the Governance of the Energy Union is of importance, as it lays down a monitoring mechanism for greenhouse gas emissions and sets out the EU's own internal reporting rules.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The general government policy for environmental issues is gaining increased attention and is being reinforced and accelerated as part of the European Green Deal and the Fit for 55-package. As part of the efforts to achieve climate neutrality by 2050, the Commission is working towards a comprehensive review of existing foundational climate and environmental instruments, including the IED and the Ambient Air Quality Directive. The adoption of new legislation, including the Deforestation Regulation and the CSRD (which is heavy on reporting requirements), have illustrated the weight given by the EU to environmental protection. In addition, new and ambitious initiatives including the proposed Nature Restoration Law, the reduction of methane emissions, the REFuelEU initiative (relating to sustainable aviation fuel), CSDDD and the Net Zero Industry Act are currently in the pipeline, and have shown that environmental and climate issues are near the top of the EU's agenda.

Following the war in Ukraine, the EU has furthermore doubled down on the energy transition and the increased deployment of renewable energy, with its revision of the Renewable Energy Directive and Energy Efficiency Directive and its REPowerEU initiative (see Lexology GDTD Climate Questionnaire). The growing number of ambitious proposals and revisions highlights the importance given to environmental issues.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Yes. The permitting of hazardous activities is regulated on a member state level but follows from the IED as well. The IED obliges member states to take all necessary measures to ensure that certain industrial activities giving rise to pollution and listed in the Directive are never operated without a permit. The permit conditions should be set on the basis of BATs.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Hazardous products and substances are regulated under various pieces of EU legislation (depending on the nature of the products or substances).

In relation to chemicals, Regulation (EC) No 1907/2006 (REACH) is the key piece of legislation. REACH aims to ensure a high level of protection of human health and the environment, including the promotion of alternative methods for assessment of hazards of substances, as well as the free circulation of substances on the internal market while enhancing competitiveness and innovation.

In principle, all existing and new chemical substances are covered by REACH. There are, however, exceptions. The underlying principle is that chemical substances which are subject to other European legislation that guarantees the same high level of protection of human health and the environment are not subject to REACH.

REACH lays down a system that may require, as the case may be, registration, evaluation, authorisation and restrictions. First, chemicals cannot be manufactured or placed on the market as such in quantities of one tonne or more per year by any manufacturer or importer or contained in one or more preparations unless it has been registered. This is also referred to as 'no data, no market'. Second, the test proposals are reviewed, with a particular attention for those involving vertebrate animals. Last, certain chemicals ('substances of very high concern') are subject to prior authorisation. In addition, if the manufacture, the placement on the market or use of certain hazardous substances involves unacceptable risks to human health or the environment, they may be (made) subject to restrictions.

As part of the European Green Deal, the Commission launched an Open Public Consultation on 20 January 2022 and plans to propose a revised REACH Regulation in 2023.

Hazardous substances are also subject to specific pieces of legislation. For instance, in relation to genetically modified organisms, the contained use and the deliberate release into the environment is regulated by Directive 2001/18/EC and Directive 2009/41/EC (eg, all deliberate releases of genetically modified organisms must give rise to one or several notifications, where their containment is reduced as their assessment progresses). Other

regulated (hazardous) substances include, inter alia, biocidal products (Regulation (EU) 528/2012), POPs (the POPs Regulation) and asbestos (Directive 2009/148/EC).

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

The SEVESO III Directive aims to (1) prevent major accidents involving dangerous substances and to (2) limit the consequences for people and the environment should such accidents occur despite preventive measures.

The SEVESO III Directive applies to establishments where dangerous substances are present in quantities equal to or in excess of the thresholds set out in Annex I to the Directive. The SEVESO III Directive makes a distinction between lower-tier and upper-tier establishments, depending on the quantities of dangerous substances present.

The operator of such an establishment must take all necessary measures to prevent major accidents and to limit their consequences for people and the environment. This includes submitting a notification file and (in the case of an upper-tier establishment) a safety report to the competent authority, giving detailed information on the substances concerned, the installation and the protection and intervention measures. Operators of upper-tier establishments must also draw up an internal emergency plan. For new installations, the notification must be made before the installation is brought into operation.

On the basis of the information provided, the competent authority must draw up an external emergency plan. Internal and external emergency plans should be reviewed at appropriate intervals and revised if necessary. The establishments concerned should also be inspected and monitored on a regular basis.

According to the SEVESO III Directive, member states should integrate the aim of preventing major accidents and limiting the consequences of these accidents into land-use planning and other relevant policies. This is thus regulated on a member state level.

Last, the population at risk must be adequately informed. Information obtained pursuant to the Directive should be available to any person requesting it. Exceptions may be made for reasons of confidentiality. When a major accident occurs, the operator must immediately inform the authorities and provide the information described in the SEVESO III Directive. The Commission will, on the basis of reports from the member states, provide a register and an information system containing details of major accidents which have occurred within the territory of the member states.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

The main environmental aspects to be considered in M&A transactions are to be assessed on a case-by-case basis, and in light of the domestic environmental rules. These range from permits, soil pollution and noise to the use of hazardous substances.

As a general rule, asset deals require increased attention as such deals may trigger additional requirements (such as notification obligations towards the national, competent authorities in case of a transfer of an environmental permit, or compliance with transfer of land rules, in case of (potentially) polluted land), whereas share deals usually do not trigger these obligations. However, environmental due diligence has become quite standard, both in the context of asset and share deals, and nowadays, many buyers are seeking protection for environmental matters (regardless whether this is in an asset purchase agreement or a share purchase agreement).

On 23 February 2022, the Commission issued a proposal for a Directive establishing a corporate due diligence duty for certain large companies, which (if adopted) will require them to identify and prevent, end or mitigate the actual or potential environmental impact of their operations, as well as take responsibility for human rights abuses and environmental harm throughout their global value chains (the Corporate Sustainability Due Diligence Directive (CSDDD)).

Environmental aspects in other transactions

18 What are the main environmental aspects to consider in other transactions?

It is common to perform environmental due diligence in other types of transactions (such as IPOs or real-estate transactions or corporate restructuring matters) to identify environmental risks that must be disclosed (eg, breaches of permits, the presence of asbestos or soil pollution and related costs), transfer requirements or factors that could delay the transaction (eg, in case soil pollution must be further investigated or remediated, before the transaction can take place or before a forced sale can take place in case of a bankruptcy).

The CSDDD proposal for a Directive, if adopted, would also be applicable.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

Contracting authorities have a wide discretion when defining the subject matter of the contract, as Directive 2014/24/EU (the Public Procurement Directive) does not prevent them from implementing/imposing environmental considerations or requirements. Environmental considerations may be integrated at various stages of the public procurement procedure.

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First, the technical specifications or the award criteria, or both, may be formulated in terms of performance or functional requirements, including environmental aspects (eg, environmental and climate performance levels or production processes and methods).

Second, environmental considerations may be relevant or decisive in the selection phase and award phase. The Public Procurement Directive explicitly states in article 18(2) that member states must take appropriate measures to ensure that in the performance of public contracts economic operators comply with applicable obligations in the fields of environmental, social and labour law established by national law, EU law, collective agreements or the international provisions listed in Annex X of that Directive. As a general principle, contracting authorities may decide not to award a contract to the tenderer submitting the most economically advantageous tender where they have established that the tender does not comply with the applicable obligations referred to in article 18(2) of the Public Procurement Directive.

Furthermore, both mandatory and optional grounds of exclusion are laid down in the Public Procurement Directive. According to the Directive, contracting authorities may exclude any economic operator from participation in a procurement procedure when environmental obligations are violated. Contracting authorities must, however, reject the tender, when they have established that the tender is abnormally low because it does not comply with applicable obligations referred to in article 18(2).

Last, environmental considerations are also possible in the contract performance stage. Namely, the Public Procurement Directive authorises the contracting authorities to set out specific conditions relating to the performance of a contract, which may include economic, innovation-related, environmental, social or employment-related considerations.

The Public Procurement Directive gives member states the discretionary power to implement in their legislation that contracting authorities do not have to use price or cost as the sole award criterion. This enables contracting authorities to award contracts based on the best price-quality ratio as determined by the award criteria that may include environmental considerations.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

With regard to environmental assessment, a distinction should be made between projects, which are subject to Directive 2011/92/EU (the Environmental Impact Assessment Directive), and plans and programmes, which are subject to Directive 2001/42/EC (the Strategic Environmental Assessment Directive).

Regarding projects, the Environmental Impact Assessment Directive stipulates that, before consent is given, projects that are likely to have significant effects on the environment by virtue of, inter alia, their nature, size or location are subject to a requirement for development consent and an assessment with regard to their effects.

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More specifically, the Environmental Impact Assessment Directive applies to certain public and private projects likely to have significant effects on the environment. However, the Environmental Impact Assessment Directive provides for exceptions for projects serving national defence purposes and projects adopted by a specific act of national legislation. In *World Wildlife Fund (WWF) and Others v Autonome Provinz Bozen and Others*, the CJEU made it clear that these exceptions must be interpreted restrictively.

In the Environmental Impact Assessment Directive, a distinction is made between projects that are always subject to environmental impact assessment and that are included in Annex I of the Directive (eg, crude oil refineries, nuclear power plants and construction of motorways) and projects that are subject to environmental impact assessment at the discretion of the member states and that are included in Annex II of the Directive (eg, land consolidation projects, wind farms, permanent camping sites). Regarding the latter, member states must assess this on a case-by-case basis, using thresholds or criteria, taking into account the selection criteria set out in Annex III of the Directive (such as the size of the project, the risk of accidents and the sensitivity of the area concerned).

Regarding plans and programmes, the Strategic Environmental Assessment Directive aims to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes. Certain plans and programmes that are likely to have significant effects on the environment are subject to an environmental assessment under this Directive.

More specifically, the Strategic Environmental Assessment Directive applies to the preparation, adoption and modification of plans and programmes by a public authority. An environmental assessment must be carried out for all plans and programmes that are prepared in relation to agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and that set the framework for future development consent of projects for which a project environmental impact assessment is required under the Environmental Impact Assessment Directive.

Such an environmental assessment should, according to the Strategic Environmental Assessment Directive, also be carried out for all plans and programmes that are likely to have an adverse effect on the Natura 2000 network. For other and smaller plans and programmes, the environmental assessment is only required if they are likely to have significant environmental effects.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

With regard to the environmental assessment process, a distinction should be made between projects, plans and programmes.

Regarding projects, member states must ensure that projects covered by the environmental assessment are subject to development consent. Before such consent is granted, projects must be subject to an environmental assessment. Environmental assessment involves

the proper identification, description and evaluation of direct and indirect effects on the environment.

An environmental assessment shall include, inter alia, a description of the project, a description of the measures to prevent, reduce and restore any adverse effects, the data required to identify and assess the main effects of the project on the environment, an outline of the alternatives not retained and a non-technical summary of the data provided. The information required is given in Annex IV of the Environmental Impact Assessment Directive. The responsibility for drawing up the environmental report lies with the initiator.

In addition, member states must ensure that the different environmental authorities concerned can express an opinion and that the application for development consent and the environmental report are made available for public examination within a reasonable time before the decision on the application for development consent is taken.

The environmental assessment, the results of consultations with environmental authorities and public participation must be taken into account in the development consent procedure. The decision must be reasoned and made public.

Regarding plans and programmes, the environmental assessment must be carried out during the preparation and before the adoption of a plan or programme. An environmental report is prepared in which the likely significant environmental effects of implementing the plan or programme and reasonable alternatives are identified, described and evaluated. In an annex, Directive 2001/42/EC (the Strategic Environmental Assessment Directive) defines the information to be provided. There are similar provisions to the Environmental Impact Assessment Directive with regard to consultations, public enquiries and transboundary consultations. The environmental report and the opinions expressed during the consultations are taken into account during the preparation of the plan or programme and before its adoption.

Once a plan or programme has been adopted, information on it is supplied to the authorities concerned, the public and any member states consulted. This information shall include the plan or programme adopted and a statement of how environmental considerations and the environmental report have been taken into account and the comments made. In addition, this statement shall summarise the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

This is regulated on a member state level.

Investigation

23 What are the typical steps in an investigation?

This is regulated on a member state level.

Administrative decisions

24 What is the procedure for making administrative decisions?

This is regulated on a member state level.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

This is regulated on a member state level.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

This is regulated on a member state level.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 Are environmental law proceedings in court civil, criminal or both?

This is regulated on a member state level. However, regarding criminal proceedings, Directive 2008/99/EC (the Environmental Crime Directive) provides minimum standards for the criminalisation of serious violation of European environmental law provisions listed in the annexes of the Directive. This Directive is currently being revised to set higher minimum standards.

Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

This is regulated on a member state level.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

This is regulated on a member state level.

Defences and indemnities

30 | What defences or indemnities are available?

This is regulated on a member state level.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

This is regulated on a member state level.

Appeal process

32 | What is the appeal process from trials?

This is regulated on a member state level.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

The EU is a contracting state to various international environmental treaties, such as:

- the Geneva Convention on Long-range Transboundary Air Pollution (CLRTAP) and its Protocols;
- the Cartagena Biosafety Protocol to the Rio Convention on Biological Diversity and its Supplementary Protocol on Liability and Redress;
- the PIC Rotterdam Convention on Prior Informed Consent;
- the POP Stockholm Convention on Persistent Organic Pollutants;
- the Minamata Convention on Mercury;
- the Helsinki Convention on Industrial Accidents;
- the Barcelona Convention and its protocols;
- the Helsinki Convention on the Baltic Sea;
- the OSPAR Convention;
- the Bonn Agreement;
- the Lisbon Agreement;
- the Bucharest Convention on the Protection of the Black Sea Against Pollution;

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- the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters and its Protocol on Pollutant Release and Transfer Registers;
- the Espoo Convention on Environmental Impact Assessment;
- the Helsinki Convention on Industrial Accidents,
- the Alpine Convention and its protocols;
- the CBD Convention on Biological Diversity;
- the Cartagena Protocol on Biosafety;
- the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits arising from their Utilization;
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES Convention);
- the Bonn CMS Convention on the Conservation of Migratory Species;
- the Agreement on the conservation of African-Eurasian Migratory Waterbirds (AEWA-CMS);
- the Bern Convention on European Wildlife and Habitats;
- the Convention for the protection of Vertebrate Animals used for Experimental and other Scientific Purposes;
- the International Tropical Timber Agreement (ITTA);
- the Ramsar Convention on Wetlands of International Importance;
- the Agreement on the Protection and Sustainable Development of the Prespa Park Area;
- the CAMLR Convention for the Conservation of Antarctic Marine Living Resources;
- the UNCCD Convention to Combat Desertification in Africa;
- the Basel Convention on hazardous wastes;
- the Helsinki Convention on Watercourses and International Lakes;
- the Danube River Protection Convention;
- the Convention on the Protection of the Rhine;
- the International Tropical Timber Agreement (ITTA);
- the Alpine Convention and its protocols;
- the Ramsar Convention on Wetlands of International Importance;
- the Agreement on the Protection and Sustainable Development of the Prespa Park Area;
- the CAMLR Convention for the Conservation of Antarctic Marine Living Resources;
- the UNCCD Convention to Combat Desertification in Africa;
- the Basel Convention on hazardous wastes;
- the Helsinki Convention on Watercourses and International Lakes;
- the Danube river basin convention;
- the Rhine river basin convention;
- the Barcelona Convention and its protocols;
- the OSPAR Convention;
- the Bonn Agreement;
- the Helsinki Convention on the Baltic Sea; and
- the Bucharest Convention on the Protection of the Black Sea Against Pollution.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

International treaties to which the EU is a party drive the EU's regulatory policy agenda, as the EU must implement any commitments it has undertaken in this regard in a timely manner.

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UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

The European Union recently issued comprehensive environmental strategies, illustrating how environmental challenges are now a top priority.

On 11 December 2019, the European Commission presented the European Green Deal, an ambitious agenda for the EU to become the first climate neutral continent by 2050, while also protecting, preserving, conserving and enhancing the EU's natural capital, as well as citizens' health and wellbeing from environmental risks and impacts. The European Green Deal priorities include, inter alia, the protection of biodiversity and ecosystems, the reduction of air, water and soil pollution, and the movement towards a circular economy. In this regard, the Commission adopted a new EU Biodiversity Strategy for 2030, which forms a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. In 2022 and 2023, the Commission issued a great number of proposals for directives and regulations, either aiming at revising, amending and strengthening existing law (inter alia the Water Framework Directive, the IED, the Ambient Air Directive or the CSDDD) or proposing new laws (inter alia the Directive on Soil Monitoring and Resilience or the Nature Restoration Law, the Deforestation Regulation and the CSRD).

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Summary

LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The Charter of the Environment, backed by the French Constitution, gives constitutional value to the principles of environmental law. The Environmental Code includes the main laws (article L) and the main decrees and orders (articles R and D). On this point, on 10 March 2023, new legislation, albeit concerning renewable energies, modified certain elements of the Environmental Code. In particular, the legislator has created geographical zones within which environmental authorisation review times are reduced. It has also been made easier to obtain an exemption from the ban on harming protected species. The provisions of general criminal law defined in the Criminal Code may come into play (such as deliberate endangerment of others or reckless killing and injury). The Civil Code now contains specific provisions on civil liability in environmental matters (articles 1246 to 1252 of the Civil Code).

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

French legislation includes an old system of integrated pollution control with the legislation on environmentally classified installations. The installations are specified in a nomenclature which makes it possible to determine whether the installation in question is subject to authorisation (articles L.512-1 to L.512-6 of the Environmental Code), approval (articles L.512-7 of the Environmental Code) or declaration (articles L.512-8 to L.512-13). The classification obviously depends on the sector of activity, the size of the company and the level of risk. The so-called Seveso low threshold installations are subject to additional obligations (articles L.515-32 to L.515-42). If installations subject to declaration or registration do not, in principle, present serious dangers or inconveniences, or if these dangers and inconveniences can, in principle, in view of the characteristics of the installations and their potential impact, be prevented by compliance with general requirements, installations subject to authorisation are subject to an environmental authorisation, which is a global authorisation (article L.181-1) subject to public inquiry and based on a file including an impact study. The most dangerous installations may also require a hazard study. Finally, basic nuclear installations are subject to very specific legislation.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Polluted soils belonging to industrial operators must be remediated at the end of the operation. In accordance with article L.556-3 of the Environmental Code, in the case of an installation classified for environmental protection (L.511-1 of the same Code), this is the responsibility of the last operator and the limitation period is 30 years. In other cases, the person responsible is the producer of the waste who contributed to the origin of the soil pollution or the holder of the waste whose fault contributed to it. Finally, to ensure restoration of the soil, in the absence of an identifiable responsible party and on a subsidiary basis, the owner of the polluted land is responsible if it is shown that he or she was negligent or unrelated to this pollution. The remediation is set out in the decree of cessation of activity; different levels of remediation can be envisaged with a specific procedure if a use other than industrial is envisaged. A December 2022 decree specifies possible uses (industrial, for residential, tertiary, outdoor recreational use like parks, agricultural, reception of sensitive populations, renaturation etc). The procedure of recourse to a third party to clean up and develop is now possible.

In general, the question of soil pollution is essentially dealt with from the point of view of waste (article L.541-3 of the Environmental Code), which gives the prefect the power to order decontamination and to take the necessary measures and sanctions to impose them if necessary.

There is an obligation to provide information (article L.514-20 of the Environmental Code) for the seller of land on which there has been an installation subject to authorisation or registration. Failing this, if the pollution renders the land unfit for use, the purchaser may request cancellation within two years.

Finally, French law authorises the establishment of public utility easements on polluted sites, within a 200 metre band around the exploitation zone, which are compensated for by the operator for neighbouring owners (articles L.515-11 and L.515-12 of the Environmental Code).

Regulation of waste

4 | What types of waste are regulated and how?

There is a lot of legislation on waste. It is regulated by the provisions of article L.541-1 et seq of the Environmental Code. Waste is defined in article L.541-1-1 of the Environmental Code as any substance or object that the holder discards or intends or is required to discard. The holder is responsible for the waste until its final disposal or recovery.

There are several categories of waste and soil. Final waste can be disposed of in storage facilities.

We distinguish between ordinary waste, household waste, industrial waste, hazardous waste and waste from electronic equipment, and many channels are subject to specific regulations within the framework of EPR channels, which implement the extended responsibility of the producer in the context of the circular economy.

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Once qualified, the waste must be treated. The principle of the waste treatment hierarchy of article L.541-1-1 of the Environmental Code is applied: preparation for reuse, recycling, recovery (including energy recovery) and disposal. Article L.541-4-3 sets out the conditions for a substance or object to be removed from waste status. Furthermore, the collection, transport and trade of waste are regulated and subject to administrative authorisation when it is waste presenting dangers and inconveniences (ie, hazardous waste). A European regulation (Regulation No. 1013/2006) defines a legal regime for the cross-border shipment of waste within Europe and to third countries. Mixing of waste is prohibited and the principle of proximity in waste management is a general principle.

The waste treatment facilities referred to in articles L.541-22 to L.541-30-1 are subject to authorisation after an impact study and public inquiry.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

The provisions on air pollution control are contained in article L.221-1 et seq of the Environmental Code. Article L.220-2 defines air pollution. In this matter, bodies monitor air quality and ensure that the standards set at Community level are respected. There are specific provisions on indoor air quality and planning procedures: for example, the law provides for the promulgation of atmosphere protection plans or urban travel plans at local level. There is a national plan for the reduction of atmospheric pollutant emissions (article L.222-9). The standards are defined in article R.221-1 of the Environmental Code; in particular, nitrogen oxides, PM 10 particles, PM 2.5 particles, lead, sulphur dioxide, carbon monoxide, benzene and ozone are monitored. Specific rules exist for motor vehicles, but also within the framework of legislation on classified installations.

Having ordered the state, since 2017 (Conseil d'État, 12 July 2017, No. 394254), to enforce European air quality standards, incorporated into French law, on 17 October 2022 (No. 428409), Conseil d'État ordered the French state to pay two penalty payments of €10 million euros as nitrogen dioxide pollution limits continue to be exceeded in several areas of France.

Regarding the energy efficiency of buildings, there is a wealth of regulation in the environmental, energy and building codes. The 2020 technical regulation sets the standards. The objective is to achieve passive or even positive energy buildings. Energy saving certificates make it possible to finance the work, particularly concerning the thermal flaws of the oldest buildings, by the emitters of greenhouse gases. These rules are set out in the Energy Code.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

The protection of waters is the subject of abundant legislation. Marine waters belong to the public domain of the state; watercourses belong to the fluvial public domain and some watercourses may be private.

Since the law on water No. 92-3 of 3 January 1992, the environmental code provides, in articles L.214-3 and following, a general principle of authorisation or declaration for all

installations, infrastructures, works and activities leading to water withdrawals, a modification of the level or flow of water or discharges or deposits, even non-polluting. This authorisation is integrated into the environmental authorisation.

There are also provisions on the maintenance and policing of watercourses (article L.211-5-1° et seq).

There are specific provisions on marine waters and waterways open to maritime navigation to reduce pollution by discharge from ships or pollution due to exploration and exploitation operations. In addition, fishing is regulated and the pollution of watercourses affecting fish fauna is specifically punished.

Finally, specific provisions for the coastline allow it to be appropriated by the Conservatoire du littoral, and considerably limit construction not only on the seafront but also in the areas close to the shore.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Community law applies with the definition of Natura 2000 sites and Special Protection Areas and Areas of Community Interest.

There are highly protected national parks (articles L.331-1 to L.331-6); regional nature parks, whose core is protected but whose periphery allows a certain number of activities defined by charters; classified nature reserves for those that are the most valuable and voluntary for owners who wish to protect their property; and finally marine nature parks.

In addition to this, there is legislation on classified sites for the most remarkable and on registered sites for the others, which give rise to specific protection with the intervention of the architect of the buildings of France for the delivery of authorisations that could affect these sites, with infringements.

Finally, urban planning documents must define a green and a blue grid to ensure ecological continuity and a certain number of rules relating to the protection of natural heritage.

The recent climate and resilience law No. 2021-1104 of 22 August 2021 has also introduced a rule of net zero artificialisation. In this regard, two decrees were recently published (Decree No. 2022-762 of 29 April 2022 and Decree No. 2022-763 of 29 April 2022), taken in application of article 194 of the Climate and Resilience Law. The first integrates within urban planning documents (more precisely the Regional Plan for Sustainable Development and Territorial Equality) the objective of zero net land artificialisation. As for the second decree, after article L.101-2 of the Urban Planning Code codified a definition of 'artificialisation', it answers the more precise question of how to classify a territory as artificialised or non-artificialised soil, to determine whether an urban planning document is indeed oriented towards the objective of 'zero net artificialisation'.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

Natural species are protected by a ban on destroying them and the habitats surrounding them if they are of scientific interest or if they are endangered as defined by the Habitats Directive (article L.411-1 of the Environmental Code). This prohibition can only be infringed by a derogation, investigated within the framework of the environmental permit when one is required, which is subject to extremely serious control by the judge and can block projects.

However, in a notice dated 9 December 2022 (No. 463563), Conseil d'Etat ruled that this derogation is only needed if the risk that the project entails for protected species is 'sufficiently well characterised'. To demonstrate that the risk is not sufficiently well characterised and therefore does not require a derogation, the petitioner can consider measures to avoid the risk, as well as measures to reduce it.

In addition, one condition for this derogation is that the project must be justified by a compelling reason, including, among others, an 'imperative reason of overriding public interest' (L. 411-2 of the Environmental Code). On this matter, the new Renewable energies legislation of 10 March 2023 now stipulates that renewable energy production projects are presumed to respond to an imperative reason of overriding public interest.

The 2016 Biodiversity Act introduced the avoid, reduce, compensate sequence, which obliges any project likely to have an impact on spaces, protected species or not.

There are also rules for the conservation of natural habitats: Natura 2000 sites, national botanical conservatories and regional conservatories of natural areas (articles L.414-1 to L.414-11). Zones of ecological, faunistic and floristic interest have been set up, which require a certain level of protection. The Code prohibits the introduction of invasive species and more generally those likely to harm the environment, fauna and flora (article L.411-5).

Last, hunting is subject to numerous provisions that are very lax compared to other European countries.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Noisy activities are regulated according to the type of activity or infrastructure (road, rail, aeronautics, etc). In principle, no activity may produce a noise emission greater than 2 dB compared to the previous situation, with limits of 65 dB during the day and 60 dB at night. To comply with this standard, the mayor or the prefect has the power to intervene and force noisy activities to reduce the level of noise. In addition, article R. 1336-5 of the Health Code punishes neighbourhood noise (ie, any particular noise that is detrimental, in a public or private place, to the tranquillity of the neighbourhood or to human health because of its duration, repetition or intensity).

There are no specific regulations on odours, but within the framework of legislation on classified installations it is possible to regulate odour nuisances. The question of vibrations is regulated by the regulations concerning equipment and certain types of activities within the framework of the environmental permit. As a reminder, this environmental authorisation, codified in the Environmental Code by Order No. 2017-80 of 26 January 2017, brings together within it the procedures of various previous authorisations (IOTA declaration under article L.214-3, ICPE registration or declaration under article L.512-7 or L.512-8, etc).

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

Environmental liability is a general principle of French law, and the polluter-pays principle is included in the Environmental Charter. The legal regime is specified in the case of the application of the Directive of 1 August 2008 in article L.160-1 et seq of the Environmental Code. Damage caused to the environment is compensated in the event of serious harm to human health due to soil contamination, serious impairment of the chemical or quantitative ecological state and ecological potential of water, impairment of the maintenance or restoration to a favourable conservation status of protected species and impairment of ecological services. Ecological damage is repaired in kind by the operator based on a prefectoral order that makes the operator responsible for preventing and repairing the damage. This text only concerns the operators of classified installations and not private individuals.

Moreover, ecological damage caused to private individuals by any polluter may be compensated based on the provisions of article 1249 of the Civil Code, which recalls that compensation for ecological damage is made primarily in kind, but that the person responsible may be ordered to pay damages allocated to the repair of the environment.

On this legal basis, on 12 January 2023, the judicial court of Lilles found a sugar-producing company guilty of polluting the river Escaut through its negligence, and ordered it to pay a fine of €500,000 euros and over €9 million in damages.

Environmental taxes

11 | Is there any type of environmental tax?

Environmental taxes are relatively low in France. There is a general tax on polluting activities defined in article L.151-1 of the Code, which refers to articles 266-sexies to 266-terdecies and 285-sexies of the Customs Code. Several general taxes on polluting activities exist, concerning waste (hazardous or non-hazardous) and certain polluting emissions. It must be paid by companies.

Environmental reporting

12 Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Since Law No. 2015-992 of 17 August 2015 on the energy transition for green growth, in particular its article 173, listed and non-listed companies exceeding a certain threshold are required to publish extra-financial information on their impact on the environment. Article R.225-105 of the Commercial Code provides for the publication of information concerning the resources devoted to measures to prevent, reduce or remedy discharges into the air, water and soil, the measures taken to improve energy efficiency and the use of renewable energies, and, with regard to climate change, the significant greenhouse gas emissions generated by the company's activities.

The Corporate Sustainability Reporting Directive has extended these requirements to all companies with more than 250 employees and improve the content of non-financial reports. This directive empowers the European Commission to define sustainable reporting standards named 'ESRS', which are currently under study or public consultation.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The government communicates a lot about its environmental and climate policy. Many laws have been passed in recent years (two climate laws, a law on the circular economy, a law on land use planning, a law on sustainable food, etc). One more has been recently adopted, on 10 March 2023.

However, the stated objectives are generally not achieved. This is the case for the climate, since the objectives set by the national low-carbon strategy have not been met, and the commitment on the withdrawal of glyphosate has not been kept. In addition, many specific regulatory measures are inconsistently embedded in the overall policy.

The government has been repeatedly condemned by the courts for its failings in this area. In its latest ruling, dated 10 May 2023 (Conseil d'Etat, Commune de Grande-Synthe, No. 467982), the Conseil d'Etat ordered the government to take new measures by 30 June 2024, and to submit, by 31 December 2023, a progress report detailing these measures and their effectiveness.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

There are special regulations for classified facilities likely to cause major accidents involving hazardous substances. These are the Seveso high-low threshold facilities, whose authorisations are subject to hazard studies. The authorisation must be accompanied by an organisation plan in the case of a major risk. These installations may give rise to the implementation of public utility easements, in the vicinity and the establishment of a technological risk prevention plan, which defines a lethality zone and a morbidity zone around the dangerous installation. Special precautions must be taken and the expropriation of people living in the lethality zone is possible. In addition, a national regulation, the 'Risks' law of 30 July 2003, enacted in the wake of the AZF accident in Toulouse, provides for the introduction of a tool to control urban development in the vicinity of certain high-risk industrial facilities: technological risk prevention plans (PPRT).

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

Within the EU framework of REACH and CLP, there are legislation and regulations on biocidal chemicals and nanoparticles. In addition to a permanent obligation to provide information on the evolution of knowledge on the impact of the substance on human health and the environment, which is the responsibility of manufacturers and importers, the latter are obliged to provide technical files and to inform the public authorities of any difficulties. Moreover, article L.521-6 of the Environmental Code authorises ministers to prohibit the manufacture, import, export, placing on the market or possession, or order the withdrawal or recall, of products or impose requirements when there are serious dangers or uncontrolled risks. The nature of dangerous substances is defined in the Community framework and by article 1342 of the Public Health Code.

The criminal provisions are quite serious, as are the administrative sanctions, which allow for a ban in the event of non-compliance with a formal notice.

Finally, there is specific legislation for biocidal products subject to a specific marketing authorisation (articles L.522-1 to L.522-19).

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

There are internal rules to prevent accidents in the workplace, based on the Labour Code. However, workers are indeed the first victims in the event of a serious accident, which is why the most dangerous installations are subject to a series of plans: an internal organisation plan, and a protection plan against technological risks. The first is a plan drawn up by

the company but submitted to the state. The second is drawn up by the state. It is achieved primarily through the development of a plan for the prevention of technological risks in the vicinity of the industrial site (articles L.515-15 et seq. of the Environmental Code). This concerns Seveso high-threshold industrial sites. These plans are then annexed to the local town planning plan, so that they can be directly opposed to third parties.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Whether it is a merger, an acquisition of shares or the acquisition of a company's assets, the costly issue of polluted sites and soil must be resolved. As the debtor of the remediation obligation is the last operator of the facility, the acquiring company may be subject to it as soon as it takes over the activity. In the case of a merger, the acquiring company must verify the absence of environmental criminal offences, as following a decision of the Court of Cassation (Crim, 25 November 2020, No. 18-86.955), it may be declared criminally liable for offences previously committed by the acquired company.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

In all of these situations, the most important issue concerns the question of polluted sites and soils. Indeed, the debtor of the remediation obligation is the last operator of the activity. If in the case of a real estate transaction the purchaser is not in principle subject to the remediation obligation, the situation is different as soon as he or she resumes the activity. The same principle applies to corporate reorganisations and bankruptcy proceedings.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The Public Procurement Code has always provided that the nature and scope of the needs were determined by considering the objectives of sustainable development in their economic, social and environmental dimensions. However, the law of 22 August 2021, which combats climate change, marks a new stage in the greening of public procurement by creating an article L.3-1 of the Public Procurement Code: 'Public procurement contributes to achieving sustainable development objectives, in their economic, social and environmental dimensions, under the conditions defined by this code', but above all, by creating new obligations such as taking the environment into account in the selection criteria for bids and in the contract clauses. What was a simple option for the buyer becomes a legal obligation. Decree No. 2022-767 of 2 May 2022, containing various amendments to the Public Order Code, introduces the use of an award criterion that takes into account the environmental characteristics of bids (articles L.2152-7 and L.3124-5 of the Public Order Code).

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

Many projects are subject to environmental assessment. Article R.122-2 of the Environmental Code and its appendix specify which projects are subject to such an assessment, either systematically or after a case-by-case examination. These projects include: installations classified for environmental protection (L.511-1 et seq. of the same code), installations, works and activities impacting water (L.214-3 et seq.), certain development projects, transport infrastructures, etc. Appendix of Article R. 122-2 of the Environmental Code is often modified. Thus, in 2022, photovoltaic electricity-generating facilities on roofs, as well as those on shaded parking areas, has been excluded from it.

When the project is subject to environmental authorisation, the environmental assessment is issued as part of the authorisation procedure.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

The environmental assessment procedure is based on a project file. Previously, a project certificate could be issued by the administrative authority, indicating the decision-making procedures and deadlines to be met (article L.181-6 of the French Environment Code). The use of this certificate was abolished by the 'renewable energies' law of 10 March 2023.

The file includes, in addition to the usual elements, and in particular concerning the activity, the installation or work with its supplication monitoring, an impact study with updated maps and a non-technical presentation note. The file is first submitted to a public inquiry phase and then a decision phase. The file must obviously comply with local planning regulations. The public inquiry lasts for at least one month and the investigating commissioner or commission of inquiry has one month to give its opinion. Any member of the public who wishes to do so may make observations during the public inquiry.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

As a general rule, the authority responsible for the environment is the prefect and the services of the regional directorate for the environment, development and housing. It is the prefect who issues environmental authorisations, classified installation authorisations, etc. For renewable energies projects, a prefectural contact person has now been appointed at regional level to monitor these files. It is also up to the state, and therefore the prefect, to impose administrative sanctions where necessary and to refer cases to the

public prosecutor if violations are committed. However, victims may also file a complaint with the public prosecutor if they have suffered damage. The minister remains the hierarchical superior of the prefect and can therefore be seized; in certain cases, authorisations are issued directly at ministerial level, particularly when they concern the entire territory, such as product authorisations.

However, other authorities may also have to intervene: mayors have jurisdiction over building permits, local nuisances, town planning and waste. Other bodies, such as the Office National de l'Eau et des Milieux Aquatiques, are involved in monitoring the environment and preventing damage, and can record offences; the French Office for Biodiversity protects biodiversity, manages protected areas and has officials who can also record offences.

Investigation

23 | What are the typical steps in an investigation?

Numerous administrative agents, if they are officers of the judicial police, can note environmental offences and refer them to the public prosecutor. The inspectors of classified installations in charge of controlling industrial operations can come to all sites to carry out inspections and, in the event of non-compliance with the rules of the authorisation or approval, send a report followed by an official statement of offence which can lead to a formal notice. If the formal notice is not complied with, it is an offence; moreover, the prefect then has the legal means to directly impose the carrying out of the necessary work and to suspend the operation of the installation.

Administrative decisions

24 | What is the procedure for making administrative decisions?

In the case of classified installations, the procedure is adversarial. The draft order is notified to the petitioner, who may make observations. The same applies to the reports of the inspectors of classified installations.

As a rule, individual decisions must be reasoned. Decisions can always be appealed within two months, as a general rule, from the date of notification for the operator. To contest the decision, the operator may use all legal means, including studies that they have commissioned, their own analyses, etc.

In order to reduce the risk of litigation, with the 'renewable energies' legislation of 2023, the legislator has modified the litigation system. Whenever possible, the judge will be required to regularise the authorisation. What's more, as is already the case in urban planning litigation, appellants will now have to notify the beneficiary that their apeal has been authorised, failing which they will be inadmissible.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

The range of administrative sanctions is extremely broad. When the operator of an installation does not comply with an obligation, they receive a formal notice with a deadline for compliance. If the deadline is not met, the prefect may proceed ex officio and at the operator's expense with the work, they may oblige the operator to deposit a sum corresponding to the amount of the work to be carried out, suspend the operation of the installations and order the payment of a fine, which may be as high as €15,000 (article L.171-8). All this is of course independent of the penal sanctions that can be pronounced.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

Any administrative decision can be challenged by a person with an interest. This may of course be the operator if the decision is unfavourable to them; the operator may also challenge it partially. However, neighbours or environmental protection associations can also appeal to the administrative court within two or four months, depending on the decision. The judge has full contentious power (ie, he or she can not only annul the decision or confirm it, but can also substitute an amending decision for the one that has been taken). The appeal is possible before the administrative court of appeal within two months of the judgment.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 Are environmental law proceedings in court civil, criminal or both?

In environmental matters, proceedings may be administrative if the aim is to challenge decisions or to request compensation for the damage caused by these decisions, or even when the regime for compensation for ecological damage defined by the Environmental Code is involved. The procedures can also be civil and criminal. They are civil when it is a question of classic or contractual tort liability and ecological damage based on the Civil Code. They are penal when it is a question of offences covered by the environmental code or even offences covered by the penal code when there is harm to persons, deliberate endangerment, poisoning, forgery, etc.

In criminal matters, since Law No. 2020-1672 of 24 December 2020 relating to the European Public Prosecutor's Office, environmental justice and specialised criminal justice, specialised chambers in environmental criminal law have been created. In addition, this same law has expanded the field of judicial agreements of public interest, which allow the prosecutor's office to conclude agreements with companies, which, in return for the payment of a fine and the obligation to regularise their situation and repair the environmental damage committed, can avoid going to trial.

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Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

The courts have the most extensive powers since they can stop an operation (administrative jurisdiction), order the restoration of polluted sites, impose heavy compensation, order work to be carried out under penalty, and finally sentence natural and legal persons to imprisonment and fines for the former, but also to other sanctions such as a ban on participating in public contracts.

Civil claims

29 Are civil claims allowed regarding infringements of environmental law?

Civil actions are possible; on the one hand, all authorisations issued in France are subject to the rights of third parties, which makes it possible to conduct both administrative and judicial proceedings. Contractual actions are of course possible, and compensation for ecological damage in the event of infringement is possible on the basis of the provisions of article 1249 of the Civil Code. To date, the courts have made little use of this remedy.

Defences and indemnities

30 What defences or indemnities are available?

The responsibility is mainly on the operator of a classified installation when it is an activity, but it can also reach the owner of land. It concerns the producer, importer and professional users of products. When there are several possible responsible parties, the responsibility can be joint or joint and several, depending on the case at the discretion of the court. In criminal matters, the limitation period is 10 years in terms of crime, six in terms of misdemeanour, or one in terms of contravention. In civil matters, the time limits vary, but the limitation period for financial compensation for classified installations is 10 years.

Directors' or officers' defences

31 Are there specific defences in the case of directors' or officers' liability?

In criminal matters, the question arises of the delegation of power from managers to officials who are capable of effectively performing their duties. The existence of a delegation of authority can be an effective defence. Soft law has an increasing place in French jurisprudence and the fact that an internal rule has been disregarded may not be sufficient to exclude the liability of the legal person (*Erika* decision, Court of Cassation, 25 September 2012). The fact of having respected the compliance rules may be an important element, especially as in French law the intentional element of the offence is generally required.

Appeal process

32 What is the appeal process from trials?

Civil and criminal decisions of first instance are all subject to appeal to the courts of appeal. Appeals against judgments handed down by the courts of appeal are themselves subject to appeal to the Court of Cassation, but this is not really a third level of jurisdiction insofar as the Court of Cassation does not interfere in the assessment of the facts, which is the responsibility of the trial judge. Moreover, there is a very strict lock before the Court of Cassation, which admits relatively few appeals.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

France belongs to the European area and consequently, it must respect all the European legislation under the control of the Court of Justice of the European Union. With regard to environmental conventions, the Espoo Convention on Environmental Impact Assessment in a Transboundary Context of 25 February 1991 and the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters of 25 June 1998 and certain territorial conventions concerning the Rhine or the Alps, for example, are also applicable. Finally, the European Convention on Human Rights, due to the development of the case law of the European Court of Human Rights on the environment, obviously plays a significant role.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

In French law, article 55 of the Constitution gives duly ratified treaties a higher value than the law. Consequently, in the event of a contradiction between a law and, a fortiori, a regulation and an international convention, the latter takes precedence. However, the Constitutional Council considers that it has not checked the conformity of laws with international conventions.

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

We note a growing intransigence of jurisprudence with regard to pollution; the Council of State made a series of very important decisions in the fight against climate change

(Grande-Synthe, 1 July 2021, and recently on 10 May 2023) but also in the fight against air pollution by condemning the French state to pay €10 million for not having conformed to a decision of justice obliging it to reduce the emissions of nitrogen dioxide and fine particles. The Constitutional Council, for its part, in a decision of 20 January 2020, recognised the possibility of infringing the freedom of trade and industry to protect the right to life.

With regard to environmental criminal law, it may be noted that, for the first time, a judicial court has taken up the public interest judicial agreements resulting from the Sapin II law of 2016 and then extended to environmental matters by Law No. 2020-1672 of 24 December 2020 relating to the European Public Prosecutor's Office, to environmental justice and to specialised criminal justice. Three agreements were thus negotiated and concluded between the public prosecutor's office and companies acknowledging that they had committed criminal acts (pollution of a watercourse).

Of course, the year 2023 was marked by the adoption of the 'renewable energies' law of 10 March 2023, which aims to accelerate the establishment of new renewable energy production facilities. New legislation concerning the establishment of green industries is currently being drafted.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

There are multiple legal instruments dealing with the environment, the most notable of which are mentioned below:

- The Environment (Protection) Act, 1986 (EPA) is an umbrella legislation for environmental protection in India. It empowers the union government to *inter alia* determine standards for industrial emissions and effluents, regulate location of industries, assess environmental impact of projects before their commencement, etc. Under this Act, the union government has introduced Coastal Zone Regulation Notification, 2019 (CRZ Notification), Environmental Impact Assessment Notification, 2006 (EIA Notification), Solid Waste Management Rules, 2016, etc.
- The Water (Prevention and Control of Pollution) Act, 1974 (Water Act) lays down the framework for the prevention and control of water pollution.
- The Air (Prevention and Control of Pollution) Act, 1981 (Air Act) lays down the framework for the prevention, control and abatement of air pollution.
- The Forest (Conservation) Act, 1980 (Forest Act) provides the framework for conservation of forests in India and the requirement to obtain prior clearance for diversion of forest land for non-forest purposes.
- The Biological Diversity Act, 2002 (Biodiversity Act) provides for conservation and sustainable use of biological resources and fair and equitable sharing of the benefits arising out of their use.
- The Wild Life (Protection) Act, 1972 (Wildlife Act) is the legislation focusing on the conservation of wildlife species and their habitats in India.
- The National Green Tribunal Act, 2010 provides for establishment of the National Green Tribunal (NGT) for adjudication of cases involving any substantial question relating to the environment.
- The Public Liability Insurance Act, 1991 lays down the requirement to obtain public liability insurance for providing immediate relief to persons affected by accidents while handling any hazardous substance.
- The Prevention of Money Laundering Act, 2002 (PMLA) is a special legislation to prevent money laundering and to provide for confiscation of property derived from or involved in money laundering. Any offence under the Air Act, Water Act, EPA, Wildlife Act and Biodiversity Act can be separately proceeded against under the PMLA.

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Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

The Air Act and the Water Act mandate industries that are likely to emit pollutants or discharge effluents to obtain a prior consent from their respective State Pollution Control Board (SPCB) or Union Territory Pollution Control Committee (UTPCC) to establish and operate their facility. The Central Pollution Control Board (CPCB) has also released a list categorising various industries into red, orange, green and white categories based on their pollution potential. While the red category industries are highly polluting industries and require consent from the SPCB or UTPCC, white category industries do not require prior consent but only need to inform the SPCB or UTPCC. These environmental consents prescribe conditions and standards for undertaking industrial activities based on factors such as nature of raw materials, products being manufactured, production quantity, emissions and effluents generation, hazardous and other wastes generation, wastewater utilisation, etc. To regulate the effluents and emissions released by polluting industries, these industries are required to install online effluent quality and emission monitoring systems as a part of the conditions prescribed under the consent to establish and the consent to operate.

Similarly, environmental consents and authorisations are also required under other legislations depending on the nature of the industrial activity and the proposed location of a given industry. For instance, approval is required under:

- the Wildlife Act for projects located in or around notified protected areas;
- the Biodiversity Act for commercial utilisation of biological resources;
- EIA Notification to assess the environmental impact of a proposed project; and
- CRZ Notification for projects located in notified coastal zones.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

There are multiple pieces of legislation that deal with soil pollution in India. If the release of any pollutant has caused the contamination of soil, groundwater or land, the extent of liability will largely depend on the nature of the business activity, location of the industry and cause of contamination. The law requires that collection and testing of samples is done according to the provisions of the EPA and the Water Act, and the rules notified under these legislations. In cases where any contamination is discovered, the law provides for liability, which could be civil, criminal or both. Additionally, it may result in the closure of the industrial facility until such contamination is remediated and the non-compliances are addressed. In such cases of contamination, the current occupier or operator of the facility where the contamination has been discovered will be held liable. This liability could include the cost of clean-up and remediation, environmental damages, and compensation to those affected by such pollution. If the pollutant is 'hazardous' in nature, the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 ('Hazardous Waste Rules') and the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 will assume relevance. In cases involving hazardous materials, the liability may be higher due to their higher potential to cause harm.

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Regulation of waste

4 What types of waste are regulated and how?

Specific rules have been framed to regulate various types of waste, some of which are mentioned below.

- The Hazardous Waste Rules mandate safe handling and disposal of specified wastes that are considered hazardous in nature. Occupiers handling, generating or disposing of such waste are essentially required to obtain prior authorisation from the relevant SPCB or UTPCC and ensure regular disclosure of methods used for handling and disposing it in an environmentally safe manner.
- The E-Waste (Management) Rules, 2022 mandate the environmentally safe management of waste from specified electronic and electrical equipment, including their components, consumables, parts and spares. Persons producing, marketing, or importing such equipment are required to register with the CPCB and ensure their safe 'end-of-life' disposal as per the Extended Producer Responsibility (EPR) norms.
- The Plastic Waste Management Rules, 2016 require persons manufacturing or using plastic material for packaging or wrapping commodities to obtain prior authorisation from the CPCB or the relevant SPCB or UTPCC. They also need to ensure environmentally safe collection and disposal of plastic waste generated from their products under the EPR framework. The recent amendments in these Rules *inter alia* provide for the definition of biodegradable plastics, and the applicable standards and requirements for persons using compostable and biodegradable plastic for packaging.
- The Bio-Medical Waste Management Rules, 2016 require persons generating, handling or disposing biomedical waste to obtain prior authorisation from the relevant SPCB or UTPCC and regularly disclose details like the manner of handling and disposal of such waste.
- Battery Waste Management Rules, 2022 require persons manufacturing, marketing, or importing batteries or the equipment containing batteries to obtain prior authorisation from CPCB. These rules apply to all types of batteries regardless of chemistry, shape, volume, weight, material composition and use, and obligated entities need to comply with applicable collection and recycling/refurbishing targets for waste batteries.

Regulation of air emissions

5 What are the main features of the rules governing air emissions?

The Air Act mandates that any industry likely to emit air pollutants must obtain a prior consent to establish and thereafter the consent to operate from the relevant SPCB or UTPCC based on location of the industry. The union government has introduced National Ambient Air Quality Standards under the Air Act and emissions standards under EPA to provide parameters and standards for air pollutants such as sulphur dioxide, particulate matter, ozone, lead and carbon monoxide. SPCBs or UTPCCs can also introduce stricter standards for industries operating in a region with poor air quality.

The union government has released guidelines for buildings sector, such as the Energy Conservation Building Code, 2017 and Eco-Niwas Samhita, 2018, to encourage energy conservation and efficiency in residential and commercial buildings across India. Under

the Energy Conservation Act, 2001, authorities can direct energy audit of buildings (where notified energy-intensive industries are operating) if they consider it necessary for ensuring energy efficiency and conservation.

Protection of fresh water and seawater

6 How are fresh water and seawater, and their associated land, protected?

In India, water resources are managed and regulated by the government on behalf of general public as per the public trust doctrine. The Water Act lays down the framework for prevention and control of water pollution in India. It prohibits the release of pollutants beyond prescribed limits into any stream, well, sewer or land. SPCBs and UTPCCs have been established under this statute to inspect, issue approvals, and regulate and prevent industries from discharging effluents into a stream, sewer or land. Further, for the protection of seawater, CRZ Notification regulates commercial activities in the identified coastal zones based on their distance from the coastline and their ecological sensitivity. Such activities require prior approval from the Coastal Zone Management Authorities established under this notification. Any violation of this law will attract civil liability, criminal liability, or both.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

The EPA provides powers to the union government to take measures through the Ministry of Environment, Forest and Climate Change for environmental protection and conservation. It can, among other aspects, regulate the location of industries, designate ecologically sensitive zones and impose restrictions on activities therein, and examine proposed projects in any area before their commencement to assess their potential impacts on the environment and prescribe appropriate conditions to address such impacts.

The Forest Act mandates any person seeking the diversion of forest land for non-forest purposes to obtain prior clearance from the union government. It also has obligations related to compensatory afforestation and payment for forest land diverted. Moreover, the Wildlife Act provides for different types of protected areas in India – national parks, wildlife sanctuaries, community reserves and conservation reserves. Commercial activities within protected areas or eco-sensitive zones notified around them require prior approval from the National Board for Wildlife headed by the Prime Minister of India. The rights of private persons or communities dependent on forest land and protected areas are required to be recognised before the commencement of proposed activities in these areas.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

The Wildlife Act lays down the regulatory framework for the protection of wildlife and its habitat in India. Post its amendment in 2022, the Act has four schedules dealing with different aspects like protected species of wild animals and plants, vermin and appendices of Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973

(CITES). The Act provides different levels of protection to wild flora and fauna, which is usually based on their population level, threats and conservation needs. The highest protection is accorded to threatened species such as rhinos, tigers, leopards, elephants and Great Indian Bustards. The Act prohibits hunting, possessing, dealing and trading in threatened wildlife species and products derived from them. India has also set up an administrative system to regulate trade in wildlife as per CITES. Certain animals, such as crows and mice, are mentioned as vermin (i.e., they are provided with the lowest level of protection). Union government can also notify eco-sensitive zones around the protected areas notified under the Wildlife Act to provide buffer zones around ecologically rich areas and specify prohibited, restricted and commercial activities in these areas for wildlife conservation. Additionally, the Biodiversity Act provides for conservation and sustainable use of biological resources and the fair and equitable sharing of the benefits arising out of their use.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

The Noise Pollution (Regulation and Control) Rules, 2000 regulate the level of noise in any area. They provide different standards for industrial, commercial, residential and silence zones for day and night. State and local government authorities including SPCB, UTPCC, District Magistrate, Police Commissioner or any other officer not below the rank of the Deputy Superintendent of Police designated for this purpose are responsible to enforce the prescribed standards. The rules allow any person to file a complaint with government authorities if the noise level from any activity exceeds the prescribed standards. There are also provisions concerning public nuisance in India's criminal law that cover noise, odours and vibration.

Liability for damage to the environment

10 Is there a general regime on liability for environmental damage?

In cases where the violation of environmental statutes like EPA, Air Act and Water Act results in pollution or any adverse impact on the environment, the person in charge or responsible for this damage will be held liable. The liability for this damage could be civil, criminal or both. As per the existing norms, the current occupier or operator of the facility is held liable for the environmental harm according to the polluter pays principle. There are guidelines in place to determine the amount of environmental compensation to be paid for this harm, based on various relevant factors. The responsible person may also be prevented by the CPCB, SPCB or UTPCC from continuing this polluting activity until the remediation measures are taken and the operations are environmentally benign.

Environmental taxes

11 Is there any type of environmental tax?

India used to levy clean energy cess on coal produced or imported in India to finance clean energy projects, but it was subsumed into the Goods and Services Tax Compensation Cess in 2017. India also levies an implicit carbon tax on petrol and diesel sold in India. Some

states in India, such as Delhi and Goa, also levy cess or tax on polluting activities within their jurisdictions.

Environmental reporting

12 Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

The industries are required to submit annual environmental statement providing information on air emissions, effluent discharge, etc., and annual reports concerning waste management at the site. Further, the Securities and Exchange Board of India (SEBI) has mandated the top 1,000 listed entities (by market capitalisation) in India to make disclosures related to the ESG aspects of their operations in the prescribed format (called Business Responsibility and Sustainability Reporting) from the FY 2022-23. SEBI has also approved the core format of this report to ensure reporting by specified entities and their value chain on the key performance indicators, which are required to be verified by a third-party agency.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The government, in light of its international commitments, is focusing much more on issues relating to climate change, biodiversity loss, pollution, degradation of ecosystems and ocean acidification. India is focusing on rejuvenation of rivers, reduction of air pollution, a shift to clean mobility and renewable energy, stricter standards for thermal power plants, groundwater recharge, scrapping of end-of-life vehicles, waste management and enhancing forest cover. The government of India has introduced 'LiFE' – 'Lifestyle for Environment' as a grass root, mass movement for combating climate change, enhancing environment actions to propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation and for sustainable and environment-friendly development. These objectives have positively influenced the legislative agenda with multiple revisions being made to the existing environmental law and new policies being introduced in recent times. These policies seek to incentivise environment-friendly practices that encourage innovative market based mechanism and encourage sustainable lifestyle by driving consumer/community towards behavioural changes.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

Indian law regulates various types of hazardous substances and wastes. The generation, handling, management and disposal of specified hazardous waste generated from industrial activities require prior authorisation from the relevant SPCB or UTPCC. Further, industries

manufacturing, utilising, importing or storing specified hazardous chemicals need to ensure compliance to prevent and control contamination from these chemicals. Persons or entities manufacturing, using, importing or storing specified hazardous or genetically engineered micro-organisms also require prior permission from the appropriate authorities. Industries handling such hazardous substances need to obtain the public liability insurance policy to cover for any damages caused or liability arising due to the accidents involving such substances.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

The EPA defines 'hazardous substance' to mean any substance or preparation that, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organisms, property or the environment. The Hazardous Waste Rules mandate safe handling and disposal of specified hazardous waste (which can cause or are likely to cause danger to health or the environment). Occupiers handling, generating or disposing of such waste are essentially required to obtain prior authorization from the relevant SPCB or UTPCC. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 prescribes various requirements for the occupier of a property where specified hazardous chemicals are manufactured, imported, stored or utilised. The Manufacture, Use, Import, Export and Storage of Hazardous Micro-Organisms/ Genetically Engineered Organisms or Cells Rules, 1989 mandates persons manufacturing, using, importing or storing specified micro-organisms to obtain prior permission from the appropriate authorities.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

Industries handling specified hazardous chemicals, wastes or microorganisms at the site must prepare an emergency response plan in case of industrial accidents. They must also ensure training of staff, disclose hazardous chemicals or wastes used or stored at the site and prepare safety reports. The government is required to establish crisis groups at the central, state, district and local levels, which will be responsible for aspects such as planning, preparedness and mitigation of accidents at the site, preparation of emergency plans, etc.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

In all commercial transactions, it is important for acquirer, buyer or lender to undertake thorough environmental due diligence for assessing the current status of compliance with

environmental law, historic non-compliances, pending notices or complaints, and ongoing litigations etc. It is also important to examine past non-compliance by this entity, as the 'current occupier' (ie, the resulting entity or acquirer) will be held responsible for the damages caused post the transaction by such past non-compliances at the site.

Environmental aspects in other transactions

18 What are the main environmental aspects to consider in other transactions?

Assessment of the current status of compliance with environmental law, historic non-compliances, and other regulatory actions should be done. It is also important to examine the past non-compliances by such entity, as the acquirer (who will be the 'current occupier' post transaction) will be held responsible for the damages caused by such past non-compliances at the site.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

The government has launched Sustainable Public Procurement and Green Room Air Conditioners initiatives to facilitate government buyers to procure various products and services with a sustainability component, including electric vehicles, water management services, waste management, energy efficiency services and the maintenance of solar, wind and hydro plants, etc.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

The EIA Notification provides that a prior environmental impact assessment must be carried out for new projects or expansion or modernisation of existing projects before granting environmental clearance (EC). The notification lists various activities that require an EC from the central or state authorities, depending on factors such as size, location and production capacity. Power plants, metal industries, mining projects, chemical industries, infrastructure projects (highways, airports, ports), waste treatment plants and pharmaceutical industries are some of the activities requiring prior EC.

Environmental assessment process

21 What are the main steps of the environmental assessment process?

The EIA Notification provides for screening, scoping, public consultation and appraisal as four steps for seeking an EC. The first two steps require the relevant government authorities to examine the application filed by the project proponent for categorisation of the project based on its location, size, capacity, etc, as well as the determination of key aspects for the

EIA process. A draft EIA report is prepared by the project proponent based on these aspects and shared with public for consultation through a public hearing and written comments. Based on the consultation, a final EIA report is prepared by the project proponent for detailed appraisal by the expert appraisal committee, which may either recommend the project for EC or reject it. The central or state government authority can accept or reject the application.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Ministry of Environment, Forest and Climate Change is the nodal ministry for enforcing the regulatory framework related to environment, biodiversity, forests, wildlife and climate change in India. It lays down the general policy framework on environmental issues.

The CPCB is the central authority that frames standards and implements regulations relating to industrial pollution, waste management, emissions or effluent standards, etc. across the country with the assistance of the relevant SPCBs or UTPCCs. The CPCB can issue directions, restrict operations and impose environmental compensation against non-compliant industries.

The SPCBs and UTPCCs are responsible for granting environmental consents to the industries located within their jurisdiction and thus monitoring operations of these industries on a regular basis. They are responsible for ensuring proper implementation of regulations relating to pollution control, waste management, compliance with emission and effluent standards, etc. They have the power to issue directions, closure orders and impose remediation costs against non-compliant industries.

Investigation

23 What are the typical steps in an investigation?

Authorities like CPCB, SPCB and UTPCC have powers to conduct an inspection at any industrial facility based on complaints received from the public or based on their own cognisance. They can seek any information about the activities being undertaken at the occupier's facility, which may include details about effluent discharges, air emissions, waste disposal, etc. They can, among other things, undertake survey of the facility, collect soil or water samples, enter and search the facility, or ask the occupier or other persons to provide further information. However, these statutory powers are required to be exercised in accordance with the procedure prescribed under the law.

Administrative decisions

24 What is the procedure for making administrative decisions?

If the regulatory authorities find any non-compliance at the facility, a show-cause notice is issued to the occupier or operator of the project for violation of environmental laws. Once the response is received, if it is not found to be satisfactory, closure orders could also be issued to non-compliant projects. However, closure orders are issued only after the parties are given sufficient opportunity to show that they are compliant. This response may include reasons backed by scientific evidence, such as sample analysis reports and other documents to show that the occupier or operator is operating in compliance with all environmental conditions and standards applicable in its case.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

The authorities can issue directions requiring polluters or violators to cease or restrict operations or activities causing pollution until these violations are rectified, pay environmental compensation for the damage caused, install a specified technology or equipment to ensure compliance, etc. They can also disconnect electricity, water or other provisions for non-compliant industry and initiate criminal prosecution against the persons responsible for the business activities of these violators.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

The occupier of an industry can challenge the order or directions issued by the authorities either before the Appellate Authority (established under the Air Act and Water Act) or the National Green Tribunal (NGT), as per the applicable provisions in the law within 30 days from the date of communication of the order/directions being challenged. Moreover, persons could also approach the relevant High Court invoking its writ jurisdiction under the Constitution of India seeking a remedy against the authority's directions. Orders of the NGT and the High Courts are appealable before the Supreme Court of India, which is the apex court in the country.

The aggrieved party can challenge these orders or directions on several grounds, including violation of the principles of natural justice, adverse actions taken despite operating in compliance with the applicable law, inadequate consideration of the information and documents submitted, or the sanctions imposed are not commensurate to the nature of the violation committed.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

India's environmental laws prescribe that their violation will attract liability that could be civil, criminal or both in nature. Civil liability could be imposed in the form of environmental compensation against violators by CPCB, SPCB or UTPCC and could be further revised by the courts, the NGT or the Appellate Authority based on relevant considerations. The property or money derived from the violation of environmental laws could be confiscated under the PMLA. The proceedings under PMLA are held before an Adjudicating Authority. A criminal prosecution could also be initiated against persons responsible for the conduct of business of the non-compliant industry before the appropriate criminal court, which cannot be inferior to one helmed by the Metropolitan Magistrate or a Judicial Magistrate of first class.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

India has established the NGT as an expert multi-disciplinary body to adjudicate cases involving substantial questions relating to the environment. While it adjudicates matters under both original and appellate jurisdiction, it has also been granted the power to take *suo moto* cognisance of issues involving the violation of environmental law. While adjudicating matters, the NGT can constitute expert committees for fact-finding exercises, including assessing the status of compliance with the law and the extent of damage caused. If it is proved that an individual or entity has violated the environmental law, NGT has the power to issue interim or final directions requiring this individual or entity to shut down or restrict its operations, take specific measures for rectification, pay environmental compensation under the polluter pays principle, restoration of the damage caused, or any other direction that it may deem fit to ensure justice. It can also issue directions to initiate disciplinary action against government officials for failure to perform their statutory duties.

In cases where criminal prosecution has been initiated, the relevant criminal courts will determine the punishment for the responsible persons after their trial as per the criminal law. Further, India's constitutional courts (High Courts and Supreme Court) can also adjudicate the environmental law cases under their writ jurisdiction enshrined in the Indian Constitution and grant remedies to the aggrieved parties whose rights have been affected by any environmental issues.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Yes, civil claims are allowed in cases of violation of environmental law. Non-contractual claims can be filed by an aggrieved person before the authorities or courts seeking relief from the activity causing violations, payment of environmental compensation for the damage

caused and restoration of the ecological damage. Contractual claims can also be filed by the parties before the relevant court or tribunal seeking indemnity or breach of contract for environmental issues where provisions to this effect have been mentioned in the contract between the parties.

Defences and indemnities

30 | What defences or indemnities are available?

While there are various defences available to a person, depending on the facts and circumstances of a case, some of the common ones could be:

- Non-maintainability of the case due to the lack of jurisdiction of the authority or court, absence of *locus standi* of the claimant, or breach of limitation period prescribed in the relevant environmental statute.
- The person has ensured compliance with applicable provisions that can be showcased with relevant scientific evidence.
- The said case falls under the exceptions to the tortious principle of 'strict liability' (ie act of god, claimant's own fault, claimant voluntarily agreeing to suffer harm, and damage caused due to an act of a third party). It may be noted that the Supreme Court of India in *MC Mehta v Union of India*, (1987) 1 SCC 395 substituted this principle with the 'absolute liability' principle.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Non-compliance with environmental laws in India makes a company, as well as the person directly in charge of and responsible to the company for the conduct of its business at the time of commission of offence, liable for punishment. However, in these cases, liability cannot be imposed if this person proves that the offence was committed without his or her knowledge, there was no way in which this person could have known about the non-compliance, or that he or she exercised all due diligence to prevent the commission of the offence.

Moreover, if it is proved that the offence has been committed with the consent or connivance or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed guilty of that offence and shall be liable to be proceeded against and punished accordingly.

The determination of the liability of directors is based on the facts and circumstances of a given case. In *Securities and Exchange Board of India v Gaurav Varshney*, (2016) 4 SCC 430, the Supreme Court of India held that the liability of a director for an offence committed by the company does not arise merely based on his or her designation or position in the company but is based on his or her role in its affairs. Specific averments regarding the director's role in the affairs of the company need to be provided for holding him or her liable for violations committed by the company.

Appeal process

32 What is the appeal process from trials?

The orders or judgments at the trial stage of criminal prosecution under environment laws can be appealed before the sessions court of the relevant jurisdiction. The decisions of the sessions court can be further appealed before the relevant High Court and then the Supreme Court of India.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

India is a party to various international environmental law instruments, including the Declaration of the United Nations Conference on Human Environment or Stockholm Declaration (1972), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973), the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), the Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal (1989), the Convention on Biological Diversity (1992) and the Rio Declaration on Environment and Development (1992). The government is also party to the recently approved Kunming-Montreal Global Biodiversity Framework under the Convention on Biological Diversity, which prescribes various goals and targets to address biodiversity loss in the world.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

The Constitution of India empowers India's Parliament to make suitable laws for the effective implementation of international agreements, treaties or conventions to which India is a party. The Supreme Court of India in *State of West Bengal v Kesoram Industries Ltd. and Ors*, (AIR 2005 SC 1646) observed that unless international commitments are enshrined in domestic law, they cannot be considered law of the land. However, courts can refer to these international commitments as a means to interpret domestic law, provided the international commitments are not inconsistent with domestic law.

In response to its international commitments, India has implemented various laws and policies to address specific environmental issues across the country. For instance, India enacted the EPA, the Air Act and the Water Act to implement the provisions of the Stockholm Declaration (1972). Similarly, the EIA Notification was introduced to implement the provisions of the Rio Declaration on Environment and Development (1992).

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

The government of India is working on various aspects of environmental protection. These include management of different kinds of waste, such as e-waste and plastic waste. The government has recently notified the revised regulatory framework for e-waste and battery waste management in India, which *inter alia* cover the waste from renewable energy equipment, solar panels, and electric vehicles. Similarly, the obligations of different entities for collection and management of these wastes under the extended producer responsibility framework have also been notified. The government has also prohibited the manufacture, use and sale of various single-use plastic products from 1 July 2022. Provisions to encourage biodegradable and compostable plastics have also been introduced.

The government is also focusing on creating a circular economy to promote resource efficiency and reduction in the exploitation of new resources for economic activities. This aspect has been enforced in the transportation sector through mandatory scrapping of end-of-life vehicles to reduce air pollution and promote the recycling and reuse of the material used for vehicle manufacturing. The Union Budget for financial year 2022–23 had also proposed various policy initiatives for other sectors to implement the circular economy.

Efforts are also being made to overhaul the environmental regulatory framework. The government had recently released the consultation papers for amendments in the Air Act, the Water Act, the EPA and the Public Liability Insurance Act, 1991 for decriminalisation of minor offences, uniformity in compliance structure, suiting current market realities, etc. Similarly, the Wildlife Act was amended in 2022 to rationalise its schedules, enhance penalties for violations, providing enabling provisions for regulating alien invasive species, etc. The Biodiversity Act has also been amended in 2023 with the objective of ease of doing business and simplifying the compliance requirements for various entities and to increase the penalty provisions under the Act. The amendment also decriminalises all offences under the Act and makes the offences punishable with a penalty between one lakh rules and fifty lakh rupees. The Forest Act has been amended to define the scope of the term 'forest' in India and to bring clarity to the applicability of the requirement of prior approval from central government for undertaking non-forest activities in these areas.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

Law No. 32 of 2009 regarding Management and Protection of the Environment, as amended by Law No. 6 of 2023 on the Stipulation of Governmental Regulation in Lieu of Law No. 2 of 2022 on Job Creation into Law (the Job Creation Law) (together, the Environment Law), is the main regulation in Indonesia pertaining to the environment. The Environment Law covers broad aspects of environment utilization and protection, including pollution control, environmental damage, administrative sanctions, the affirmation of environmental rights as part of human rights or civil liability, particularly strict liability for environmental damage, and criminal enforcement for perpetrators of environmental crimes.

There is a separate regulation, Law No. 23 of 2014 regarding Regional Governments, as amended by Law No. 1 of 2022 regarding the Financial Relationship between the Central Government and Local Governments, that grants regional governments the autonomy to enforce environmental protections in accordance with the Environment Law.

In addition, there are laws that are more narrowly focused to regulate specific areas or sectors of the environment, such as forest management and natural resources management. These laws include Law No. 41 of 1999 regarding Forestry, as last amended by the Job Creation Law (the Forestry Law); Law No. 5 of 1990 regarding Natural Resources and Ecosystem Conservation (Law 5/1990); and Law No. 18 of 2013 regarding Prevention and Eradication of Forest Damage, as amended by the Job Creation Law.

Other government regulations, such as those on the management and protection of the environment and peatland protection and management, as well as implementing regulations issued by Indonesia's Ministry of Environment and Forestry (MOEF), should also be taken into account.

Integrated pollution prevention and control

2 Is there a system of integrated control of pollution?

Indonesia has an integrated pollution control system. The MOEF recently issued MOEF Regulation No. 13 of 2021 regarding Continuous Industrial Emission Monitoring Information

System (MOEF Regulation 13/2021). This regulation obliges all businesses or activities that are mandated to monitor their emissions using the Continuous Emissions Monitoring System to integrate their data into the Information on Continuous Industrial Emission Monitoring System (SISPEK) no later than 1 January 2023. The MOEF will manage and oversee SISPEK. There are 10 industries required to use SISPEK. They are:

- iron and steel smelting;
- pulp and paper;
- synthetic fibre (rayon);
- carbon black;
- oil and gas;
- mining;
- thermal waste treatment;
- cement;
- thermal power generation; and
- fertiliser and ammonium nitrate.

The MOEF also has other systems to monitor environmental quality standards in Indonesia, eg, the Air Pollution Standard Index and the Wastewater Quality Monitoring System, among others.

Soil pollution

3 What are the main characteristics of the rules applicable to soil pollution?

There are two types of soil pollution under the Environment Law, namely toxic and hazardous waste (B3 Waste) and non-B3 Waste. B3 Waste is categorised based on level of hazard: Category 1 B3 Waste, which has acute and direct effects on humans and the environment, and Category 2 B3 Waste, which has sub-chronic or chronic and indirect effects on humans and the environment.

To determine levels of contamination and whether the waste is categorised as B3 Waste or non-B3 Waste, the following waste characteristic tests can be conducted:

- characteristic test for explosivity, ignitability, reactivity, infectivity or corrosivity;
- characteristic test for toxicity using the LD_{50} Toxicity Test;
- characteristic test for toxicity using the Toxicity Characteristic Leaching Procedure; and
- characteristic test for toxicity using the Sub-chronic Toxicity Test.

The list of contaminants and toxicity parameters is provided in Government Regulation No. 22 of 2021 regarding Implementation of Environmental Protection and Management (GR 22/2021).

Anyone who carries out activities related to B3 Waste and where the activities have caused environmental pollution is obliged to carry out restoration or remediation of the contaminated land as well as make certain compensation. There is no statute of limitation applicable to environmental pollution or damage attributable to a business activity that uses, produces or manages B3 Waste. In addition, anyone who assigns its business to another party or

changes the nature of the business activities remains responsible for any environmental pollution.

Regulation of waste

4 | What types of waste are regulated and how?

Law No. 18 of 2008 regarding Waste Management (the Waste Law) defines waste as the remnants of daily human activities and natural processes in solid form. There are three types of waste:

- household waste is defined as waste that originates from daily household activities, which does not include faeces and specific waste;
- waste similar to household waste, defined as household waste that originates from commercial areas, industrial areas, special areas, social facilities, public facilities or other facilities; and
- specific waste, defined as waste that due to its nature, concentration or volume requires special management.

In general, the management of household 'waste' and 'waste similar to household waste' is mainly regulated under Government Regulation No. 81 of 2012 regarding Management of Household Waste and Waste Similar to Household Waste (GR 81/2012). GR 81/2012 governs that every waste producer has the legal obligation to reduce and handle waste. The Indonesian central government and regional governments have the overall obligation to ensure that waste management and handling are well implemented and environmentally sound in accordance with the objectives of waste management.

'Waste similar to household waste' and 'specific waste', which can be categorised as B3 Waste, require the parties who use or produce B3 Waste, or both, to conduct waste management and obtain a waste-related licence for each waste-related activity (eg, storage, collection, transportation, utilisation, processing, landfilling and dumping of B3 Waste).

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Air emissions are governed under GR 22/2021, which defines emissions as air pollutants resulting from human activities that are introduced or included in the air, that may or not potentially cause air pollution. GR 22/2021 divides emissions into movable and immovable emissions. Other provisions regulate 'nuisance' emissions (in the form of sounds, smells or vibrations) separately from air emissions. Immovable emissions are defined as permanent, non-moving or from a fixed source, including factory chimneys, industrial areas, water processing areas, housing, plantations and forestry. Whereas movable emissions are defined as non-permanent emissions originating from non-road and road-based means of transportation. Movable emissions sources include business and activities in the automotive industry, land transportation and heavy equipment.

To ensure products in the automotive sector fulfil the quality standard for air emissions, they shall be tested by a laboratory that is accredited by the National Accreditation Committee or

an accreditation agency that has signed a mutual recognition agreement with the Asia Pacific Accreditation Cooperation or the International Laboratory Accreditation Cooperation. For non-road-based land transportation and heavy equipment, the testing shall be carried out by personnel who have obtained a certificate issued by a certification agency in accordance with the provisions of laws and regulations governing the standardisation and conformity assessment sector.

The government controls air quality through the MOEF, which shall stipulate quality standards for both movable and immovable emissions (ie, limits on how much of certain pollutants can be emitted into the air). The MOEF may also issue technical approvals for certain emissions or pollutants for which quality standards have not been stipulated for certain businesses or activities, or both. These stipulated quality standards and technical approvals will then serve as guidance to be observed by businesses or activities in emitting emissions into the air. The technical approvals will generally contain, among other things, parameters and limits for air quality standards, as well as specific obligations and prohibitions. Typical obligations include the obligation to have an air emission control device, the obligation to observe air emission concentration and quality standards regularly, and air pollution control reporting obligations through an information system maintained by the MOEF. Standard prohibitions include the prohibition on direct emissions or sudden release and the disposal of non-fugitive emissions without using a chimney. In addition to obligations and prohibitions, a technical approval also will contain provisions on human resources competency standards, facilities and infrastructure, as well as the environmental management system adopted for emissions control.

In addition to the observance of quality standards and technical approvals issued by the government, GR 22/2021 introduced an obligation for all businesses or activities to internalise costs for managing air quality standards in their operations. These costs include those for air pollution control, development of low-emissions technology, use of clean fuel, human resources development, and other activities to support air pollution control.

The government has also envisioned energy efficiency through Government Regulation No. 33 of 2023 regarding Energy Conservation (GR 33/2023). This regulation provides a general mandate to various stakeholders (governments and private parties, which includes energy producers and users) to conduct energy conservation in the upstream (principally to conserve energy resources) and downstream (principally to increase energy efficiency and conservation through energy-saving behavior and the implementation of energy-efficient technologies) sides of energy management. For business actors, the relevant responsibilities are to conserve energy in every business process, utilise energy-efficient technology and produce energy-efficient goods and services. This regulation specifies certain responsibilities and obligations for the transportation, industrial household and building management sectors. For example, GR 33/2023 mandates that energy users in the transportation and industrial sectors with energy consumption equal to or more than 4,000 tonnes of oil equivalent per annum conserve energy through 'energy management,' which includes regular energy audits by an internal auditor or an accredited body certified by the Ministry of Energy and Mineral Resources. For energy users in the building sector, energy users with energy consumption equal to or more than 500 tonnes of oil equivalent per annum are subject to the same obligation. In the household sector, GR 33/2023 only provides a mandate to utilise energy-efficient equipment.

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We note that more stringent implementing regulations have been enacted by sectoral ministries as well as regional governments. At the provincial level, the DKI Jakarta government has implemented DKI Jakarta Governor Regulation No. 60 of 2022 regarding Green Buildings, obliging the owners of buildings with energy consumption equal to or more than 6,000 tonnes of oil per annum to conserve energy through energy management, including putting in place an energy conservation programme, regular energy audits and acting on the recommendations resulting from such audits, and reporting energy conservation efforts annually to the DKI Jakarta Governor through the relevant service office.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

The treatment and use of fresh water and seawater are regulated mainly by Law No. 17 of 2019 concerning Water Resources, as amended by the Job Creation Law (Law 17/2019). According to article 5 of Law 17/2019, water resources are controlled (but not owned) by the state and used for the greatest prosperity of the community. This regulation signifies the state asserting a public authority to regulate and control water resources, but not owning them as property of the state. The state asserts its control by regulating the management and utilisation of water resources to ensure the people's rights to water usage, and also by issuing licences and exercising supervisory authority over the utilisation of water resources by business actors and third parties. According to article 7 of Law 17/2019, water resources cannot be owned or controlled by individuals, community groups or business entities. Under those terms, the central government or regional governments, in accordance with established norms, standards, procedures and criteria issued by the central government, are given the task and authority to regulate and manage water resources.

In issuing authorisations to business actors to utilise water resources, the government has a priority list based on purpose of usage. The top priorities for water usage are people's daily needs (religious, sanitation, washing and other needs), farming and daily consumption through the provision of drinking water. When these basic needs have been fulfilled, business actors are allowed to use water, with non-business activities having a public purpose taking priority over business activities. A licence to utilise water resources for business activities may be granted to state-owned enterprises, regional government-owned enterprises, village-owned enterprises, cooperatives, private parties and individuals. The granting of a water resources utilisation licence for business purposes to private parties shall be carried out under certain and strict conditions under the principles of Law 17/2019 and as long as there is still available water. Law 17/2019 does not specifically set a limit on water source extraction, but the limit will be stipulated in each water utilisation licence, as applicable.

Water quality protection and management in connection with discharges into water resources is regulated by Government Regulation No. 22 of 2021 regarding Environmental Protection and Management (GR 22/2021). The Minister of Environment and Forestry, governors, regents or mayors shall prevent marine pollution or damage, or both, originating from land or sea. Under articles 246 and 247 of GR 22/2021, specific licences for dumping or wastewater disposal are required to carry out the otherwise prohibited action of marine waste disposal.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Indonesian laws regulate the designation of certain protected spaces and landscapes in the context of protecting biological diversity. Under Law 5/1990, there are several types of protected natural spaces, including nature reserves, nature preserves, wildlife sanctuaries, biosphere reserves, national parks and forest parks. These conservation zones and areas are determined by scientific criteria such as native flora and fauna, natural conditions, special characteristics and conservation value, as regulated in Government Regulation No. 28 of 2011 regarding Management of Natural Reserves and Natural Conservation Areas, as amended by Government Regulation No. 108 of 2015 (GR 28/2011). GR 28/2011 further provides that these protected spaces may be subdivided into different blocks such as protection blocks and utilisation blocks. Specifically for national parks, designated areas include core zone and utilisation zone, which connote different levels of protection status.

Outside the scope of the above, the government of Indonesia does not specifically regulate the protection of natural spaces and landscapes. Land and spaces in Indonesia are classified into forestry areas and non-forestry areas. Forestry areas are under the jurisdiction of the MOEF and non-forestry areas are subject to the authority of the Ministry of Agrarian and Spatial Layout Affairs. Land titles for non-forestry areas may be granted to individuals and legal entities. Forestry areas are further categorised by the government into protected forest, conservation forest or productive forest, which have different levels of protection, as their names suggest. For non-forestry land, the newly enacted Government Regulation No. 18 of 2021 regarding Right to Manage, Land Titles, Multistory Housing Units and Land Registration, which concerns land titles (GR 18/2021), regulates that land title owners are obliged to preserve and maintain the sustainability of the environment, maintain the conservation function of any bodies of water or other conservation functions. For a specific land title, that is, *Hak Guna Usaha* or Right to Cultivate, GR 18/2021 regulates that any areas of high conservation value within *Hak Guna Usaha* land shall not be subject to exploitation and should be preserved. Although the language of these regulations concerning land titles may seem aspirational, the government may have the grounds to revoke a party's land rights for certain environmental violations pursuant to the regulatory provisions.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

Article 20 of Law 5/1990 states that flora and fauna species are classified into protected species and unprotected ones. Protected species are subdivided into two categories, namely: endangered flora and fauna close to extinction; and flora and fauna with rare populations. The list of protected flora and fauna species is included in the appendix of MOEF Regulation No. P.20/MENLHK/SETJEN/ KUM.1/6/2018 regarding Protected Flora and Fauna, as lastly amended by MOEF Regulation No. P.106/MENLHK/SETJEN/KUM.1/12/2018.

The law does not elucidate different protection status for 'protected species' of flora and fauna, but rather a general prohibition. Article 21(1) of Law 5/1990 regulates that any party shall be prohibited from cutting down, taking, owning, damaging, destroying, keeping,

transporting and commercialising protected flora or its parts, either dead or alive. Protected fauna shall be protected from being captured, injured, killed, stored, owned, kept, transported or sold, dead or alive.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Noise, odours and vibrations are regulated as 'nuisance' emissions and regulated as part of air pollution prevention. Pursuant to article 208 of GR 22/2021, every business or activity emitting nuisance into the air must undergo a nuisance test performed by a lab registered with the MOEF or personnel who have been certified by certification agencies. Similar to air emissions, the MOEF shall stipulate quality standards for nuisance (ie, the tolerable limit under which such nuisance can be emitted into the air).

Environmental quality standards for noise are regulated under MOEF Decree No. 48 of 1996 on Noise Quality Standards. This decree regulates the tolerable noise decibel levels for different designated areas. The details concerning noise levels are attached in its appendices, which consist of the Noise Quality Standard and Noise Level Measurement, Calculation and Evaluation. In the same vein, the vibration quality standards are regulated under MOEF Decree No. 49 of 1996 on Vibration Quality Standards. It regulates the tolerable threshold of vibrations based on possible damage, impact, safety and comfort, and shockwave level, and based on the type of building and other similar criteria for vibrations. Finally, odour quality standards are regulated under MOEF Decree No. 50 of 1996 on Odor Quality Standards, which provides maximum permissible odour content in the air that does not interfere with human health and environmental comfort, covering both odour of single odorant and odour of mixed odorants.

According to GR 22/2021, quality standards for nuisance emissions (vibrations, noise or odours) shall be formulated and stipulated by the MOEF. Under the above MOEF decrees pertaining to the quality standards for vibrations, noise and odours, the governor of each province has the right to determine stricter quality standards than those regulated in the decrees. If stricter standards are not regulated at the provincial level the provision in the appendixes of the MOEF decrees will apply. If the environmental impact assessment (AMDAL) for a business or activity requires that the quality standard be stricter than the provisions in the appendices to those decrees, the stricter standards under the environmental impact assessment will apply.

Liability for damage to the environment

10 Is there a general regime on liability for environmental damage?

The Environment Law defines 'environmental damage' as a direct or indirect change to the physical, chemical or biological characteristics of the environment that exceeds the standard criteria for environmental damage. There are three potential liabilities due to unlawful actions causing environmental damage, namely civil liability, criminal liability and administrative sanctions, as follows.

Civil liability

Any qualified claimants (ie, community or environmental organisations, individuals and government institutions, both at the central and regional level) can file a civil lawsuit against any activities that have had an adverse impact on the environment. The Indonesian Environment Law adopts the principle of strict liability in respect of B3 Waste management. Pursuant to article 88 of the Environment Law, a party whose action, business or activity includes the use of hazardous and toxic material or B3 Waste; produces or manages B3 Waste; or poses a serious threat to the environment shall be held strictly liable for any resulting loss from damage to the environment without any requirement to prove fault.

Sub-paragraph (3) makes it clear that strict liability is imposed even if B3 Waste is not involved, if that party's 'action, business and/or activity' poses a serious threat to the environment. Therefore, based on article 88 of the Environment Law, any business that poses a serious threat to the environment shall be held strictly liable for the resulting loss without any requirement to prove fault.

Further, with respect to civil liability, the Environment Law stipulates that any person responsible for a business or activity that pollutes or damages the environment and that causes loss to a third party shall be liable to pay compensation or take remedial actions.

Criminal liability

Any person who causes environmental damage is subject to imprisonment and fines. The Environment Law defines the specific environmental damage and the corresponding duration of imprisonment and the amount of fines. For instance, any person who produces B3 Waste and does not conduct proper waste management is subject to imprisonment of one to three years and fines from one billion to three billion rupiah.

In addition to the Environment Law, other related laws (ie, the Forestry Law and the Natural Resources and Ecosystem Conservation Law) also regulate criminal provisions for any violations of the regulations thereof.

The Environment Law regulates corporate criminal liability. If the environmental crime is committed by, for or on behalf of a business entity, the criminal offence and penalty shall be imposed on the business entity or any person giving an order to engage in such criminal activity or any person acting as a leader in such crime.

Administrative liability

Any party who does not comply with the administrative obligations to conduct their business operations (eg, having the required licence or fulfilling the obligations under the licence) is subject to administrative sanctions in the form of a warning letter and coercive measures by the government (ie, temporary suspension of business activity, administrative fines, suspension of business licence or revocation of business licence).

Environmental taxes

11 Is there any type of environmental tax?

An environmental tax is imposed under Government Regulation No. 46 of 2017 regarding environmental economic instruments, as last amended by GR 22/2021 (GR 46/2017), to provide incentives or disincentives for sustainable environmental actions. Under GR 46/2017, an environmental tax is imposed on the activities of extracting and using ground water, surface water, bird nests, non-metals and minerals, motor vehicle fuel and motor vehicles, and other activities that surpass the environmental impact criteria of natural resources depreciation, environmental pollution and environmental damage.

In addition to the foregoing, the government recently enacted Law No. 7 of 2021 regarding the harmonised tax law, which regulates a carbon tax on carbon emissions that have a negative impact on the environment.

Environmental reporting

12 Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Under the Environment Law and GR 22/2021, every business licence holder, who presumably will already have completed and obtained their environmental approval, shall be obliged to periodically report to the MOEF, governor, regent or mayor with regard to its environmental requirements or obligations related to its environmental approval. The specific content and contours of the reporting obligation may differ from one party to another, noting that the environmental approval for different types of business activities may result in different obligations and fulfillments. Similar to the above, there also may be additional reporting requirements under separate regulations, such as GR 33/2023, which mandates energy users in certain sectors with energy consumption equal to or more than a designated level to conserve energy through 'energy management,' which includes regular energy audits .

As for ESG standards, we understand that compliance by Indonesian companies has been more voluntary in nature, in the absence of specific laws obliging ESG practices. But certainly, awareness of ESG practices and principles has risen in the past few years, presumably because they are attractive to both foreign and domestic investors.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The current government policy for environmental issues in Indonesia has its primary focus on increasing the ease of doing business by streamlining environmental approval requirements and documents, whose progress has been manifested in the amendment to the Environment Law by the Job Creation Law, along with the issuance of implementing regulations. Another main focus of the Indonesian government is to reduce greenhouse

gas emissions, particularly due to Indonesia's international commitment under the Paris Agreement to reduce its greenhouse gas emissions by 31.89 per cent (43.2 per cent with international support) by 2030, by various efforts in the forestry, energy, waste and other sectors. This target was included in Indonesia's enhanced Nationally Determined Contributions (NDC), which is the transition toward Indonesia's Second NDC, which will be aligned with the Long-Term Low Carbon and Climate Resilience Strategy (LTS-LCCR) 2050, with a vision to achieve net-zero emissions by 2060 or sooner. Overall, the government's stance on environmental issues can be described as trying to balance environmental conservation on one hand and the ease of doing business and development on the other hand.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

Yes, anyone who engages in hazardous activities as well as uses or produces hazardous substances is required to conduct waste management and obtain a waste-related licence for each waste-related activity (eg, storage, collection, transportation, utilisation, processing, landfilling and dumping of B3 Waste). Each activity thereof will require a different technical environmental licence, referred to as a Technical Approval and/or Operational Feasibility Letter. The technical environmental licence is in addition to the environmental assessments (ie, AMDAL, Environmental Management and Monitoring Measures or Statement of Environmental Monitoring and management) each business must obtain.

Waste management companies whose main activities are to collect, treat or manage waste sourced from other industries must obtain an additional waste management business licence.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

Hazardous substances are regulated by Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances (GR 74/2001). This regulation defines hazardous substances as substances that, due to their properties, concentration or amount, whether directly or indirectly, may pollute or damage the environment, or may endanger the environment, health, human survival and other living organisms. There is no specific definition of 'hazardous product' under Indonesian law.

Generally, a product is categorised as a 'hazardous product' if it contains hazardous ingredients. Article 5 of GR 74/2001 classifies hazardous substances as follows:

- explosive;
- oxidising;
- extremely flammable;
- highly flammable;

- flammable;
- extremely toxic;
- highly toxic;
- moderately toxic;
- harmful;
- corrosive;
- irritant;
- dangerous to the environment;
- carcinogenic
- teratogenic; or
- mutagenic.

Hazardous substances are further divided into three categories, namely hazardous substances that may be utilised, are of limited usage, or are banned. There are different treatments for hazardous substances according to their categorisation.

As the name suggests, banned hazardous substances are prohibited from being imported and used. Substances in the 'usable' or 'limited usage' category may be available for import or use subject to the fulfilment of certain requirements. GR 74/2001 requires any person or company that produces or imports hazardous substances into the territory of the Republic of Indonesia for the first time to submit an application for the registration of the substances with the Directorate General of Hazardous Substances, which is under the auspices of the Ministry of Environment and Forestry (MOEF). Registration of hazardous substances is required for usable hazardous substances and limited use hazardous substances (article 6 of GR 74/2001). Further information on the registration and notification procedure is set out in MOEF Regulation No. 36 of 2017 on Registration and Notification Procedures for Hazardous and Toxic Substances.

Restrictions or prohibitions on the use of hazardous substances exist for specific products or substances, such as fertilisers, polychlorinated biphenyls (PCBs) and mercury. For instance, Minister of Agriculture (MOA) Regulation No. 43 of 2019 concerning Pesticides Registration, as amended by MOA Regulation No. 19 of 2020 (MOA Reg 43/2019), stipulates that pesticides can be classified based on their hazard level, which are further divided into prohibited and non-prohibited hazardous pesticides. Prohibited pesticides cannot be used as determined by their active ingredients or additives or based on test results. The prohibitions and standard tests also refer to international criteria such as those set out by the Food and Agriculture Organization, the International Agency for Research on Cancer, the World Health Organization Joint Meeting on Pesticide Residues and the Stockholm Convention (article 10(2) of MOA Reg 43/2019).

Both PCBs and mercury are classified as hazardous and toxic substances that must be reduced or eliminated. There is no applicable regulation to make these marketable. Provisions related to PCBs and mercury are contained in MOEF Regulation No. P.29/MENLHK/SETJEN/PLB.3/12/2020 of 2020 regarding the Management of Polychlorinated Biphenyls and Presidential Regulation No. 21 of 2019 on the National Action Plan for Mercury Reduction and Elimination, respectively.

Another obligation applicable to products containing hazardous chemicals is regulated in Minister of Industry (MOI) Regulation No. 87/M-IND/PER/9/2009 of 2009 regarding the

Globally Harmonized System of Classification and Labeling of Chemicals, as amended by MOI Regulation No. 23/M-IND/PER/4/2013 of 2013 (MOI Reg 87/2009). MOI Reg 87/2009 regulates the application of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) on the labels and Material Safety Data Sheets (MSDS) of products. MOI Reg 87/2009, along with GR 74/2001, essentially obliges business actors that produce hazardous chemical substances to label these products and to create MSDS for their chemicals. These obligations are especially relevant for chemical manufacturing companies that produce plastic, cement or other products derived from chemical substances.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

The principal regulatory requirements for the prevention of industrial accidents are contained in Law No. 1 of 1970 on Occupational Safety (Occupational Safety Law). First, an employer is obliged to inspect the physique, mental condition and physical capability of employees pursuant to the type of occupation and industry standards, which may be under sector-specific regulations.

In addition to the Occupational Safety Law, each industry will usually have its own regulations on the prevention of industrial accidents. For instance, the oil and gas industry has specific guidelines from SKK Migas on coordination and communication in emergency situations. In another example, the Ministry of Industry's regulations on the chemical industry require safety procedures related to chemical substances and hazard labelling.

A workplace manager is further obliged to show and explain to every new employee:

- possible hazards in the work environment;
- every piece of safety and protective equipment obligatory in the work environment;
- personal protective equipment; and
- safety methods and attitude in conducting work.

A workplace manager is also obliged to comply with all terms and conditions applicable depending on the type of work and the work area. Under the Occupational Safety Law, a workplace manager is also required to:

- ensure all occupational safety requirements are placed in easily visible locations and are legible, according to the directions of the occupational safety expert or employee supervisor;
- display easily understood posters of occupational safety obligations and all other guidance materials in easily visible places, according to the directions of the occupational safety expert or employee supervisor; and
- provide (without cost) all personal protective equipment required for all employees and for individuals entering the work area, as well as necessary signs according to the directions of the occupational safety expert or employee supervisor.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Typically, the main environmental aspect to consider in the context of a share acquisition is to assess the necessary environmental documents of the target company. The key is to identify the required environmental permits and related licences in reference to the target company's business activities. For instance, a chemical company or a construction company will be subject to more strenuous environmental licensing requirements than a clothing wholesale or retail company. It also is necessary to assess if waste management licences are required, such as for dumping, transporting or storing B3 or non-B3 Waste. Such requisite licences will need to be identified during the due diligence stage. If the target company's requisite licences have not yet been issued or already have expired, certain representations and warranties on the non-existence of governmental sanctions and further covenants to obtain such licenses will usually be required.

For the acquisition of assets, the main environmental concerns will depend on the type of asset being acquired. Buyers will have to check whether the target asset, for example, land, building or concessions, is subject to certain environmental standards and whether those standards have been met. For example, if the target asset is a building, the buyer will want to determine if the building is required to have a certain amount of green open space, and if so whether that requirement has been fulfilled. To use another example, if the asset is a manufacturing factory, a more strenuous environmental site assessment will be needed to ensure there is no on-site contamination. In such an asset acquisition, buyers will also need to check if there are any outstanding environmental liabilities.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

For IPOs, the main environmental aspect is similar to that of a share acquisition. The company must disclose its environmental permits or licences (if any and as applicable) as part of its prospectus, which will then be submitted to the Indonesian Financial Services Authority as a part of the IPO process and subject to public scrutiny. Usually, companies planning a public offering obtain a legal opinion on whether there are any material issues, including related to their environmental permits or documents.

For financing transactions, while lenders do not specifically scrutinise the environmental documents of borrowers, they will usually seek a covenant that borrowers will continue to do business as usual with due authorisation and no material changes. Indirectly, the borrowing company must maintain its proper business and environmental licences to maintain compliance with the facility agreement.

As for real-estate transactions and bankruptcy proceedings or similar debt payment suspension proceedings, there is no generally applicable environmental aspect that is material to consider.

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Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

Yes, there may be a criterion for awarding contracts, for instance as tender qualification. Presidential Regulation No. 16 of 2018 regarding Procurement of Goods/Services by the government, amended by Presidential Regulation No. 12 of 2021, provides a normative foundation that the government procurement of goods or services shall need to pay attention to environmental aspects, 'including reducing negative impacts to health, air, soil and water quality, and utilising resources in accordance with the laws and regulations'. Specific qualification standards or prerequisites (including environmental protection and management) may be imposed by the particular governmental institution as the procuring entity. Also, public procurement rules applicable to state-owned entities (SOEs) also provide that each SOE board of directors may determine its own procedures for the procurement of goods or services.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

As a rule of thumb, business activities associated with different risk levels are subject to different types and degrees of environmental assessment. Based on the Environment Law and its implementing Ministry of Environment and Forestry (MOEF) regulations, any planned business or activity likely to have a 'significant impact' is required to have an AMDAL. On a milder level, businesses or activities with a less significant impact on the environment are required to have a UKL-UPL. And businesses with a far lower risk are required only to have a self-declaring statement on their ability to conduct environmental monitoring and management (SPPL) as their environmental assessment.

To implement the above rule, the MOEF recently stipulated a list of business activities that are obliged to have an AMDAL or Environmental Management and Monitoring Measures (UKL-UPL), under MOEF Regulation No. 4 of 2021. The list of businesses or activities requiring an AMDAL includes not only businesses of an industrial nature, but also 'high-risk' ones such as construction, metal refinery, petrochemical, power plant operations, mining and forestry, as well as non-business activities such as river water extraction, reclamation, dredging and others. The complete list of businesses and activities subject to the AMDAL or UKL-UPL requirement can be found in the appendices of MOEF Regulation No. 4 of 2021. Currently, businesses or activities that do not require an AMDAL or UKL-UPL require an SPPL.

An AMDAL, UKL-UPL or SPPL does not in itself act as a licence. Rather, they are a prerequisite step to obtaining the environmental approval that is an integral part of a business licensing application.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

There are three types of environmental assessments (AMDAL, UKL-UPL and SPPL), which depend on the degree of risk associated with the relevant business activity. The process for each type of environmental assessment is also different, with AMDAL having the most elaborate process.

The main steps in an AMDAL assessment involve the preparation of the environmental assessment document, public consultation, assessment by the authorities, including any revisions, and finally the issuance of a clearance in the form of an 'environmental approval,' which is an integral document for a company to obtain its business licensing. These processes are now governed by GR 22/2021.

For an AMDAL, the process begins with the preparation of the AMDAL document (consisting of a framework form, environmental impact analysis and environmental monitoring and management measures), which can be done by the business applicant itself or outsourced to a certified environmental consultant. During this stage, involvement of the community is mandated, which can be done through an announcement and public consultation initiated by the applicant.

According to GR 22/2021, the 'directly impacted' community can only submit their input or comments on the business plan within 10 business days after the public announcement. Subsequently, the MOEF, coordinating with the relevant ministry or ministries that have authority over the applicant's business sector, shall provide a Framework Form for the applicant to complete (via the environmental document information system or manually). The drafting of the AMDAL will follow the guidance in the provided Framework Form. Under GR 22/2021 there are three types of AMDAL (category A, B and C, depending on the complexity and nature of the business concerned). It further regulates the time limit for the preparation of the AMDAL document (180 days for type A AMDAL, 120 days for type B and 60 days for type C). However, the applicant may apply to the MOEF, governor, mayor or regent for an extension of these deadlines.

The AMDAL document is then submitted to the MOEF, governor, mayor or regent, along with additional technical licences such as compliance with water pollution quality standards, traffic impact analysis or other licences related to B3 and non-B3 Waste, as may be applicable, to obtain Environmental Approval. Indonesia's reformed business licensing system now integrates any additional environmental-related licensing into the AMDAL assessment process. Before the introduction of risk-based licensing, the AMDAL environmental assessment to obtain environmental approval was a standalone process, and business actors would sometimes also have to obtain additional technical environmental licences (eg, waste storage, transportation or dumping). Now, the environmental licensing processes have been streamlined into a single process to obtain Environmental Approval.

The AMDAL will be assessed by the MOEF, governor, regent or mayor through an environmental worthiness assessment team (Team). At each level, the Team, after its assessment, shall convey its recommendation to the MOEF, governor, regent or mayor, which will later serve as the basis for the respective authority to issue an Environmental Approval for the

business applicant. The authority to issue an Environmental Approval is parallel to the issuing authority for the relevant business licensing. For instance, if the applicant's business activity licence is subject to the governor's authority, the Environmental Approval shall also be subject to the governor's authority.

Pursuant to GR 22/2021, this assessment process must take place within 50 business days of the submitted application being deemed completed. This timeframe is inclusive of further revisions that may be requested during the assessment process by the authorities. However, given how recently this regulation was issued, we have not yet seen whether this provision is strictly implemented.

Finally, the MOEF, governor, regent or mayor will issue the Environmental Approval, which will also be made public through an environment information system that the MOEF reportedly plans to put in place but at the time of writing is still unavailable, or through the mass media. This shall be done within five working days of the Environmental Approval issuance.

The UKL-UPL process is generally the same as with the AMDAL, involving the preparation of a form and analysis and documentation of environmental management and protection efforts, which are then assessed by the relevant authorities (ie, the MOEF, governor, regent or mayor), with an Environmental Approval issued following a successful assessment.

The SPPL process is much simpler, requiring only a self-declaration by the application of its willingness and capability to manage and protect the environment. The SPPL is integrated directly into a company's business identification number.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Environment Law confers authority to both the central government (ie, the MOEF) and regional governments (governors, regents or mayors) in protecting and managing the environment and ensuring the compliance of businesses with environmental standards. Depending on the type of environmental approval or business licensing, either the MOEF or governors, regents or mayors will issue the licence based on the division of authority stated in the regulations.

As for the authority to issue administrative sanctions, the general rule is that sanctions are imposed by the issuing authority of the respective environmental approval or business licensing. For instance, the MOEF will issue sanctions related to environmental approvals that it issued, and governors will issue sanctions for approvals they issued. Nonetheless, the Environment Law also provides that in certain instances, the MOEF may 'step in' and take over the authority of the regional government if it deems that there has been a serious violation by a business actor whose licensing was issued by the regional government.

Aside from the MOEF and regional government officials, there are also sector-specific institutions such as the MOEF-formed Security and Law Enforcement Unit for the Environment and Forests, set up to combat interference, threats, and violations of environmental and forestry law; the Environmental Funds Management Agency, responsible for managing funding and economic instruments related to environmental protection and management; the National Water Resources Agency, which formulates policies and strategies for water resource management and provides considerations and evaluations for river areas and groundwater basins; and the AMDAL Appraisal Commission, which is responsible for appraising environmental documents and providing input to ensure the environmental feasibility of business activities. There also are independent government agencies (outside the MOEF) overseeing other specific sectors (eg, the Peatland Restoration Agency, which is mandated to rehabilitate peatlands in Indonesia).

Investigation

23 | What are the typical steps in an investigation?

In cases of environmental crimes, the Environment Law stipulates that the police and civil servant investigators in charge of environmental protection may be authorised to conduct investigations. For instance, the Security and Law Enforcement Unit for the Environment and Forests (a specific unit under the Directorate General on Environment and Forestry Law Enforcement under the auspices of the MOEF), may be given the authority to, among other actions, conduct investigations related to environmental violations, supervise, evaluate and report on forestry or environmental licences. Under the mandate of the Environment Law, the scope of powers granted is quite wide, including collecting preliminary evidence to clarify the existence of a legal event and form the basis for further examination. Authorities are also then able to carry out interrogations, examine records and documents, inspect places, seize materials and goods, conduct searches, seek assistance from specialists, and arrest and detain suspected perpetrators. In exercising such powers, the civil servant investigators would work alongside officers of the Indonesian National Police Force.

Administrative decisions

24 | What is the procedure for making administrative decisions?

State administrative decisions may be in the form of permits, orders, prohibitions and dispensations. The MOEF, governors, regents or mayors, and environmental agencies at the regency or municipal level are authorised to issue administrative decisions in the environmental sector, based on their exercise of discretion. Applications for environmental approvals may be submitted to the relevant state administrative official depending on the location of the business. The requirements differ depending on the type of environmental approval.

The process of assessing environmental documents as part of the environmental approval decision-making process also involves public consultations and evaluations by the authorities. Therefore, project proponents or elements of the public do have a right to be heard during the decision-making stage, particularly for environmental approvals. In other instances, such as the imposition of administrative sanctions, the authorities will usually issue a warning letter (usually three times), in response to which the relevant party may submit a reply or explanation. However, in more severe cases, the law provides that the

MOEF has the right to directly impose more stringent sanctions without prior warning (eg, revocation of licence or imposition of administrative fines).

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

The Environment Law stipulates different sanctions for different violations, ranging from administrative sanctions to criminal sanctions and civil liability, to be proven within and outside court proceedings.

For violations related to the Environmental Approval and business licensing, the central or regional government (through the MOEF, provincial, regency and municipal governments) may impose administrative sanctions. These sanctions range from written warnings to coercive actions (ie, suspension of production or business activities, cessation of production facilities, closure of wastewater or emission disposal tunnels, confiscation of goods that may lead to environmental violations, demolition) and suspension or revocation of business licensing. The court may also oblige the parties to recover or remediate (if possible) the damages caused to the environment.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

The current, amended version of the Environment Law no longer provides explicit provisions on the right of appeal for decisions on Environmental Approvals. However, as stipulated by Law No. 5 of 1986 regarding Administrative Court Proceedings, decisions issued by state administrative officials that are concrete, individual and final may be subject to administrative court review, for instance, due to formality irregularities or maladministration.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 Are environmental law proceedings in court civil, criminal or both?

Environmental law proceedings can be in both civil and criminal courts. Disputes relating to class actions, litigating rights of environmental organisations or litigating rights of the government may be settled in civil courts. Offences related to violations of environmental quality standards and corporate crime may be brought to criminal court. Decisions by state administrative officials can also be challenged in administrative courts.

Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

The courts of general jurisdiction have the authority to examine, adjudge and decide both criminal and civil law cases. The courts have the power to decide which party is liable for damage and the method of punishment and the appropriate compensation for the loss and environmental damage. They may also determine the payment of coercive money for each day of delay in the execution of court decisions.

Civil claims

29 Are civil claims allowed regarding infringements of environmental law?

Yes. This is provided in the Environment Law. Recently, the Central Jakarta District Court granted a lawsuit filed by a group of DKI Jakarta citizens who sued the government based on unlawful action (a non-contractual basis, similar to tort under Common Law) for the failure of the government to maintain clean air in the Indonesian capital.

In addition, as regulated in Decree of the Chief Justice of the Supreme Court No. 134/KMA/SK/IX/2011 on Environmental Judge Certification, environmental claims include civil violations in the field of environmental management, which includes but is not limited to the fields of forestry, plantations, mining, coastal and marine environment, spatial planning, water resources, energy, industry and natural resource conservation.

Defences and indemnities

30 What defences or indemnities are available?

The Environment Law provides a strict liability provision that applies to parties involved in business or activities using, producing or managing B3 Waste or activities that cause serious threat to the environment. They could be held entirely liable for any damages incurred without the plaintiff needing to prove that the other party is at fault. The official elucidation of article 88 of the Environment Law provides that strict liability thereunder does not require a plaintiff to prove the element of 'guilt' or 'fault'.

For other types of business activities, general principles of civil liability and damages shall apply. Allocation of liability, several and joint liability among the wrongful parties are also possible based on general civil and civil procedural law principles and basis of claims (ie, unlawful action or tort). The Environment Law also contains a provision that liable parties who committed tort may also be ordered by the court to conduct certain remedial actions other than paying for damages. The court may also fix an amount of enforcement money, which is a daily imposed fine for failure to implement the court's order.

The Environment Law does not regulate a different statute of limitation other than the general provision under the Indonesian Civil Code, which is 30 years. However, such statute of limitation is not applicable to environmental pollution or damage attributable to a business activity that uses, produces or manages B3 Waste.

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In terms of limitation of liability, the MOEF enacted MOEF Regulation No. 7 of 2014 regarding Compensation for Contamination and/or Damages to the Environment as a guideline for calculating compensation and remedial action in environmental damage cases. In theory, the amount of liability may increase due to the calculation of externalities in environmental damages, taking into account the irreversible nature of the damage, social costs to the communities affected and the degree and duration of damage.

In civil proceedings, a defence of force majeure may be applicable in exempting oneself from liability. Based on article 501(5) of GR 22/2021, a person may be relieved of strict liability if the environmental damage is caused by any of natural disaster or war; force majeure beyond human capabilities; or result of other polluting or damaging parties. Based on publicly available information, the infamous Sidoarjo mud flow, in Indonesia's East Java province, is an example of a natural gas drilling accident case that was not punishable because the House of Representatives and the Supreme Court found that the incident was a natural disaster and did not meet the provisions for such disaster to be recognised as a criminal act pursuant to article 116(1) of the Environment Law.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

The Environment Law provides that when an environmental crime is committed by, for or on behalf of a corporation, criminal prosecutions and sanctions can be imposed on the corporation or the person who gave the order or acted as the leader of the crime. If the crime was carried out by a person within the scope of their employment, criminal sanction shall be given to the person who gave the order or led the crime, regardless of whether the crime was committed together or individually. The Environment Law also refers to the perpetrator of a corporate crime as a 'functional perpetrator'. The elucidation states that prosecution should be aimed at the leader of the corporation who authorised and accepted the crime. Sanctions for individuals can come in the form of imprisonment and fines, and additional penalties can be imposed on the corporation.

Looking at past cases in Indonesia, the courts appear to be inclined to shift liability from corporations to individuals acting as corporate officers. In *Republic of Indonesia v PT Adei Plantation & Industry* (PT API), the court found that PT API was guilty and liable for environmental crimes. The court also stated that if PT API did not pay the fine, then the director, even if he was not a defendant, should be imprisoned for five months in exchange. In *Republic of Indonesia v Kosman Siboro*, although the court said they were unsure of the director's role in the crime, they still found him liable due to his position as director of the corporation. In specific cases, the director of a company that specialises in handling environmental, health and safety (EHS) matters can usually use the defence that they took all prudent and necessary actions and thus cannot be sued personally due to having acted as a prudent director under the Indonesian Company Law. If a director commits gross negligence or wilful misconduct that causes environmental harm, they may then be personally liable for the resulting damage, for instance, due to failure to comply with the standards and operational procedures related to EHS. There are past court cases where a company failed to obtain the necessary B3 Waste licensing for its business activities, which was then brought to court but it was the director who was sentenced.

Appeal process

32 What is the appeal process from trials?

The Indonesian court system comprises district courts at the first instance, high courts for appeal and the Supreme Court for cassation. Parties can appeal district court decisions 14 days after the date of the decision, and appeals cannot be filed against final and binding decisions. Then, the high court decision can be further appealed to the Supreme Court. The decision of the Supreme Court is mostly binding but can be brought to further judicial review in some instances.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

Indonesia has ratified several international environmental agreements, such as the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, the United Nations Convention on the Law of the Sea, Comprehensive Nuclear-Test-Ban Treaty, Vienna Convention on the Protection of the Ozone Layer, International Convention for the Prevention of Pollution from Ships, International Tropical Timber Agreement, and the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

Indonesia has adopted the various treaties into its national laws. For instance, Indonesia ratified the CBD through Law No. 5 of 1994 and created bodies such as the Biodiversity Action Plan for Indonesia and the Indonesian Biodiversity Strategy and Action Plan to pursue CBD goals in biological diversity, sustainable use and equitable sharing of benefits of genetic resources.

In another example, after Indonesia's ratification of CITES in 1978, Indonesia enacted Law No. 5 of 1990 on Conservation of Natural Resources and Their Ecosystems and implemented regulations for the convention. The regulations implemented licensing systems for species listed in CITES and the MOEF and the Ministry of Maritime Affairs and Fisheries have been appointed as national authorities.

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

The Job Creation Law's amendment of the Environment Law, along with the changes it introduced in the form of the new risk-based business licensing system, has been the hot topic in environmental law in Indonesia.

Notable changes include lessened community involvement in the context of the environmental impact assessment (AMDAL) drafting and preparation stage, with the amended Environment Law limiting the involvement of the community to those 'directly impacted' by a proposed business activity. This is a significant change from the previous definition of community, which included not only affected persons and communities, but also environmental activists and other parties affected by all types of decisions in the AMDAL process.

Another significant change was the revocation of a provision that allowed the cancellation of a company's environmental permit through a state administrative court lawsuit. GR 22/2021, an implementing regulation for the Environment Law, has also sparked debate, particularly its amendments on waste management. Three types of waste (fly ash, bottom ash and spent bleaching earth) were delisted from the B3 Waste category and are now categorised as non-B3 Waste. Some parties have raised the concern that this decision could be a setback to proper waste management and public health.

Looking past possible controversies and setbacks, positive trends include the simplification and streamlining of certain required environmental documents under the risk-based licensing approach. For instance, low-risk businesses shall no longer require a separate environmental document, which is now directly integrated into their Business Identification Number. This change will especially benefit micro, small and medium-sized enterprises. Businesses that engage in activities classified as medium to high risk for the environment still require an environmental monitoring and management efforts document (UKL-UPL) or an AMDAL, depending on the type of business and how it is regulated.

Aside from the Environment Law reform and the streamlining of business licensing, a topic of much discussion in the third quarter of 2021 was the recent victory in a lawsuit filed by a group of DKI Jakarta citizens, who sued the Indonesian President, the governor of DKI Jakarta and several ministers over air pollution in DKI Jakarta. The Central Jakarta District Court found that five public officials had committed an unlawful action and were at fault over air pollution in the Indonesian capital. The five public officials who were found guilty to have committed such unlawful action are Indonesian President Joko Widodo, DKI Jakarta Governor Anies Baswedan, Minister of Health Budi Gunadi Sadikin, Minister of Home Affairs Tito Karnavian and Minister of the Environment and Forestry Siti Nurbaya.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

Encouraged by international environmental trends, including the Rio de Janeiro Declaration of 1992, Japan enacted the Basic Act on the Environment in 1993. The Basic Act on the Environment sets out the basic principles of environmental conservation and clarifies the responsibilities of each party involved.

The basic principles of the Basic Act on the Environment are: (1) to ensure that current and future generations can enjoy the blessings of the environment and pass them on to future generations; (2) to build a society that facilitates sustainable development with reduced environmental impact based on the fair allocation of roles among all people; and (3) to actively promote global environmental conservation through international cooperation. The basic guidelines for the formulation and implementation of the environmental conservation policies set forth in the Basic Act on the Environment are to ensure that (1) the atmosphere, water, soil and other natural components of the environment are maintained in good condition so as to protect human health, conserve the living environment and properly preserve the natural environment; (2) the diversity of ecosystems, wildlife species, and other biological diversity are protected, and the various types of natural environments of the forest, farmlands and water bodies, etc. are systematically conserved in accordance with the natural and social conditions of the area; and (3) people can stay in touch with the lush green nature.

The Basic Act on the Environment requires the Japanese government to prepare a basic environmental plan (article 15). The basic environmental plan establishes the basic policy of the Japanese government with respect to (1) the outline of long-term comprehensive policies for environmental conservation; and (2) the particulars required to promote the policies for environmental conservation in a comprehensive and systematic manner, in addition to those provided for in (1). The fifth plan has been formulated in 2018 to reflect the Sustainable Development Goals (SDGs). In 2023, the sixth plan has been being discussed by the Japanese government to reflect recent discussions, including how to achieve each of (1) preservation of various environmental value (eg, carbon neutrality, circular economy, biodiversity) and (2) economic growth by 2030 or 2050.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

In Japan, environmental pollution became a social problem in the 1960s, and in 1967, the Basic Act for Environmental Pollution Control was enacted, which was later incorporated into the Basic Act on the Environment. The Basic Act on the Environment defines 'environmental pollution' as 'air pollution, water pollution (in addition to deterioration of water quality, this includes deterioration of water conditions and the quality of bottom sediments), soil contamination, noise, vibration, ground subsidence (excluding subsidence caused by land excavation for mineral exploitation) and offensive odours caused by business activities and human activities in a broad area, among the hindrances to environment conservation, which cause damage to human health or the living environment (including property closely related to human life as well as flora and fauna closely related to human life and their growing environment; the same applies hereinafter)'. The Basic Act on the Environment provides that prefectural governors may prepare environmental pollution control programmes based on the basic environmental plan (article 17). As of December 2020, 21 areas (18 prefectures and 140 municipalities) throughout Japan have formulated and are implementing such programmes.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

To combat soil pollution, the Soil Contamination Countermeasures Act was enacted in 2002. The purpose of this Act is to facilitate the implementation of countermeasures against soil contamination by formulating measures to ascertain the level of soil contamination by designated hazardous substances and measures to prevent harm to human health resulting from such contamination, thereby protecting the health of citizens (article 1).

The specific regulatory approach is as follows: if the prefectural governor or other competent authority finds that there is a risk of soil contamination following the closure of a specified facility using hazardous substances or upon receipt of a notification of changes in the form or nature of land of an area larger than a certain size, an investigation is carried out by a designated investigation institution, and land found not to be compliant with the standards specified in the ordinances of the Ministry of the Environment is designated as an area requiring action. If this is the case, under the direction of the prefectural governor or other competent authority, the owner of the land or the polluting party must prepare a plan for the removal of the contamination, carry out decontamination measures and report on the results.

Regulation of waste

4 | What types of waste are regulated and how?

Japan enacted the Waste Management and Public Cleansing Act in 1970 to ensure the proper disposal of waste. This Act regulates the proper disposal of waste, the establishment of waste treatment facilities, and waste treatment business operators. In addition, the following laws have been enacted as special laws or special measures laws:

- The Act on Special Measures concerning the Disposal of Disaster Waste.
- The Act on Special Measures concerning the Proper Treatment of Polychlorinated Biphenyl Waste.
- The Act on Promoting the Treatment of Debris that Drift Ashore concerning measures against objects drifting ashore.
- The Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials, which applies only to the accident at the Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi Nuclear Power Plant.

To promote the efficient use of resources, the Act on the Promotion of Effective Utilization of Resources was enacted in 2000. This Act is aimed at certain business operators and regulates the reduction of by-products, the use of recyclable resources or reusable parts, and labelling to promote sorted collection. Other laws that have been enacted to implement regulations according to the nature of individual goods include: the Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, the Act on the Promotion of Recycling of Small Waste Electrical and Electronic Equipment, the Construction Material Recycling Act, the Act on Promotion of Recycling and Related Activities for Treatment of Cyclical Food Resources, the Act on Recycling of End-of-Life Automobiles, and the Act on the Promotion of Recycling of Small Waste Electrical and Electronic Equipment.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Japan enacted the Air Pollution Control Act in 1968. This Act sets the emission standards for air pollutants (soot and smoke, volatile organic compounds, particulate matter, and mercury) emitted or dispersed by stationary sources such as factories and workplaces by type of substance and by type and size of facility.

There are also regulations for individual problems caused by mobile sources, such as the Act Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides and Particulate Matter from Automobiles in Specified Areas for automobile emissions, and the Act on the Prevention of Generation of Particulates from Studded Tyres for studded tyre dust.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Japan enacted the Water Pollution Prevention Act in 1979. This Act aims to prevent water pollution in areas of public water bodies and groundwater, and promotes the regulation of industrial water and the implementation of domestic wastewater measures. For industrial water, the Act sets effluent standards for factories and workplaces and mandates compliance with these standards. For domestic wastewater, the Act provides that municipalities designated as important areas for domestic wastewater measures may formulate programmes to promote domestic wastewater measures and provide guidance and recommendations for wastewater dischargers.

Other enacted laws include the Act on Special Measures concerning Conservation of Lake Water Quality, which regulates enclosed water areas such as lakes and marshes, and the

Basic Act on the Water Cycle, which clearly states the basic principle of maintaining or restoring a healthy water cycle and aims to promote the same in a comprehensive and integrated manner.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

In Japan, conservation of the natural environment is regulated by designating certain areas of the existing natural environment and restricting development activities within these areas. Development and other activities within designated areas are regulated by the Natural Conservation Act to ensure biodiversity in areas where the conservation of the natural environment is particularly important, the Natural Parks Act to protect areas of outstanding natural beauty, and other nature conservation laws.

In addition, the Act for the Promotion of Nature Restoration was enacted in 2002, which aims not only to protect existing natural environments but also to restore ecosystems and natural environments that have been damaged in the past. The significance of this Act is that various local entities, including non-profit organisations, are involved in the conservation, restoration, and creation of natural environments such as rivers, wetlands, mudflats, seagrass beds, socio-ecological production landscapes and forests.

The Environmental Impact Assessment Act also seeks to conserve the natural environment by requiring environmental assessments for major projects that may have an impact on the environment.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

In Japan, the Basic Act on Biodiversity, enacted in 2008, sets out the basic principles and responsibilities of each party with respect to the conservation and sustainable use of biodiversity.

Specifically, wildlife is protected by regulations that prohibit the collection of plants and animals and restrict the construction of structures in designated areas. Examples of such regulations include the Act on the Protection and Control of Wildlife, the Act on the Conservation of Endangered Species of Wild Fauna and Flora, and the Act on the Prevention of Adverse Ecological Impacts Caused by Designated Invasive Alien Species. Other enacted laws include the Invasive Alien Species Act for the prevention of adverse impacts caused by designated invasive alien species, and the Cartagena Act for the prevention of adverse impacts on biological diversity caused by the use of living modified organisms.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

The Noise Regulation Act, the Offensive Odour Control Act and the Vibration Regulation Act regulate noise, odours and vibrations mainly by designating regulated areas and setting regulatory standards.

The Noise Regulation Act sets regulatory standards for the establishment of factories, workplaces and construction works in designated areas, and requires notifications to be filed with the competent Japanese authorities in respect of the same. In addition, the Act requires the mayor of each municipality in Japan to request the relevant public safety commission to take remedial action if vehicle noise in the designated areas exceeds the threshold as set out in this Act.

The Offensive Odour Control Act sets regulatory standards for the emission of odours by factories and workplaces in designated areas.

The Vibration Regulation Act sets regulatory standards for the establishment of factories and workplaces, and construction works in designated areas, and requires notifications to be filed with the competent Japanese authorities in respect of the same. In addition, the Act requires the mayor of each municipality in Japan to request the relevant road administrator or the relevant public safety commission to take remedial action if road traffic vibration in the designated areas exceeds the threshold as set out in the Act.

Liability for damage to the environment

10 Is there a general regime on liability for environmental damage?

The Basic Act on the Environment provides for the polluter-pays principle, according to which the cost of a project undertaken by a national or local government or other corporation for a public works project should be imposed in a fair and appropriate manner on the person that caused the need for the project (article 37). On the basis of this polluter-pays principle, the Act on Entrepreneurs' Bearing of the Cost of Public Pollution Control Works was enacted. This Act provides a system to make polluting business operators bear the costs of public pollution control works by national and local governments.

The Basic Act on the Environment also provides for the beneficiary-pays principle, according to which if a person obtains huge benefits from the implementation of a public works project to conserve the natural environment, the costs shall be imposed on that person in a fair and appropriate manner, up to the maximum amount of the benefit (article 38). The Basic Act on the Environment also contains provisions on public burdens, such as the provision of financial aid under article 22, Paragraph 1.

Legislation enacted to deal with health hazards caused by specific pollutants include the Act on Compensation for Pollution-related Health Damage, the Act on Special Measures Concerning Relief for Victims of Minamata Disease and Solution to the Problem of Minamata Disease, and the Act on Asbestos Health Damage Relief.

Environmental taxes

11 | Is there any type of environmental tax?

In Japan, a global warming tax is levied on the use of fossil fuels such as petroleum, natural gas, and coal in proportion to their CO2 emissions. The tax revenue is used for measures to reduce energy-derived CO2 emissions, including energy-saving measures, the promotion of the use of renewable energy, and the use of cleaner and more efficient fossil fuels. Specific examples of these measures include: promoting the establishment of facilities for innovative low-carbon technology-intensive industries (eg, the lithium-ion battery business) in Japan, promoting the introduction of energy-saving equipment by small and medium-sized enterprises, and promoting the introduction of renewable energy in line with characteristics of each region via the Green New Deal funds and other resources.

In addition, a carbon levy is expected to be introduced by 2028 with the Act on the Promotion of a Smooth Transition to a Decarbonised Growth-Oriented Economic Structure (GX Promotion Act), which has been enacted in May 2023. For your information, GX is an abbreviation of 'green transformation', which means a transformation of economic system to a decarbonised / circular economy.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

In Japan, the greenhouse gas (GHG) emission calculation, reporting and disclosure system has been implemented under the Act on the Promotion of Global Warming Countermeasures, wherein specified emitters that produce significant amounts of GHGs are required to calculate and report their GHG emissions, and the national government compiles and publishes the reported information. This Act provides for a non-penal fine (*karyo*) for failure to report or false reporting.

In addition, under the Act on Rationalising Energy Use and Shifting to Non-fossil Energy (Energy Saving Act), specified business operators that use a certain amount of energy are obliged to submit periodic reports on their energy use.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The Japanese government is implementing various measures to achieve its 2050 Carbon Neutrality declaration and 2030 GHG emission reduction goal. The year 2021 saw the enactment of the amended Act on the Promotion of Global Warming Countermeasures, which clearly states 2050 Carbon Neutrality as a basic principle.

The amended Act on the Promotion of Global Warming Countermeasures also provides for the promotion of local renewable energy, which has been emphasised in light of the Great East Japan Earthquake and other weather-related disasters caused by global warming.

Furthermore, with the enactment of the GX Promotion Act in May 2023, the government expects to issue bonds for the transition to a decarbonised growth-oriented economic structure (GX Economic Transition Bonds) and introduce a carbon levy and an emissions trading scheme.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

Environmental pollution is a typical example of the adverse effects of harmful activities. The Basic Act on the Environment clearly defines 'environmental pollution' as 'air pollution, water pollution, ... caused by business activities and other human activities in a broad area ... which causes damage to human health or the living environment'. Air pollution and water pollution caused by radioactive materials are regulated under the Atomic Energy Basic Act.

The Basic Act on the Environment empowers prefectural governors to plan environmental pollution control programmes. When implementing pollution control projects based on these programmes, prefectural governors are entitled to special financial measures with the prior consent of the Minister of the Environment.

For industrial waste that requires appropriate treatment, the Waste Management and Public Cleansing Act provides for the polluter-pays principle. According to this principle, waste-producing business operators are responsible for the disposal of industrial waste resulting from their business activities. In addition, certain rules must be followed when a discharging party outsources the treatment of waste to a treatment contractor (eg, a discharging operator must conclude a treatment service contract with the treatment contractor before outsourcing the treatment of industrial waste and must submit a waste management sheet (ie, a manifesto) upon delivery of the waste). A person engaged in industrial waste treatment as a business must obtain a licence from the relevant prefectural governor.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

Chemical substances are controlled under different laws depending on their use and toxicity type. Among the various laws, the Act on the Regulation of Manufacture and Evaluation of Chemical Substances (Chemical Substance Evaluation Act) regulates the control of chemical substances that cause long-term chronic toxicity, which is the most important in terms of environmental impact. The purpose of this Act is to prevent environmental pollution caused by chemical substances that pose a risk of harming human health or interfering with the inhabitation and growth of flora and fauna. This Act provides for the prior examination of

newly manufactured or imported chemical substances, the requirement to file an ex post facto notification with the competent authority to ascertain the amount of manufactured or imported chemical substances, and the regulation of chemical substances in accordance with their respective properties.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

In recent years, the existing Japanese laws and regulations governing the working environment in workplaces where chemical substances are handled (eg, the Ordinance on Industrial Safety and Health) have been significantly amended. Regardless of the type of industry or the size of the workplace, those who produce or handle certain specified chemical substances are now required to carry out risk assessments (ie, to identify the hazards and harmfulness of chemical substances and their products, to estimate the degree of danger or health hazard to workers caused by them, and to consider risk reduction measures) and take countermeasures. Business operators are required to take risk reduction measures, if any, as specified in special ordinances (eg, the Ordinance on Industrial Safety and Health and the Ordinance on the Prevention of Hazards due to Specified Chemical Substances, both under the Industrial Safety and Health Act). Other risk reduction methods include substitution with substances of lesser hazard or toxicity, changing operating conditions such as chemical reaction processes, changing the form of chemical substances handled, or a combination of these methods.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

The importance of corporate social responsibility (CSR) has increased in recent years and the opportunities to investigate CSR in the course of legal due diligence (DD) for M&A transactions are expected to increase. Under the Act on the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc, by Facilitating Access to Environmental Information, and Other Measures (Environmental Consideration Promotion Act), business operators must not only provide information on the reduction of environmental impacts in their business activities but also consider information on the reduction of environmental impacts by other business operators when making investments or other transactions with these other business operators. The information to be considered includes whether these other business operators have caused environmental problems. The Environmental Consideration Promotion Act requires large companies to endeavour to publish environmental reports or otherwise disclose the status of environmental considerations in their business activities, and in recent years an increasing number of companies have published such 'CSR reports'.

Recently, there has been a growing interest in environmental DD. Environmental DD is particularly important for manufacturing companies with factories. Examples of required DD items

include surveying and assessing soil contamination, air pollution, and wastewater treatment on the land under the factories and the surrounding land, and investigating the status of environmental permits and licences, including those for the transportation and disposal of industrial waste. In May 2023, the Ministry of the Environment published a handbook on environmental DD entitled 'Introductory Guide on Environmental Due Diligence along the Value Chains: Environmental Due Diligence Practices Utilising Environmental Management System (EMS)' (please refer to the website of the Ministry of Environment, which is available in Japanese only).

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

The key environmental issues will vary depending on the type of business or activity. For example, in a real estate transaction, property valuation reports or engineering reports will include the results of investigations into soil contamination or other environmental issues. It is therefore important to look out for a possible statement in the due diligence report to the effect that 'a review of the real estate appraisal/engineering report is required'. In addition, a prospective purchaser must check the published information regarding land that meets certain conditions to be recognised as contaminated land under the Soil Contamination Countermeasures Act and local ordinances.

The problem of asbestos has also emerged recently. Under the Industrial Safety and Health Act and the Ordinance on the Prevention of Health Impairment due to Asbestos, business operators are required to take measures to remove and contain asbestos used in the buildings where their workers are employed if they are likely to be exposed to dust dispersed from the buildings.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

When awarding contracts, national and local governments, incorporated administrative agencies, national university corporations, and other public institutions are required to make a comprehensive evaluation that includes the environmental performance of the product or service to be purchased, in addition to the price, as provided in the Act on Promotion of Contracts of the State and Other Entities, Which Show Consideration for Reduction of Emissions of Greenhouse Gases, etc. Under this Act, the state and incorporated administrative agencies must establish a basic policy for promoting contracts that takes into consideration the reduction of GHGs and other emissions at their facilities.

The Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Green Purchasing Act), enacted in 2000, provides that the state and other public organisations should take the initiative to promote the procurement of environmentally friendly goods (ie, products and services that contribute to mitigation of negative environmental impact) with the aim of promoting the development of a society capable of sustainable development.

In addition, article 19 of the Basic Act on the Environment provides that 'the State shall take environmental conservation into consideration when formulating and implementing policies which have impacts on the environment'. This article is interpreted as having a 'cross-cutting clause effect', meaning that when the government makes administrative decisions or undertakes public works that affect the environment, it must give due consideration to the environment and conduct an environmental impact assessment in accordance with the magnitude of the impact. While the legal binding force of this provision is debatable, a ministerial disposition made without taking into account a material adverse effect on the environment simply because the specific underlying law does not contain a provision on the obligation to take the environment into account may be considered unlawful under this provision of article 19.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

The Environmental Impact Assessment Act of Japan, enacted in 1997, requires environmental impact assessments to be undertaken for large-scale projects that could have a serious impact on the environment.

Thirteen types of projects are subject to this Act: road projects, river projects, railway projects, airport projects, power (including renewable energy power) plant projects, industrial-waste final disposal site projects, land reclamation or drainage projects, land adjustment projects, new housing and urban development projects, industrial park development projects, new city foundation development projects, distribution business centre construction projects, and residential land development projects. These 13 types of projects are divided into Class-1 and Class-2 projects in descending order of scale. While all Class-1 projects must undergo an environmental impact assessment, the need for an environmental impact assessment for a Class-2 project is determined on a case-by-case basis.

In addition to the above 13 project types, port plans are also subject to port environmental assessments.

The above is a description of the projects covered by the Environmental Impact Assessment Act, but many local governments have established their own environmental impact assessment ordinances and may require environmental impact assessments even for projects smaller than the threshold provided under the Act.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

In the environmental assessment process, a business operator investigates, predicts and assesses the impact of the project on the surrounding environment and the local living environment, taking into account the views of the general public, local residents, and local authorities.

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First, at the planning stage of a project, the business operator prepares a document on primary environment impact consideration. Citizens, mayors, prefectural governors, or ministers can comment on this document. Based on these opinions, the business operator formulates a project plan, finalises the items of the environmental assessment and the proposed methodology, and prepares a scoping document on environment impact consideration. To determine the methodology of the environmental assessment, which must be carried out in accordance with the environment of each region, there is a procedure for hearing the opinions of local residents, other citizens, and local governments, called 'scoping'. The business operator then presents the results of the environmental assessment (survey, forecast, and evaluation) carried out in accordance with the methodology established by these procedures, and prepares a document summarising its view on the conservation of the environment. This document, known as the draft environmental impact statement (Draft EIS), describes the measures for environmental conservation (ie, mitigation measures). The business operator gives public notice of the Draft EIS, considers comments received (if any), revises the contents of the Draft EIS, and prepares an environmental impact statement (EIS). The EIS is submitted to the Minister of the Environment for review. The business operator must also submit the EIS to the licensing authority because the results of the assessment will be taken into account when deciding whether or not to grant a licence, approval, permit, etc.

In addition, even after the EIS process has been completed and the project has commenced, the business operator must submit a report on any environmental conservation surveys that have been conducted.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

There is no single agency responsible for the environment in Japan. All ministries and agencies are responsible for the environment, and their respective environmental efforts can be found on the Ministry of the Environment's website, which is available in Japanese only. The Ministry of the Environment is the lead agency responsible for environmental policy and the release of information.

The Basic Act on the Environment clarifies the state's responsibility by providing that the state is responsible for formulating and implementing basic and comprehensive environmental conservation measures in accordance with the basic principles of environmental conservation. While the Basic Act requires the government to formulate a basic plan for environmental conservation (basic environmental plan), it is the Minister of the Environment who is responsible for proposing a draft basic environmental plan (article 15, Paragraph 3 of the Basic Act on the Environment). The Minister of the Environment is also required to publish the basic environmental plan approved by the Cabinet.

The Basic Act on the Environment also clarifies the responsibilities of local governments, business operators, and citizens. Each local government is responsible for formulating and

implementing environmental conservation measures in accordance with the state's policies and other measures appropriate to the natural and social conditions of the areas under its jurisdiction. Business operators have the responsibility to dispose of soot, sewage, waste, etc, and to take other measures necessary to prevent environmental pollution or to properly preserve the natural environment, while citizens must strive to reduce the burden on the environment in their daily lives.

There are no laws or regulations that generally and comprehensively define the scope of authority of each regulatory body. Such scope is defined by individual laws.

Investigation

23 | What are the typical steps in an investigation?

Investigations can be broadly divided into (1) collecting reports from and conducting on-site inspections of business operators to determine their compliance status, and (2) requiring governments to take measurements to confirm the status of the quality of the environmental.

Some laws authorise certain persons (eg, regulatory authorities) to request reports from business operators to verify that they are properly complying with the regulations under each individual law. In practice, reports are often requested as administrative guidance, but in some cases an order for reports may be issued. False reports may be subject to administrative penalties. As encouraging whistleblowers to report is also an important means of investigation, the Whistleblower Protection Act is in place to protect whistleblowers.

On-site inspections by the government are permitted under many environmental laws, including the Soil Contamination Countermeasures Act, the Water Pollution Prevention Act, and the Waste Management and Public Cleansing Act. Most on-site inspections are conducted as administrative monitoring, and the law prohibits such inspections as a means of investigating crimes, whether general or administrative (usually a court warrant is required to enter the site for criminal investigations). However, an administrative officer may report to the police any violation found as a result of the on-site inspection. Upon receipt of the report, the police may conduct a compulsory investigation, if necessary, with a court warrant.

The Air Pollution Control Act and the Water Pollution Prevention Act require prefectural and certain municipal governments to measure and monitor the status of air and water pollution.

Administrative decisions

24 | What is the procedure for making administrative decisions?

There are two main types of administrative action: non-legally binding administrative guidance and legally binding adverse dispositions. While some individual laws require administrative guidance to be issued prior to any adverse disposition, in practice, administrative guidance is often issued even in cases where individual laws do not require administrative guidance prior to an adverse disposition.

An order by a regulatory authority to improve a state of violation (order for improvement) or to take necessary measures (order to take action) is, in principle, an adverse disposition under the Administrative Procedure Act. Therefore, before imposing the disposition, the regulatory authority must provide the person subject to the disposition with an opportunity to be heard and to rebut the order. Specifically, a hearing (a procedure presided over by an official selected from among the officials of the government agency that imposes the adverse disposition, at which the person subject to the adverse disposition may orally express his or her opinion, submit documentary evidence, and ask the government officials questions) must be held for relatively serious dispositions (such as the revocation of a permit), and an opportunity for explanation (a procedure in which the person subject to the adverse disposition submits a written explanation or documentary evidence to the government agency) must be provided for other adverse dispositions.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

Japan does not have a law that generally provides for the sanctions and remedies that the regulator may impose, and penalties are provided for in individual laws.

The various sanctions that exist can be broadly divided into (1) the direct penalty system, which directly punishes violators of obligations, and (2) the pre-sanction order system, which punishes violators who continue to violate even after receiving an improvement order or other adverse disposition. Another sanction similar to the pre-sanction order system is the pre-sanction administrative guidance system, which punishes those who continue to violate even after receiving recommendations and administrative guidance.

Penalties usually include imprisonment with work and fines as statutory penalties. An order to suspend the use of facilities necessary for the business is another type of sanction. For example, the Waste Management and Public Cleansing Act provides that if the structure or maintenance of a general waste treatment facility does not meet the technical standards stipulated by law, the prefectural governor may order the installer or manager of the facility to suspend the use of the waste treatment facility. In addition, if a licence or approval from the relevant authorities is required to conduct a business, such licence or approval may be revoked as a sanction against the offender.

If the party subject to an adverse disposition (such as an order to take action) issued by the regulatory authority fails to comply with the order, the regulatory authority may enforce compliance by way of administrative substitute execution (ie, where the regulatory authority steps in to correct the violation itself). However, the government can only take action under this system of administrative substitution if the obligor fails to comply with its obligation to take action. If the obligor does not comply with his or her obligations (eg, the obligation to suspend drainage), the government will resort to civil execution.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Pursuant to the Administrative Complaint Review Act, a person who is dissatisfied with a decision of a regulatory authority may apply for a review. In principle, the competent authority to which a request for review should be submitted is the highest authority (eg, minister, governor, mayor, etc) of the relevant administrative agency that rendered the original administrative disposition (disposition agency) although the decision of such highest authority can be subject to review in a judicial procedure. If there is no such highest authority of the disposition agency, it should be filed with the disposition agency. A person who is dissatisfied with the determination concerning a request for review may request a re-examination, if the relevant individual law contains a provision to that effect. As a simpler method, the person may apply to the disposition agency itself for re-examination and review of the disposition.

As a judicial procedure, an administrative lawsuit may be filed in accordance with the Administrative Case Litigation Act. Among the various types of administrative litigation, the most important are actions to revoke an administrative disposition, actions to declare an administrative disposition null and void, and mandamus actions. The party against whom these actions may be brought is the state or the public body to which the administrative agency that has made the original administrative disposition belongs.

Some individual laws provide that an action for revocation of administrative disposition can be brought only after a decision has been made on a complaint filed.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Environmental cases can be brought before both civil and criminal courts. There is no special court in Japan that deals exclusively with environmental law cases.

A violation of a criminal provision of an individual law is tried as a criminal case. If a resident seeks an injunction against a business operator's project or development activities, or seeks compensation for damage caused by the business operator's economic activities, the case is heard as a civil case.

There is no special court for administrative actions. They are a type of civil action and are, therefore, heard by an ordinary court.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

The violation of a criminal provision of an individual law is tried as a criminal case.

When a business operator engages in business or development activities without obtaining a licence or approval from the government, or when its business or development activities do not meet the legal standards, these incidents are generally handled within the administrative procedures.

If anyone is harmed by the business or development activities of a business operator, the victim may file a lawsuit against the operator for damages in accordance with the provisions of the Civil Code, and the court has the authority to make a judgement. In addition, an injunction lawsuit may be filed as a means of preventing the business operator from conducting or continuing its business and development activities, and the court has the authority to determine the appropriateness of the injunction. Furthermore, if environmental damage is caused by the exercise or non-exercise of the authority of the national or a local government, a claim for state compensation may be filed, and the court has the authority to make a decision on these suits for state compensation.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Civil claims for breach of environment law are possible. They can be broadly divided into claims for damages, claims for injunctive relief and petitions for preliminary injunction.

Claims for damages are usually brought under tort liability in accordance with article 709 of the Civil Code. The plaintiff can claim both property damage (damnum emergens (actual/direct damages, such as medical treatment costs) and lucrum cessans (indirect damages, such as lost profits)) and moral damage (solatium), and in principle, must prove each damage separately. The Act on Compensation for Nuclear Damage (Nuclear Damage Compensation Act) provides for strict liability without fault for damage caused by radiation or toxicity of nuclear fuel materials and the like, as typified by nuclear accidents. However, plaintiffs in many compensation lawsuits against TEPCO for the Fukushima nuclear accident following the Great East Japan Earthquake have pursued TEPCO's liability under article 709 of the Civil Code in addition to its liability under the Nuclear Damage Compensation Act. This is believed to be an attempt to clarify TEPCO's breach of its duty of care by also pursuing its tort liability under article 709 of the Civil Code, which requires proof of negligence. In addition, approximately five months after the Great East Japan Earthquake, a law was enacted to provide early relief to victims, which established a system of provisional payments from the national government to victims. Under this system, the national government makes provisional payments to victims based on the guidelines of the government's Dispute Reconciliation Committee for Nuclear Damage Compensation, and acquires the right to claim compensation from TEPCO by subrogation. Furthermore, the Nuclear Damage Compensation Facilitation Corporation was established following the Fukushima nuclear accident. The compensating party is now entitled to receive financial assistance from the Corporation for the compensation to be paid if the amount payable as compensation for a nuclear accident exceeds a certain amount.

Unlike claims for damages, injunctive actions do not have a clear legal basis. It has therefore become common practice to base injunctions on personal rights (such as the right to life and the right to body). For an injunction to be granted, the wrongful act must be found to be unlawful beyond the point of tolerance.

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If the conduct of an ordinary civil action is likely to result in increased damage and it would be impossible to obtain legal redress, a petition for a provisional disposition order may be filed under the Civil Preservation Act as a means of provisional relief pending a decision on the injunction. While injunctive actions and petitions for provisional disposition orders were filed before the Fukushima nuclear accident, injunctions were generally not granted in most court cases before the accident. After the Fukushima nuclear accident, residents won some court cases in the first instance. However, it is not uncommon for the first-instance judgement to be overturned on appeal or the proceedings for objection to the provisional disposition.

Defences and indemnities

30 | What defences or indemnities are available?

To obtain a judgement upholding a claim in an action for damages, the plaintiff (victim) must prove (1) specific intent or negligence on the part of the party at fault, (2) infringement of a right and unlawfulness, (3) the occurrence of damage and (4) the causal link between the infringement of a right by the party at fault and the damage, and the defendant (the party at fault) may defend against each of these requirements.

With regard to (1), the existence of negligence is usually disputed. Meanwhile, as special laws for the tort liability provided under article 709 of the Civil Code, the Water Pollution Prevention Act and the Air Pollution Control Act provide for strict liability without fault. To claim damages based on a tort under article 709 of the Civil Code, the victim seeking compensation must prove the foreseeability and avoidability of the consequences with regard to the negligence of the party at fault. However, under the strict liability rule, victims can obtain compensation for damages without having to prove the negligence of the party at fault if they can prove the causal link between the infringement and their health or other damage.

If the victim is also at fault, the principles of comparative negligence may apply. The violation of a right or illegality in (2) above will not be found uness the illegality exceeds a tolerable limit, and the defendant (the party at fault) can defend itself on the grounds that the tolerable limit has not been exceeded. There is also a statute of limitations for the right to claim damages based on a tort. If the victims do not exercise their rights within a certain period of time, their claims are time-barred.

Business operators can also take out environmental pollution liability insurance. This is a system under which the insured can receive insurance money if a third party suffers bodily injury or property damage as a result of environmental pollution caused by the insured's facility and a claim is made against the insured, or if the insured is required by government order or otherwise to bear the costs of cleaning up the pollution.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Under the Companies Act, directors are liable for damage caused to the company by negligence in the performance of their duties (liability to the company) and for damage caused to third parties by wilful misconduct or gross negligence in the performance of their duties

(liability to third parties). Since what is required of directors is to perform their duties with due care and diligence (article 330 of the Companies Act; article 644 of the Civil Code), directors and officers may defend themselves on the ground that they have fulfilled their duty of due care.

In determining whether directors have discharged their duty of care, if there was no carelessness in their perception of the facts and in their decision-making process under the circumstances at the time of the decision, it can be said that their business judgement was within the directors' discretion and they will be deemed not to have breached their duty of care (the 'business judgement rule'). As such, directors may be able to defend themselves on the basis of the lack of carelessness. A director also has a duty to monitor and supervise the other directors and to establish the systems necessary to ensure the proper conduct of the company's business (ie, internal control system). In these respects, directors can also defend themselves on the basis that they have fulfilled their duty of care. In a lawsuit concerning the liability of some former TEPCO directors to shareholders in relation to the Fukushima nuclear accident, the reasonableness of the former directors' business judgement was disputed. The court of first instance ruled that the former directors' judgement was extremely unreasonable, stating that they left the situation as it was without taking any tsunami countermeasures, even though there was no continuing expectation that a possible tsunami would not reach the Fukushima nuclear plant site, and thus failed to take and postponed taking any safety measures against tsunamis.

Appeal process

32 What is the appeal process from trials?

The Code of Civil Procedure provides that an appeal may be lodged in civil cases within 14 days from the day following the date of service of the judgement. An appeal may be lodged with the competent high court against the judgement of the district court of first instance, and with the Supreme Court against the judgement of the high court of second instance.

In the case of a criminal trial for violation of any criminal provision of an individual law, an appeal may be lodged within 14 days from the day following the pronouncement of the judgement of the court of first instance. An appeal may be lodged only on the grounds set out in the Code of Criminal Procedure (eg, unlawful proceedings). A party dissatisfied with the decision of the court of appeal may appeal to the Supreme Court, but the grounds for this final appeal are also limited.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

Japan is a signatory to treaties and conventions relating to environmental issues such as protection of the marine environment, transboundary movements of chemical substances and hazardous wastes, the protection of the ozone layer, biological diversity, wild fauna and

flora, forests and desertification, and climate change. Major environmental conventions to which Japan is a party include the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity, the Montreal Protocol, the Basel Convention, the Washington Convention and the Ramsar Convention.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

Under the Japanese Constitution, treaties have domestic legal force once they are promulgated. However, there are several ways to ensure that the rights and obligations under the treaties are implemented domestically, including responding with the existing Japanese laws, amending or repealing existing laws that are inconsistent with the treaties, and enacting new laws.

For example, to implement the Basel Convention domestically, the Waste Management and Public Cleansing Act, an existing law, was partially amended and the Act on the Control of Export, Import and Others of Specified Hazardous Wastes and Other Wastes (Basel Act) was newly enacted.

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

In April 2022, in view of the growing importance of further promoting the recycling of plastic resources in Japan in recent years, the Act on the Promotion of Resource Circulation for Plastics was enacted. Based on this Act, a set of decision criteria has been developed for business operators that produce plastic products and those that generate plastic product waste to work towards achieving this goal.

In May 2023, the Ministry of the Environment published an environmental due diligence handbook entitled the 'Introductory Guide on Environmental Due Diligence along the Value Chains: Environmental Due Diligence Practices Utilizing Environmental Management System (EMS)'. Following the publication in 2020 of the 'Introductory Guide on Environmental Due Diligence along the Value Chains: Referencing the OECD Guidance' (available in Japanese only) with the aim of promoting environmental DD efforts by business operators in Japan while introducing the process described in the 'OECD Due Diligence Guidance for Responsible Business Conduct' (OECD Guidance), the Ministry of the Environment conducted ongoing interviews with companies and determined that it would be useful to organise information on how to develop an environmental management system and implement the DD process required by the OECD Guidance, leading to the publication of the above-mentioned handbook. The handbook clearly states that environmental DD should be carried out to identify, prevent and mitigate not only the negative environmental impacts caused by each company's activities, but also those that may occur throughout the value chain.

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Malta

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

Malta has a substantial body of environmental law, which is regulated primarily by the Environment Protection Act (EPA) (Chapter 549 of the Laws of Malta). The various aspects of environmental law are then regulated by the Act's subsidiary legislation. Key regulations include:

- Environmental Impact Assessment Regulations (SL549.46);
- Prevention and Remedying of Environmental Damage Regulations (SL549.97);
- Waste Regulations (SL549.63);
- Water Policy Framework Regulations (SL549.100); and
- Flora, Fauna and Natural Habitats Protection Regulations (SL549.44).

Environmental law is heavily influenced by EU law and policy.

Integrated pollution prevention and control

2 Is there a system of integrated control of pollution?

Malta has a system of integrated pollution prevention and control established primarily through the Industrial Emissions (Integrated Pollution Prevention and Control (IPPC)) Regulations (SL549.77), which aim to prevent, reduce and control pollution from various point sources and set out principles for the permitting and control of activities of industrial installations, based on an integrated approach and the best available techniques (BAT).

In terms of the Regulations, installations that release emissions to land, water and air are subject to a prior review by the competent authority and must obtain a permit fin order to operate. These regulated facilities include stationary installations in which the following activities are carried out: energy, waste management, production and processing of metals, chemicals and minerals, paper productions and slaughterhouses, among others.

To obtain a permit under the IPPC regime, industrial activities will need to comply with BAT. The permit would generally contain, among other details, a description of the installation, materials and energy used and generated, the sources and nature of foreseeable emissions

as well as the measures planned to monitor such emissions. It additionally establishes emission limit values for polluting substances and imposes monitoring obligations on the operator, who must provide certain data to the authority, at regular intervals, enabling it to check the operator's compliance with emission levels and other permit conditions. Permit conditions are set on the basis of BATs, ensuring that the installation is operated in accordance with the most advanced and proven techniques for the prevention and control of industrial emissions and the wider environmental impact.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Whilst there is no specific regulation governing soil pollution, this is managed through various avenues, including the environmental impact assessment regime, and environmental permitting. With respect to liability for soil pollution, this is covered by the Prevention and Remedying of Environmental Damage Regulations (SL549.97), which address all types of environmental damage, including damage to land, and the Crimes Against the Environment Act (Chapter 522 of the laws of Malta) under which it is an offence to discharge or introduce harmful substances into the soil which are likely to cause substantial damage to the quality of the soil.

Regulation of waste

4 | What types of waste are regulated and how?

Waste is primarily governed by the EPA, the Waste Regulations (SL549.63) and the Waste Management (Activity Registration) Regulations (SL549.45). Additional regulations are also in place to manage to specific areas of waste management in Malta.

Waste is defined, broadly, under the EPA as 'any thing, substance or object which the holder discards or intends to discard, or is required to keep in order to discard…', and requires the competent authorities to ensure that waste is managed in a sustainable manner and that its reduction, proper use, reuse and recovery is promoted. Waste is also defined in the Waste Regulations as 'any substance or object which the holder discards or intends or is required to discard'.

The Waste Regulations qualify the definition in that by-products, which are substances or objects resulting from production processes, are not regarded as waste, as long as the following conditions are met:

- further use of the substance or object is certain;
- the substance or object can be used directly without any further processing other than normal industrial practice;
- the substance or object is produced as an integral part of a production process; and
- further use is lawful, in other words, the substance or object fulfils all relevant product, environment and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

Classification of waste in Malta is largely based on whether it contains hazardous properties that are listed in the Waste Framework Directive (2008/98/EC) and that establishes a code for each type of waste. Hazardous wastes are subject to a strict control regime covering their entire life cycle, from generation to final disposal or recovery. The Waste Regulations include specific obligations concerning labeling and packaging of hazardous waste, record keeping as well as monitoring and control procedures on transfers of such waste within Malta.

The bulk of waste legislation concerns waste management. Under the Waste Regulations (SL549.63) permits from the competent authority are required by any person wishing to carry out any waste management activity, and in some cases by producers of waste intending to store or dispose of, on site, the waste it produces.

The various waste streams have specific legal regimes. For instance, packaging waste is dealt with in the Waste Management (Packaging and Packaging Waste) Regulations (SL549.43), which oblige producers of packaging waste to collect, recover and recycle such waste. Regimes are also in place to manage waste electrical and electronic equipment, waste batteries, construction and demolition waste, end-of-life vehicles and bio-waste.

Waste legislation and policy imposes a general requirement to comply with the waste hierarchy, which is:

- prevention;
- preparing for re-use;
- recycling;
- other recovery; and
- disposal.

The Waste Regulations impose a duty of care on any person producing and/or handling waste (with the exception of domestic waste), to ensure that no waste escapes such person's control and that waste is manages by persons in possession of the relevant permits.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Air emissions are governed primarily by the Industrial Emissions (IPPC) Regulations and the Ambient Air Quality Regulations (SL549.59). The latter impose certain obligations on the competent authority with respect to implementation, monitoring and control. More specifically, the authority must, among other things, establish limit values and alert thresholds for ambient air, carry out assessments of ambient air quality, and implement measures in zones where levels are higher than the limit value.

Air discharges from regulated industrial activities are managed and controlled through the IPPC Regulations, which impose an obligation on operators of these installations to obtain a permit and to operate the installation in accordance with best available techniques.

The Air Quality Plan for the Maltese Islands 2010 contains high level policy guidance for reducing the daily average of PM_{10} concentrations in ambient air, by focusing on measures to reduce these concentrations from major contributors, such as road transport.

Protection of fresh water and seawater

6 How are fresh water and seawater, and their associated land, protected?

Fresh water is protected under the Protection of Groundwater against Pollution and Deterioration Regulations (SL549.53) and the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations (SL549.10). These Regulations are both preventative and remedial in nature and essentially tackle pollution of groundwater from point as well as diffuse sources as they regulate direct and indirect discharges. Additionally, pollution caused to groundwater by nitrates from agricultural sources is also regulated under Maltese law. Contamination of fresh water sources by any person will give rise to criminal liability.

Extraction, whether for private or public use, is subject to strict controls and permitting requirements by the competent authority. The filling of pools is also regulated and must be done with fresh water to avoid harmful leakage of seawater into the groundwater.

The Water Policy Framework Regulations (SL549.100) establish an action plan for protecting inland waters, coastal waters and groundwater. These regulations attempt to adopt a holistic approach with respect to the entire field of water management. Essentially, the aim is to promote sustainable water use based on the long-term protection of available water resources; and to enhance the protection and improvement of the aquatic environment, through specific measures for the progressive reduction and phasing out of discharges, emissions and losses of hazardous substances.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Over 20 per cent of Malta's land area has protection status under the EU's Birds and Habitats Directives. Moreover, several sites have been designated as special areas of conservation under the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44) and as special protection areas under the Conservation of Wild Birds Regulations (SL 549.42). Among these protected sites are the woodlands in Buskett and Comino, which have also been designated by the European Commission as sites of Community importance. These protected areas form part of the coherent European ecological network of special areas of conservation established under Natura 2000. Generally, within these protected areas, no operations or activities may be carried out unless consent has been given by the competent authority; and before granting such consent, the Authority will, where it appears that such activity is likely to have a significant effect on the protected site, carry out, or require the applicant to carry out, an environmental assessment of the implications of the activity on the site.

Additionally, the Environment and Resources Authority (ERA) is empowered, under the EPA, to issue conservation orders to protect areas which are deemed important from a landscape perspective. Once an area is 'protected' for conservation, the ERA may take such measures as it deems necessary to protect the status of the area and prevent any deterioration thereof.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

The overall protection of species is governed by the Flora, Fauna and Natural Habitats Protection Regulations (SL549.44). The Regulations prohibit persons from, among other things, disturbing, capturing, killing, destroying, transporting and selling protected species without first obtaining a permit. They also contemplate measures to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest, taking account of the economic, social and cultural requirements and regional and local characteristics. Moreover, the Regulations impose obligations on the competent authority in terms of developing national strategies and other action plans and programmes aimed at the conservation and sustainable use of biodiversity.

The Schedules to the Regulations identify the habitats and species which are given protection status, specifying the level of protection. Natural habitats whose conservation requires protection are designated as Special Areas of Conservation, and this includes areas of both national and international importance. Similarly, species of animals and plants of both Community and national interest are also designated as Special Areas of Conservation. The Regulations also identify animal and plant species of Community and national interest that are in need of strict protection.

Other legislation governing the protection of flora and fauna include the Conservation of Wild Birds Regulations (SL549.42), the Trade in Species of Fauna and Flora Regulations (SL549.38) and the Trees and Woodlands Protection Regulations (SL549.64). In addition, there are various other pieces of legislation under Maltese law regulating the protection of a specific species or a defined protected area.

In the marine environment, flora and fauna are afforded protection under additional legislation, including the Marine Mammals Protection Regulations (SL549.35) and the Marine Policy Framework Regulations (SL549.35), which require Malta to take the necessary measures to achieve and maintain a 'good environmental status' in the marine environment.

Additionally, Malta's marine Natura 2000 network encompasses 18 sites and covers over 4100 km^2, equivalent to more than 35 per cent of Malta's Fisheries Management Zone, and was established over a period of 10 years, for the conservation of important habitats and species. The network comprises Special Areas of Conservation, designated for the protection of marine habitats and species pursuant to the EU Habitats Directive, and Special Protected Areas designated for the protection of seabirds under the EU Birds Directive. In 2018, the network was extended, leading to a further three inshore and five offshore areas being proposed for the protection of cave and reef habitats.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Environmental noise is mainly regulated under the Assessment and Management of Environmental Noise Regulations (SL549.37) which define environmental noise as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic and air traffic, and from sites of industrial activity. The Regulations aim to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. To this end, the Regulations seek to:

- determine the exposure to environmental noise through noise mapping;
- ensure that information on environmental noise and its effects are made available to the public; and
- adopt action plans based upon noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and preserving environmental noise quality where it is good.

Implementation of the regulations is the responsibility of the ERA.

Vibrations are, in effect, regulated under the Industrial Emissions (Framework) Regulations (SL549.76) and are included in the definitions of 'pollution' and 'emissions'; and odours are controlled by the competent authorities through general permitting requirements including trading licences and environmental permits.

Liability for damage to the environment

10 Is there a general regime on liability for environmental damage?

Liability for environmental damage may be imposed through various regimes. Liability may civil, administrative or criminal. Generally, in terms of the EPA, it is an offence to carry out any activity or operation affecting the environment without a permit. Likewise, failure to comply with the conditions of a permit is also an offence. However, in cases of breach, the competent authority may choose to take administrative action such as the issuance fines and enforcement notices.

Administrative liability is mainly governed by the Prevention and Remedying of Environmental Damage Regulations (SL549.97), which establish a framework of environmental liability based on the polluter pays principle, to prevent and remedy environmental damage. Environmental damage is defined as damage to protected species and natural habitats, damage to water and damage to land.

The Regulations impose strict liability on operators for environmental damage resulting from any of the occupational activities listed in Schedule III. Operators carrying out other occupational activities than those listed in Schedule III are liable for fault-based damage to protected species or natural habitats. However, establishing a causal link between the

activity and the damage is always required. The Regulations impose the following obligations on operators responsible for the damage (or immediate threat thereof):

- prevention in case of an imminent threat of damage;
- immediate limitation measures; and
- remediation measures, including primary, complementary and compensatory remediation.

The Crimes Against the Environment Act imposes criminal liability on persons carrying out activities that breach specific environmental legislation. The Act criminalises activities that cause significant harm or risk to the environment and human health, including:

- the illegal emission or discharge of substances into air, water or soil;
- the illegal trade in wildlife;
- the illegal trade in ozone-depleting substances; and
- the illegal shipment or dumping of waste.

General principles of civil law may also be relied upon in instances of environmental damage. Persons may be held liable in tort for damages caused towards a third party who actually suffers a related loss. Under the Maltese legal system, compensation can be sought for material (or real) damage or loss, including loss of future profits, by the person who suffers the harm.

Environmental taxes

11 | Is there any type of environmental tax?

Malta has introduced a number of fiscal instruments, mainly environmental taxes, to discourage the use of environmentally damaging activities such as the burning of fossil fuels, while promoting other alternative and more efficient energy sources. Overall, these taxes can be grouped into three categories: energy, transportation, and pollution and resources. In terms of energy, the taxes comprise:

- carbon taxes and taxes on energy products for transportation such as diesel and petrol;
- taxes on energy products for stationary use (coal, oil products, electricity, natural gas); and
- taxes on greenhouse gases.

With respect to transport, taxes comprise road usage tax and taxes on the import, sale and registration of motor vehicles. Policies allowing favourable tax rates for lower emission levels have been implemented. The rate of registration tax levied varies depending on the carbon dioxide emission value and age of the vehicle, among other contributing factors. The Annual Circulation Tax also takes into account the age of the vehicle and specifications such as vehicle weight or engine capacity, depending on the type of vehicle in consideration.

To incentivise cleaner modes of transport, tax rebates exist for purchases of bicycles and electronic bicycles. Additionally, plug-in hybrid vehicles with an electric range of not less than 50km will be exempt from the payment of registration tax. The annual circulation licence fee shall remain free of charge for the first five years for the same category of vehicles.

Environmental reporting

12 Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Sectors of industry covered by the Emissions Trading System (ETS) are subject to reporting obligations. Under the ETS regime, installation and aircraft operators must submit a monitoring plan describing the measures by which annual emissions from the installation will be monitored and reported. The monitoring plan must be approved by the national competent authority and will serve as the accepted methodology for monitoring in that installation. On an annual basis, the operator of the installation must submit verified emissions reports to the competent authority. The reports must first be verified by a competent, independent accredited verifier before being submitted to the competent authority. A verification report issued by the verifier must accompany the emissions report when this is submitted to the authority.

ESG reporting is not yet a regulatory requirement under Maltese law. However, this will change with the adoption of the Corporate Sustainability Reporting Directive (CSRD) by the EU, which will apply to all member states, including Malta. The CSRD will come into effect in the 2023 financial year for large companies, while SMEs will have until the 2026 financial year to comply.

The EU Commission will set in place compulsory reporting requirements for large companies, of which there are approximately 50,000 in Europe. A large company is defined as fulfilling two of these three criteria: €40 million in net turnover, €20 million in assets or 250 or more employees. Separate, proportionate standards will be introduced for listed SMEs, which will have to report in a like manner.

It must be noted, however, that at present, there is a non-financial reporting obligation on large public-interest companies with more than 500 employees. This obligation stems from the Non-Financial Reporting Directive (Directive 2014/95/EU), which was transposed into Maltese law through an amendment to the Maltese Companies Act (Chapter 386 of the laws of Malta).

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

National environmental policy covers all environmental sectors and natural resources, including air, waste, water, land, soil, climate, biodiversity, coastal and marine areas, noise, chemicals and mineral resources. It covers, but is not restricted to, obligations stemming from the European Union environment acquis. The Environment and Resources Authority has formulated and implemented several policies and action plans to serve as a framework to guide environmental protection initiatives and to support the various legislation.

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HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

The primary legislation governing hazardous activities is the Control of Major Accident Hazards Regulations (SL424.19), which implements Directive 2012/18/EU (COMAH). The COMAH regime regulates the use of dangerous substances rather than specific activities, and primarily aims to regulate those sites that store, produce or make use of dangerous substances in sufficient quantities and that could constitute a serious health, safety or environmental risk. It predominantly applies to chemical and petro-chemical-related activities, and fuel storage and distribution.

There are no licensing requirements for operators carrying out activities covered by these Regulations; however, operators are required to notify the competent authority of the activities carried out in the establishment, specifying the dangerous substances present and the quantities of each substance. Operators are also required to describe the immediate environment of the establishment and factors likely to cause a major accident or to aggravate the consequences thereof including, where available, details of neighbouring establishments.

Management of hazardous waste, as well as the transport of hazardous substances, are governed by specific regimes.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

With regard to hazardous products and substances, regulations are aimed at protecting the environment and creating common standards to protect consumers, ensuring the free circulation of goods among member states without damage being caused to the environment or human health. In fact, the Dangerous Substance Regulations (SL427.14) were issued under the Product Safety Act (Chapter 427). The Regulations define substances as chemical elements and their compounds in the natural state or obtained by any production process. Furthermore, the Regulations list a number of substances which are considered to be 'dangerous', such as explosive and extremely and highly flammable substances and preparations. The main obligations on the importer and producer under these Regulations relate to labelling and packaging.

Maltese legislation concerning hazardous products and packages is mainly made up of EU Regulations, namely Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (as amended by Commission Regulation (EU) 2018/1480 for the purpose of its adaptation to technical and scientific progress); and Regulation (EC) No. 1907/2006 on the registration, evaluation, authorisation and restriction of chemicals (REACH). The latter is designed to ensure a high level of protection of human health and the environment from risks that can be posed by chemicals. REACH makes the industry responsible for assessing and managing the risks posed by chemicals and providing appropriate safety information to their users.

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Other potentially dangerous and hazardous substances, such as pesticides, explosives and fertilisers, are regulated under Maltese law by substance-specific legislation.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

Health and Safety legislation sets out general duties on employers to safeguard the heath and safety of employees in the workplace. Among other duties, employers are required to assess and review work-related risks faced by employees, and put in place preventive and protective measures. Additional health and safety regimes exist for specific activities such as underground mineral extraction and construction activity.

The COMAH regime also applies to prevent major accidents in the workplace. Operators of upper-tier establishments are required to prepare safety reports, establish safety management systems and an emergency plans. The competent authorities also have various obligations directly related to COMAH establishments, such as inspections of the installation and review of the safety report or major accident prevention policy, and obligations relating to emergency planning and land use planning.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

The main environmental aspect in M&A transactions would be environmental liability. Where a company acquires shares in another company that would have committed an environmental wrongdoing prior to the acquisition, the acquiring company (as shareholder) would not, except in very limited circumstances, be liable unless it had also participated in such wrongdoing. The purchaser of the shares does not itself take on the environmental liability of the company.

Consideration should also be had to permitting issues. In a case where a company operates under an environmental permit that risks being revoked by the competent authority due to non-compliance with environmental regulations, shareholders may not want to acquire shares in such company. For this reason, investigations and due diligence exercises should always be carried out to ensure that any environmental-related issues are disclosed prior to the acquisition.

Environmental aspects in other transactions

18 What are the main environmental aspects to consider in other transactions?

In real estate transactions, issues of possible soil pollution and other environmental considerations would certainly be of interest to a new owner because, although such owner would not be held liable for environmental damage caused prior to the acquisition, the competent

authorities could nevertheless, in certain cases, impound the property. In transactions regarding financing, environmental due diligence will in general be similar to that of an M&A transaction.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

The Public Procurement Regulations (SL 601.03) do not formulate any absolute environmental criteria. They do, however, provide that the conditions governing the performance of a contract may concern environmental considerations. The Regulations further provide that contracting authorities are to establish technical specifications for public contracts, such specifications may include environmental characteristics. When laying down such environmental characteristics in terms of performance or functional requirements, contracting authorities may use the detailed specifications or parts thereof as defined by European, national or multi-national eco-labels or any other eco-label. The contracting authority may be required by the Director of Contracts to provide information to the tenderer or candidate as to its obligations, including those relating to environmental protection that shall be applicable to the works or services executed during the performance of the contract.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

The main types of environmental assessment insofar as developments and projects are concerned are the environmental impact assessment (EIA) and the appropriate assessment (AA). These assessments are not licences in themselves, but they do form part of the development permitting process.

The Environmental Impact Assessment Regulations (SL549.46) cover large-scale projects (or activities) likely to have significant impact on the environment. These activities are listed in Schedule I of the Regulations and include construction of roads and motorways, airports, power plants and wastewater treatment plants, among others. Projects of a smaller scale may be subject to an AA if the site of the development falls within, or is relatively close to, a Natura 2000 or other protected site or area, and is likely to have an adverse effect on the protected site.

Additionally, governmental plans and programmes that are likely to have a significant effect on the environment are subject to a Strategic Environmental Assessment (SEA) in accordance with the Strategic Environmental Assessment Regulations (SL549.61).

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

Before consent is granted for a development, a screening process must take place to determine whether the development qualifies for mandatory assessments, such as the AA and the EIA. If an AA is required, the case is processed in accordance with the Flora, Fauna and Natural Habitats Protection Regulations (SL549.44), and if an EIA is required, in accordance with the EIA Regulations (SL549.46). It is important to note that these two assessments are not exclusive of each other and in some cases both may be required.

An AA is required where the proposed development is not directly connected with or necessary to the management of the protected site, and where it appears to the ERA that such activity is likely to have a significant effect on the protected site. The information gathered for this assessment will enable the Authority to make an informed decision as to whether or not to grant development consent. Developments which are relatively complex will usually require detailed assessments. However, it is possible that even with detailed assessments the impacts remain unclear and therefore cannot be excluded. In this case, a full-blown study, similar to an EIA, would be required. With regard to the actual content of the AA, this would depend very much on the complexity and nature of the activities to be carried out and the location or site of the activities. At the very least, the assessment would have to include a description of the project and the land and marine environments affected by the activities, the elements of the project which are likely to have environmental impacts, the potential impacts on the habitats and or species listed in the Schedules to SL549.44 and mitigation measures. Once the relevant information has been gathered and the report is submitted to the ERA, the adverse effects on the integrity of the site have to be assessed by the Authority. If the impact is considered insignificant or likely to be significant or unclear but can be rendered insignificant through mitigation measures, the proposed activity can proceed. If, on the other hand, the mitigation measures are insufficient such that significant impacts would remain, then the proposal may be refused.

With regard to EIAs, all developments listed in Schedule I of the EIA Regulations require either a full EIA or screening in accordance with Schedule III by the ERA, depending on whether they fall within Category I or II. Developments not listed in the Schedule would not require an EIA or screening unless in the opinion of the ERA they are likely to have significant impacts on the environment.

Where the ERA indicates that a project or development falls within Schedule I, the permit application must be accompanied by a Project Description Statement (PDS) in accordance with Schedule II. This provides the ERA with the necessary information to conduct a screening of the proposed development (not falling in Category I – as the latter automatically require a full EIA) and to decide whether an EIA is required. The decision is communicated to the applicant within 30 calendar days and is made available to the public. Following screening, if a proposed development requires an EIA, project-specific Terms of Reference (TOR) are formulated by the ERA following a 30-day consultation period with government agencies, NGOs, affected local councils and the public. These TORs will determine the content of the EIA Report. An EIA coordinator and independent consultants are then appointed by the developer to conduct the studies required and to assess the likely impacts of the environmental parameters established in the TORs. The EIA findings are compiled into an EIA

report. Once the report is complete, the developer must publish a notice in local newspapers, informing the public that an EIA report has been submitted to the ERA and is available for public consultation. A digital copy of the report is made available on the ERA's website for a 30-day consultation period. Concurrently, consultation is undertaken with government entities, local councils and NGOs. For Category I projects (those automatically requiring a full EIA), a public hearing is organised at the cost of the developer within or after the consultation period. All comments, queries and requests made during the consultation period and public hearing are referred to the EIA coordinator for a reply, and the EIA report may be revised accordingly. The ERA will examine the final EIA report and prepare its final assessment thereon, which will have a bearing on the decision on whether to approve the development permit or not. Should it be approved, then specific conditions and post-permit monitoring will apply.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Environment and Resources Authority (ERA) is the main body responsible for ensuring compliance with environmental legislation. The ERA's primary functions are to:

- formulate and implement policies relating to the protection and management of the environment, and the sustainable management of natural resources;
- permit, assess, investigate, audit, monitor and take action on any activity, intervention, project, operation or land use that may have an effect on the environment; and
- carry out, review or request others to carry out environmental assessments, environmental audits and environmental monitoring of activities and works having an impact on the environment.

The ERA has the power to revoke or modify any authorisation or permit granted where environmental damage or risk is concerned. Additionally, the ERA has the power to carry out investigations and inspections. The ERA may issue stop notices and compliance orders and may impose administrative fines.

Investigation

23 What are the typical steps in an investigation?

Regulatory authorities may monitor and investigate any issues and complaints brought to their attention. In certain cases, the relevant regulator or competent authority will have the power to take any action that it may deem necessary and enforce it in accordance with relevant laws. When an investigation is being carried out, apart from assessing the complaint and the facts of the case, the authorities may also carry out on-site inspections, collect documentation and evidence, carry out inquiries and invite any interested parties to make any submissions. Interim measures may also be evoked to safeguard rights.

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Administrative decisions

24 | What is the procedure for making administrative decisions?

Generally, when an administrative decision is to be made, consultation, oral or written, will occur, after which parties are invited to make submissions. The procedures for making such decisions are usually subject to any relevant policies and guidelines that may be issued by authorities.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

Violations may amount to offences, rendering the offender criminally liable. In such cases, offenders may face imprisonment, revocation of a licence or permit, or a fine. Administrative penalties may also be imposed, as well as warnings or substantial fines, as the situation may be. The range of sanctions and remedies for environmental breaches is broad and includes:

- suspensions or revocation of permits or modification of permit conditions ;
- enforcement and stop notices, and compliance orders;
- financial guarantees to secure remediation in case of environmental damage or loss; and
- step in powers for competent authorities to carry out remedial works.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Decisions of public authorities are generally subject to appeal. Decisions as to environment assessments, access to environmental information and the prevention and remedying of environmental damage taken by the ERA, for instance, may be appealed before the Environment and Planning Review Tribunal. From such decisions, further, albeit limited, recourse may be had to the Court of Appeal (Inferior Jurisdiction). It is also possible to have an administrative action reviewed judicially when claimed to be ultra vires.

Recourse may also be had to the ombudsman, which, however, may only result in a recommendation in one's favour.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Court proceedings concerning environmental law matters may be civil, administrative or criminal, depending on the nature and type of claim. Proceedings must be brought within prescribed time-frames.

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Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

At the request of an appellant, which must be made simultaneously with the appeal application, the Environment and Planning Review Tribunal (Tribunal) may suspend any development from being carried out pending its decision. Such suspension will be made under terms, conditions and any other measures the Tribunal may deem fit.

The court, in criminal proceedings, is empowered to order imprisonment or may impose fines and penalties. In civil proceedings, it may award damages or order that any wrongful action be remedied.

Civil claims

29 Are civil claims allowed regarding infringements of environmental law?

Non-contractual claims would generally be brought under the basic principles of tort found in the Civil Code, while contractual claims could be brought on the basis of breach of contract.

Defences and indemnities

30 What defences or indemnities are available?

The general principle at law is that the person liable for any wrongdoing must answer to any damage caused up to that degree. Therefore, all defences provided generally by law shall apply. The statute of limitations in the Civil Code can be used as a defence to an action for damages suffered due to a wrongful act carried out in relation to the environment. Such a claim would be time-barred after a period of two years, which starts to run from the time the wrongful act is committed. In certain cases, set out in the Civil Code, several and joint liability applies, for instance, where two or more persons, acting maliciously, have caused environmental damage.

Defences are also available under the Prevention and Remedying of Environmental Damage Regulations. An Operator shall not be held financially liable if he or she proves that the damage was caused by a third party (provided appropriate safety measures were in place), or if he or she proves that the damage resulted from compliance with an order or instruction from a public authority. In addition, the following defences may be invoked in cases where environmental damage results from an event where the operator acted fully in accordance with the conditions of the authorisation; or one that was not considered likely to cause environmental damage according to the state of scientific and technical knowledge at the time the activity took place.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

In cases of civil liability for damage committed by a company or corporate entity, the director or any other officer of the company cannot be held responsible for such damage.

In terms of criminal liability, directors and similar officers may be held personally liable for the offence. However, in such cases, a defence is that the offence was carried out without the director's or officer's knowledge, and that all due diligence had been exercised to prevent the commission of the offence.

Appeal process

32 | What is the appeal process from trials?

Civil actions and criminal offences can be appealed before the relevant court of appeal. The decision of the latter would be final. Where there is a claim for a breach of a constitutional right, the court may refer the matter to the civil court, having constitutional jurisdiction, to be decided. An appeal from this decision may be brought before the constitutional court.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

Malta is a signatory to various international environmental treaties, primarily UN conventions, both directly and via the EU. Among the most notable are:

- the International Convention on Civil Liability for Oil Pollution Damage;
- the UN Convention on the Law of the Sea;
- the Convention on the Prevention of Marine Pollution by Dumping of Wastes at Sea and other Matter;
- the Geneva Convention on Long-Range Transboundary Air Pollution;
- the Basel Convention for the Transboundary Movement of Hazardous Wastes and their Disposal;
- the Vienna Convention on the Protection of the Ozone Layer; and
- the Aarhus Convention on Access to Information and Access to Justice in Environmental Matters.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

These conventions influence both Maltese law and policy, so much so that, when ratified, such international treaties or conventions become part of Maltese law.

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UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

Environmental law continues to change and evolve as new regulations and policies are adopted and subsequently implemented. At present, the Environment and Resources Authority is formulating the National Strategy for the Environment 2050 (NSE), which seeks to create an overarching framework for Malta's existing environmental strategies and plans. The NSE is built on eight key pillars, referred to as strategic goals. These address traditional environmental facets complemented with pillars that focus on key environmental challenges that Malta faces, while also laying down the road map to enable and empower changes necessary to support the required green transition.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

The bedrock of environmental protection in Taiwan is the Basic Environment Act (BEA). Specifically, article 3 of the BEA provides that environmental protection must be taken into account in the economic, technological and social development so as to safeguard the long-term national interests; and where economic, technological or social development has a seriously negative impact on the environment or would likely endanger the environment, the protection of the environment must prevail.

Integrated pollution prevention and control

2 Is there a system of integrated control of pollution?

Under Taiwan law, each type of pollution is regulated by a different set of regulations.

The Environmental Protection Agency (EPA) established an online platform Pollutant Release and Transfer Register Online System pursuant to the Freedom of Government Information Act. This platform contains the registration submitted by enterprises regarding air pollution, water pollution, waste, and toxic and concerned chemical substances used or generated during the course of their business activities. Relevant records of punishment or administrative fines imposed against non-compliance are also available on this platform.

Soil pollution

3 What are the main characteristics of the rules applicable to soil pollution?

Soil pollution (together with associated groundwater pollution) is governed by the Soil and Groundwater Pollution Remediation Act (SGPRA). Under SGPRA, an event of soil pollution broadly covers the change of soil quality due to the intervention of a substance, organism or energy, which may affect the soil's normal use or endanger the health and living environment of the people.

A soil pollution offender, including the person causing soil pollution or accumulating pollutants to cause soil pollution, should be liable to the interested party of the polluted land, land

user, manager or landowner for the damages arising from the soil pollution. Further, a soil pollution offender should be responsible for carrying out necessary measures to remedy the soil pollution, such as cleaning up the pollutant, suspension of business and providing alternative clean water. In the event that the soil pollution offender is a corporate organisation, the controlling shareholder or the responsible person in the offending company may be subject to certain liabilities under the SGPRA.

Certain liabilities may be attached to owners, administrators or users of the polluted land even though they are not the actual offender and even if the contamination takes place before their purchase or use of the land. Therefore, any successor owners or operators of a piece of polluted land would be obligated to prevent deterioration of the contamination, comply with restrictive measures imposed by the competent authorities, and may need to bear the relevant control or remediation costs if they breached the duty of care as required under the SGPRA. The owners, administrators and users of the polluted land, however, may turn to the actual soil pollution offenders and claim the cost arising from fulfilling the aforesaid obligations.

Regulation of waste

4 | What types of waste are regulated and how?

Waste is generally regulated under the Waste Disposal Act (WDA). Under the WDA, waste is divided into two major categories: general waste and industrial waste; and industrial waste is further divided into two sub-categories: general industrial waste and hazardous industrial waste.

The government is responsible for the collection and disposal of general waste, which may be carried out by the government agencies themselves or outsourced to private service providers. However, disposal of industrial waste should be performed by the enterprises. Enterprises are also required to submit an industrial waste clearance plan (specifying the amount of industrial waste generated, disposal methods, etc) to the local government periodically for monitoring and record purposes.

In addition to the WDA, the Resource Recycling Act was enacted to specifically regulate the use of recycled resources and measures in relation to the reduction of waste generation, conservation of natural resources, and recycling and reuse promotion.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

The main regulation governing air emissions in Taiwan is the Air Pollution Control Act (APCA). Under the APCA, air pollution sources are categorised into two types: stationary pollution sources and mobile pollution sources (basically refers to automobiles). The EPA set emission standards to regulate stationary and mobile pollution sources, which stipulate the maximum emission volume for each type of the relevant air pollutants. The EPA also collects air pollution control fees from both the owners of the stationary pollution sources and sellers and users of the mobile pollution sources.

In respect of the licensing requirements, according to the APCA and the Stationary Pollution Source Installation, Operating and Fuel Use Permit Management Regulations, prior to the establishment and change (eg, factory expansion) of a stationary source, the owner should submit an air pollution control plan and apply for an installation permit. After obtaining the installation permit, the owner should further apply for an operating permit to operate the stationary pollution source. The EPA promulgated detailed requirements for applications for these two permits.

There are other regulations governing energy efficiency and air emissions. For instance, the Fuel Economy Standards and Regulations on Vehicle Inspection and Administration regulates automobile fuel efficiency and tailpipe emissions. The Energy Saving Design Standards for New Buildings sets forth the requirements of energy-saving design of central air conditioning system for new buildings.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Water quality is regulated under the Water Pollution Control Act (WPCA). The competent authorities have promulgated standards for water quality based on different types of water (eg, Drinking Water Quality Standards and Tap Water Quality Standards). Under the WPCA, water pollution broadly includes water quality-related incidents due to the intervention of water by the substances, biological organisms or forms of energy, the water's quality is altered and therefore affects its normal use or endangers public health and the living environment.

Under WPCA, the competent authorities may collect water pollution control fees from enterprises and sewage systems (exclusive of public sewage systems and community sewage systems) that discharge wastewater or sewage into surface water based on the quality and volume of the discharged water. In addition, for the purpose of water quality control, any enterprise, prior to its establishment, should submit a water pollution control measure plan to the competent authority for review and approval. Those enterprises that discharge wastewater or sewage into surface water will additionally be required to obtain a discharge permit for such discharge.

With regard to seawater protection, the Marine Pollution Control Act (MPCA) governs conduct relating to seawater pollution. The EPA further promulgated the Classification of Marine Environment and Standards for Marine Environment Quality to implement the MPCA.

The MPCA was last amended on 31 May 2023, under which marine pollution prevention fees will be collected by the EPA from designated operators and the amount of fines for causing severe marine pollution has been increased up to NT$100 million.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Natural spaces and landscape protections are underpinned by the Cultural Heritage Preservation Act (CHPA), National Parks Act, Forestry Act and the Regulations Governing the Management of Designated Scenic Areas.

According to the CHPA, cultural assets, including natural spaces and landscapes being defined as natural zones, special landscapes, geologic phenomena, plants or minerals, should be protected. The competent authority (ie, the Ministry of Culture) may classify natural landscapes as natural reserves and geo-parks based on the landscape's features.

Within the protected area prescribed under the regulations above, certain restrictions are imposed on the individual and development activities. If any person violates these restrictions, criminal penalties or administrative fines may be imposed.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

Currently, there is no specific regulation governing the protection of flora species. However, the Plant Variety and Plant Seed Act was enacted to protect the plant variety right and promote variety improvement.

The Wildlife Conservation Act (WCA) was enacted to ensure wildlife conservation, biodiversity protection and most importantly the balance of ecosystems. Article 8 of the WCA specifically provides that any development, construction or land use activity must not damage the original function of the ecosystem and must be conducted in the way with the least impact on the respective area. Article 8 also provides that prior approval must be obtained to conduct any development activity in an important wildlife habitat delineated by the competent authority.

Currently, there is no specific regulation governing the protection of flora species. However, the Plant Variety and Plant Seed Act (PVPSA) was enacted to protect the plant variety right and promote variety improvement. An amendment to the PVPSA was passed on 17 May 2023, which, to protect Taiwan's plant seeds from illegal exportation, authorises the Council of Agriculture to prohibit import and export of designated plant seeds, harvested products or directly processed products. A violator of said prohibition may be subject to the criminal penalties and administrative fines.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

The Noise Control Act (NCA) provides for the regime for noise control and regulation. Under the NCA, noise generally refers to sounds exceeding certain standards. The EPA may, authorised by the NCA, designate noise control zones to regulate noise. Within the

designated area and regulated time, certain activities (such as the ignition of fireworks) are forbidden and a noise standard would apply.

The NCA also requires that any construction that is prone to making noise must be subject to prior approval before commencement. Failure to obtain prior approval would trigger administrative penalties, such as fines or suspension of construction, or both.

The NCA also stipulates several types of measures and restrictions in respect of noise made by different types of transportation. Currently, there is no specific regulation that governs odours and vibration control. Odours may be generally subject to the regulation under the Air and Air Pollution Control Act.

Additionally, under article 793 of the Civil Code, a landowner may prohibit others from generating odours, vibrations, gases, smoke, noises and dust that may enter or affect the landowner's property if this pollution source exceeds a reasonable tolerance level.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

Under Taiwan law, there is no general regulatory regime dealing with environmental damage. Environmental damage would be subject to sectorial regulations or the general law, such as the Administrative Procedure Act or the Civil Code.

Environmental taxes

11 | Is there any type of environmental tax?

Other than the pollution charges imposed by the relevant environmental regulations, which are levied on the basis of the polluter pays principle, currently there is no environmental tax. However, the newly amended Climate Change Response Act (CCRA) imposes carbon charges against sources of GHG emissions for direct and indirect emissions.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Other than the reporting obligations under the relevant environmental regulations mentioned above, GHG emission reporting is of particular importance. Specifically, under the CCRA, businesses in specific fields are required to conduct accounting, reporting and verification of their GHG emission records.

Businesses Subject to Accounting and Registration of Greenhouse Gasses Emission Sources sets forth a list of industry-specific businesses that are major GHG emission sources subject to mandatory accounting and reporting of GHG emissions. In addition, any business whose GHG emission reaches 25,000 tons or more per year would be required to report each year its GHG emission for the previous year. In line with the CCRA amendment, on 21 June 2023,

the EPA announced the draft amendment to the Regulations Governing the Accounting, Reporting and Verification of GHG Emission Records, an ancillary regulation of the CCRA, for public consultation. Several revisions have been made to the reporting requirements for GHG emissions.

For listed companies, they are required to issue annual ESG reports based on the guidelines set out in the GRI, SASB and TCFD. Listed companies are also required to include ESG information as part of their disclosure on corporate governance matters in the prospectus following the Regulations Governing Information to be Published in Public Offering and Issuance Prospectuses.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The government policy for environmental issues is generally supportive and proactive for environmental protection. The government agenda centres around five main pillars: the adoption of climate action, improvement of the quality of the environment, cultivating circular economy, strengthening pollution control to improve the quality of the environment, conservation of nature and promoting environmental education and public participation in endeavours to achieve sustainability. Government objectives have prompted the adoption and amendment of key legislation.

Most notably, the government adopted the Enforcement Rules on the Disposable Tableware Use Restriction and Enforcement Rules on the One-Time Beverage Cup Use Restriction in 2019 and 2022, requiring most food and beverage retailing businesses to reduce the amount of waste and to boost recycling rate, amended the Water Pollution Control Act in 2021 to create a robust regime for water pollution prevention, and amended the Air Pollution Control Act in 2018 to optimise and strengthen control over fuels and hazardous pollutants.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

Hazardous activities are generally governed by the Occupational Safety Health Act (OSHA), which protects workers' safety at workspace. While no licence is required, all enterprises and factories should comply with the OSHA for their date-to-date operation. The OSHA imposes various obligations upon the employers, including making assessment on occupational hazards and implementation of effective preventive measures based on such assessment.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

The Toxic and Concerned Chemical Substances Control Act (TCCSCA) is the core regulation on the hazardous products. Under the TCCSCA, toxic chemical substances generally refer to those intentionally produced by human activity or unintentionally derived from production processes, which are designated by the central competent authority as toxic chemical substances based on their toxicity characters. The TCCSCA sets forth different levels of regulation on toxic chemical substances depending on the category, the use amount, and the handling method of the toxic chemical substances. In particular, the manufacture, import and sale of toxic chemical substances are subject to prior approval of the local competent authority. Usage and storage of the toxic chemical substances must be registered beforehand at the local authority. Disposal and export must also be registered in advance for every batch and shipment.

The TCCSCA also provides that labelling is required for the containers, packaging, operations and facilities of toxic chemical substances. Warnings should also be clearly shown on the containers, packaging and the operation sites of toxic chemical substances. Further regulatory details are provided in the Regulations Governing the Labelling and Safety Data Sheets of Toxic and Concerned Chemical Substances.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

Prevention of industrial accidents may be subject to the occupational accident prevention measures under the OSHA, pollution prevention measures under the Air Pollution Control Act, Water Pollution Control Act, and Soil and Groundwater Pollution Remediation Act, as well as fire and explosion prevention measures under the Fire Services Act. The above laws and their ancillary regulations set forth various requirements that aim to prevent and minimise the risk of industrial accidents to the extent possible.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

The main environmental aspects in M&A transactions vary depending on the type of business the target company is involved in. Nonetheless, the common environmental aspects in M&A transactions would include air, water and soil and groundwater pollution, as well as compliance with the OSHA. For certain types of infrastructure projects, the impact on wildlife and biodiversity conservation is of particular importance.

For asset acquisition transactions, since the environment-related permits and licences are generally not transferrable, whether they could be re-applied for in a timely manner may be the focus of the transaction so as to minimise any risk of business interruption. In 2021, the EPA opined to simplify the reapplication procedure in the case of asset acquisition. According to the EPA, for certain permits concerning pollution prevention, the buyer will only need to apply for changing the content of the permits instead of undergoing a new permitting procedure, provided that the status of the pollution sources remains unchanged after the transaction.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

For financing transactions, in tandem with the awareness of the global ESG trends, the Financial Supervisory Commission (FSC) implemented a series of measures to encourage Taiwanese banks to provide favourable lending conditions to companies that fulfil ESG requirements. In particular, the FSC issued an incentive plan to the banks that provide credits to companies in the 'six core strategic industries', one of which is the 'green and renewable energy'.

For IPOs, serious environmental pollutions that are likely to affect an issuing company's normal financial and business operation can be the grounds for rejection in the reviewing process on the Taiwan Stock Exchange. In the prospectus, the issuing company must also disclose all pollution incidents and losses or potential losses suffered due to the environmental damage claims or fines (ie, the environmental expenses), as well as the effects of the pollution on the company's surplus, competitive status and capital expenditure.

Parties to real estate transactions should bear in mind that several Taiwan environmental protection laws concerning the pollution or waste remediation may impose a remediation obligation upon the acquirer under certain circumstances even if the pollution took place before the completion of the transaction.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

Under the Government Procurement Act, preference should be given to a bid by a bidder whose product has the same or similar functions as other competing products and has been awarded an environmental protection certificate. Such preference may include a price preference up to 10 per cent. The same preference may apply to products or their raw materials that are manufactured, to be used or to be disposed of in a way that is beneficial to the environment.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

According to the Environmental Impact Assessment Act (EIAA), 11 types of development activities are subject to environmental impact assessment. These development activities encompass industrial and non-industrial projects as follows:

- establishment of factories and development of industrial areas;
- development of roads, railways, mass rapid transit systems, harbours and airports;
- mining or prospecting activities;
- development of water storage, water supply, flood control and drainage projects;
- development and utilisation of agriculture, forestry, fishing, and pastoral land;
- development of amusement, scenic spots, golf courses and sports venues;
- development of cultural, educational and medical facilities;
- construction of new urban areas and high-rise buildings or renewal of old urban areas;
- construction of environmental protection projects;
- development of nuclear and other energy sources and construction of radioactive nuclear waste storage or processing sites; and
- other development activities announced by the central competent authority.

The environmental impact assessment must be conducted at the planning phase. While the approval granted by the EPA is not a licence of a development activity, it is usually a prerequisite to obtain the licence or permit to be issued by the competent authorities in charge of the relevant industry or development activity.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

The environmental assessment under the EIAA is characterised by a two-phase process.

The developer should prepare an environmental impact statement (EIS) and submit the EIS to the competent authority governing the development activities. The authority governing the development activities will then refer the EIS to the EPA review committee for review.

If the review committee concludes that the proposed development activity would not cause a significant impact on the environment, it will announce the result of such a review and the project is considered EIA-cleared. The developer may need to revise the EIS according to the review opinions. In principle, the review period of Phase I Assessment should not exceed 50 days after receipt of the EIS, which may be extended for another 50 days. If the review committee concludes that the proposed development activity may cause significant impact on the environment, it should initiate the Phase II assessment.

Once the Phase II assessment is initiated, the developer should inform the relevant authorities in writing and publish the relevant information publicly (such as, on the newspaper and online, as may be required). The developer should also hold a public briefing and publish

the information online. Then, the developer should consider the opinions from all sides and prepare the environmental impact assessment report (EIA Report). Public hearings should be conducted for the EIA Report before formal committee review. If the review committee considers that the development plan should not be implemented, the authority governing the development activity may not issue the relevant permit or licence to the developer.

REGULATORY AUTHORITIES

Regulatory authorities

22 Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The central competent authority for environmental matters is the Environmental Protection Administration (EPA), while the local competent authorities are the local governments, which often delegate this competence further to their subordinate agencies or departments. The scope of authorities also varies based on the different laws governing specific environmental matters. As a rule of thumb, the EPA governs the environmental matters that have a nationwide dimension while the local governments govern the environmental matters within their administrative districts. However, it is not uncommon for EPA to delegate certain competences to the local governments.

Investigation

23 What are the typical steps in an investigation?

One of the common investigative measures taken by the competent authorities for environmental matters is inspection. Non-compliance with such inspection or found during such inspection may result in administrative fines, which can be consecutive until such non-compliance is corrected. During the inspection, anything that can serve as evidence of non-compliance may be seized by the competent authority. The competent authority may invite interested third parties to make statements concerning the subject matter in connection with such inspection.

Generally, the affected party may not challenge an investigative measure such as inspection if it forms part of the administrative procedure. However, the affected party may only challenge such measure along with the final administrative disposition (such as imposition of a fine) unless the investigative measure can be separately enforced.

Administrative decisions

24 What is the procedure for making administrative decisions?

When a competent authority intends to impose fines or other punitive measures upon the violator of environmental laws, it has to comply with certain procedural requirements set forth in the applicable laws and regulations, such as the Administrative Procedure Act and Administrative Penalty Act. Laws governing particular environmental issues may contain additional procedural requirements depending on the nature of the non-compliance.

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The law does not limit the types of evidence that can be used by the party. The administrative authority is legally obliged to take into consideration all the circumstances available, regardless of whether such circumstance is beneficial or adverse to the affected party.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

Sanctions and remedies that may be imposed by the regulator for violations of environmental laws are administrative penalties and, in severe cases, criminal penalties may follow. According to the Administrative Penalty Act, administrative penalties refer to administrative fines, forfeiture and other types of administrative penalties, which are: (1) restrictive and prohibitive orders (such as suspension of business); (2) orders of deprivation or abolition of eligibility or rights (such as cancellation of permits); (3) actions against reputation (such as publication of the name or penalty); and (4) actions of disciplinary warnings. For material violations of certain environmental regulations, the violator may be subject to criminal penalties, such as imprisonment or criminal fines, subject to the criminal court's judgment.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

In the event that an administrative disposition issued by the regulator is unlawful (eg, without due process), the recipient or interested parties of such administrative disposition may file an administrative appeal against the regulator within 30 days of receipt of the administrative disposition. Then, the legality and appropriateness of such administrative disposition will be reviewed by an administrative appeal committee organised by the superior authority of the regulator.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 Are environmental law proceedings in court civil, criminal or both?

Environmental law proceedings may take place in civil, criminal or administrative courts, depending on the nature of each claim. Anyone whose rights or legal interests were harmed by the unlawful administrative disposition may bring an administrative lawsuit to the administrative court seeking revocation of such administrative disposition after receiving an unfavourable administrative appeal decision.

Violators' criminal liabilities are subject to the criminal court's determination. In addition, if a violation causes any loss and damage to any third party, such third party may claim damages in a civil court.

Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

In addition to adjudicating the legality of an administrative disposition, the administrative court has the power to issue an injunction. According to article 298 of the Administrative Litigation Act, in the event that it is necessary for preventing material harm or imminent danger, for the purpose of maintaining the temporary status quo regarding legal disputes under public law, one may seek an injunctive relief with the administrative court.

Civil claims

29 Are civil claims allowed regarding infringements of environmental law?

In terms of an environmental law violation, contractual and non-contractual civil claims under the Civil Code are available. According to paragraph 2, article 184 of the Civil Code, the violator should be liable for the damage caused to others due to a violation of a statutory provision that is enacted for the protection of others. Furthermore, according to article 191-3 of the Civil Code, if the nature of certain works or activities, or their tools or methods might post risks of damage to others, the operator should be liable for the damage to others unless the damage wasnot caused by such works, activities, tools or methods, or the operator has exercised reasonable care to prevent such harm.

Defences and indemnities

30 What defences or indemnities are available?

Allocation of liability and joint or several liability

In principle, administrative penalties are mostly imposed on those who violate environmental laws and regulations. According to article 14 of the Administrative Penalty Act, those who intentionally and jointly violate the administrative laws shall be punished separately according to the seriousness of their acts. Joint and several liabilities may be stipulated under specific environmental regulations. For example, paragraph 1, article 31 of the Soil and Groundwater Pollution Remediation Act stipulates that the interested party of the polluted land, the polluter, and the person potentially responsible for pollution should bear the joint and several liability for certain costs incurred by the competent authorities to deal with the soil and groundwater pollution. As for civil indemnities, joint tortfeasors that unlawfully infringe the rights of others should bear joint and several liabilities under article 185 of the Civil Code.

Statutes of limitation

According to article 27 of the Administrative Penalty Act, the power to impose an administrative penalty should expire when a three-year period lapses. The three-year period should commence from the date on which the unlawful action ends; provided that if the result of such actions occurs later, the limitation should start to run from the date when such result occurs.

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Strict liability

Strict liability is applied only when it is explicitly prescribed under specific legislation. For example, article 18 of the Nuclear Damage Compensation Act stipulated that the operator of a nuclear facility is liable for nuclear damages arising from a nuclear incident, regardless of whether it is caused intentionally or through negligence.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

In principle, penalties under environmental laws are mostly imposed on the violators. However, according to article 15 of the Administrative Penalty Act, where a director or representative of a private entity causes such violation when performing their duties, they should be punished with a similar amount of fine if they have acts with intention or in gross negligence. A director or representative may also be punished by a similar amount of fine as that of the private entity if they fail to perform their duties to prevent any employee from causing a violation of law due to their act of intention or gross negligence.

Appeal process

32 | What is the appeal process from trials?

In general, three levels of appeal are available in ordinary civil and criminal proceedings in Taiwan. The proceedings of the first instance is usually conducted at the district court. An unfavourable judgment rendered by the district court can be appealed to the high court and the Supreme Court in the second and third instances, respectively. In ordinary criminal proceedings, the case may only be appealed to the Supreme Court only if such judgment contradicts the laws; in addition, criminal cases of certain lesser offences may not be appealed to the Supreme Court. The first instance of civil summary proceedings or civil small claim proceedings are handled by the summary divisions of the district court, and the case may be appealed to the ordinary district court.

Two levels of appeal are permissible for administrative lawsuits. In principle, high administrative courts hear the first instance of the ordinary litigation proceedings. Thereafter, the Supreme Administrative Court hears appeals from the high administrative courts. For summary proceedings, starting from 15 August 2023, the first instance will be conducted at the district administrative litigation divisions of the high administrative courts, whereas the case can be appealed to the high administrative litigation divisions of high administrative courts in the second instance.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

Taiwan is not a contracting party to international environmental treaties or agreements.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

While Taiwan is not a contracting party to international environmental treaties or agreements, the Taiwan legislature and policymakers codify and incorporate major principles of international environmental treaties or agreements into domestic law as well as various environmental policies. This reflects the eagerness of the Taiwanese government to actively adopt measures that promote compliance and implementation.

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

On 26 May 2023, the Legislative Yuan passed an amendment to the Mining Act, the largest amendment in 20 years. The amendment grants local indigenous people a consultation right, strengthens environmental protection measures and removes several provisions that were favourable to mining businesses, which have been long criticised. The amended Mining Act took effect on 21 June 2023.

Mineral rights holders must consult with and obtain consent from local indigenous peoples or tribes in accordance with the Indigenous Peoples Basic Law for mining existing land and before applying for the approval to mine new pieces of land.

A rectification requirement of the environmental impact assessment (EIA) process is also introduced under the amended Mining Act. An EIA is now required for any land that was approved for mining before the Environmental Impact Assessment Act took effect, or such approval may be cancelled.

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Summary

LEGISLATION

Main environmental regulations

1 What are the main statutes and regulations relating to the environment?

The National Environmental Policy Act (NEPA) is the umbrella procedural statute that requires federal agencies to consider the environmental impacts of their actions.

Several substantive statutes are media-specific:

- the Clean Air Act (CAA) regulates air quality and emissions;
- the Clean Water Act (CWA) regulates water quality and discharges;
- the Safe Drinking Water Act establishes drinking water standards for tap water and underground injection rules;
- the Resource Conservation and Recovery Act (RCRA) regulates hazardous and solid waste management;
- the Comprehensive Environmental Response, Compensation and Liability Act (also known as Superfund) addresses remediation of legacy disposal sites and release reporting; and
- the Oil Pollution Act provides for oil spill prevention and response.

Other statutes are resource-specific. The Endangered Species Act (ESA) protects listed endangered and threatened species and critical habitat. Other statutes protect certain species, including the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act and the Marine Mammal Protection Act.

Other statutes govern natural resource planning and development on federal lands onshore and on the Outer Continental Shelf, including:

- the Mineral Leasing Act;
- the Outer Continental Shelf Lands Act;
- the Federal Land Policy and Management Act;
- the Mining Law of 1872;
- the National Forest Management Act;
- the National Park Service Organic Act;
- the Wild and Scenic Rivers Act;
- the National Wildlife Refuge System Administration Act;

- the Rivers and Harbors Act;
- the Marine Protection, Research, and Sanctuaries Act (ie, Ocean Dumping Act); and
- the Coastal Zone Management Act.

Additional statutes cover certain products or wastes:

- the Toxic Substances Control Act (TSCA) regulates new and existing chemicals and products that contain these chemicals;
- the Pollution Prevention Act creates a national policy to reduce pollution at the source by changing production, operation, and raw materials;
- the Federal Insecticide, Fungicide and Rodenticide Act regulates pesticides; and
- the Federal Food, Drug and Cosmetic Act regulates food, drugs and cosmetics.

Still more statutes focus on human health and safety:

- the Hazardous Materials Transportation Act (HMTA) regulates transportation of hazardous materials;
- the Occupational Safety and Health Act regulates hazards in the workplace; and
- the Emergency Planning and Community Right-to-Know Act provides emergency planning and notification for hazardous and toxic chemicals.

The US Environmental Protection Agency (EPA) offers high-level summaries and citations for key US environmental laws.

Nearly all of these statutes have implementing regulations issued and administered by federal agencies vested with jurisdiction. The federal and state governments share authority to administer some federal environmental programmes (eg, the CAA and the CWA). States also have their own, sometimes more stringent, environmental laws, such as groundwater protection schemes, additional recycling and extended producer responsibility requirements, and state equivalents of NEPA. Counties, cities and other local government entities may have their own requirements as well.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

There is no general system providing integrated pollution prevention and control. The EPA administers most of the national environmental statutes and regulations, but other federal agencies also have jurisdiction over federal lands, wildlife, or specific activity types. State and local authorities generally may impose additional requirements where not pre-empted by federal law. In some cases, the federal system is a delegated programme where states implement minimum federal standards, but can impose more stringent requirements.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Superfund's remediation authorities extend to pollution of soil and other media. EPA lists sites on the National Priority List based on a hazard ranking system. Liability under the act

and state laws is typically strict, joint and several, and retroactive, even to legacy contamination sites. Potentially responsible parties (PRPs) liable for remediation under Superfund include entities that arrange or arranged for the disposal of hazardous substances, transporters and current and former owners and operators of contaminated sites. These PRPs may be strictly and retroactively liable for investigation, evaluation and remedial action, which is generally selected by EPA in compliance with the National Contingency Plan. Superfund also provides that federal and state 'trustees' can recover from PRPs the costs associated with the injury to, destruction of or loss of natural resources. States also implement voluntary clean-up and brownfields programmes aimed at remediating and reusing legacy contaminated soil sites. While Superfund covers soil pollution after the release of hazardous substances, RCRA aims to prevent soil pollution in the first place by implementing a cradle-to-grave approach to hazardous waste management and monitoring, and also provides redress for releases that create an 'imminent and substantial endangerment' to the environment.

Regulation of waste

4 | What types of waste are regulated and how?

RCRA defines 'solid waste' as 'any garbage, refuse, sludge... and other discarded material'. Under that law, 'solid' wastes include solid, liquid, semisolid or contained gaseous material. Solid wastes classified as 'hazardous wastes' under Subtitle C of RCRA include:

- certain specifically listed wastes;
- wastes that fail generic characteristics of toxicity, reactivity, corrosivity or flammability;
- certain mixtures of hazardous wastes and other solid wastes, and residues from treatment of hazardous waste; and
- media (eg, soil and debris) that contain hazardous waste.

Some states have adopted additional provisions that expand the generic characteristics of hazardous waste or the list of wastes identified as hazardous in that state.

RCRA creates a cradle-to-grave regulatory scheme, including detailed requirements for generators and transporters of hazardous wastes, as well as detailed design and operating standards for treatment, storage and disposal facilities, which generally require state or federal permits. RCRA requires that certain hazardous wastes meet treatment standards (incineration, stabilisation) before landfill disposal. Certain treatment standards are numerical and others require the use of certain treatment technologies. 'Universal' wastes, including batteries, certain suspended or cancelled pesticides, aerosol cans, light bulbs and lamps and mercury-containing equipment (some states have expanded this list) are subject to streamlined hazardous waste storage, labelling and transportation requirements. Municipal solid wastes and medical and infectious wastes are generally subject to state transportation and disposal requirements. The Act also imposes record-keeping requirements on disposers of hazardous waste. For hazardous waste storage, depending on the size and type of facility, RCRA regulations may impose accumulation time limits and technical standards (eg, for containers, tanks, drip pads or containment buildings), as well as training requirements, air emission limitations and the development of contingency plans and emergency procedures.

Under the HMTA, transporters of hazardous waste must obtain an EPA identification number and comply with EPA's hazardous waste manifest system. Exemptions exist for transporters of certain recycled or reclaimed hazardous wastes generated by small-quantity generators. Transporters must take certain actions in response to discharges or spills of hazardous waste. Transporters must also comply with applicable Department of Transportation regulations that apply to the transport of hazardous materials by rail, aircraft, water vessel or truck. These include record-keeping, training, manifest, labelling and packaging requirements. RCRA also restricts the export and import of hazardous waste.

RCRA and implementing EPA regulations and guidance exempt certain recyclable materials (including some by-products) and recycling activities from its hazardous waste regulations, generally if specified conditions are met. Recycling standards under RCRA range from full regulation to full exemption from regulation. Federal law does not mandate a circular economy or waste recycling in lieu of disposal. Under a growing number of state laws, extended producer responsibility requirements (including recycling targets) may apply for certain categories of products.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

The CAA regulates air emissions from stationary and mobile sources and obliges the government to regulate air pollutants it determines may endanger public welfare. One of the main provisions of the CAA authorises EPA to establish National Ambient Air Quality Standards (NAAQS). To date, EPA has established NAAQS for six pollutants: particulate matter (coarse and fine), ozone, sulphur dioxide, nitrogen dioxide, carbon monoxide and lead. States must adopt state implementation plans (SIPs) to achieve the NAAQS and to control emissions of criteria and hazardous pollutants within their boundaries. The CAA also requires EPA to regulate emissions of listed hazardous air pollutants (HAPs) and to address ozone-depleting substances, acid rain and regional haze.

Most facilities that produce air emissions are likely to be regulated by the CAA and must comply with federal and state requirements to meet or maintain the NAAQS. The act requires new or modified sources of air pollutants to obtain pre-construction approval. The pre-construction permit programme requires project proponents to demonstrate that emissions from the new or modified sources will not cause or contribute to an increase in air pollutants that would degrade air quality, and requires installation of certain levels of pollution control equipment depending on the area's air quality. Following construction, new or modified sources must obtain operating permits, which require compliance with equipment standards (eg, best available pollution control equipment) and emissions limits. These standards and limits vary based on facility type and the nature of emissions. Permitting thresholds, emissions limits and equipment standards are generally more stringent for sources emitting HAPs or located in NAAQS non-attainment areas. For certain actions, federal agencies must also demonstrate general conformity or transportation conformity to approved SIPs, thereby ensuring that those actions will not create or worsen air quality violations under the NAAQS.

Although EPA issues permits in some circumstances, most permits are issued by state or local air pollution control agencies under their SIP authority (with EPA oversight). Operating

permits are generally required for larger sources and sources that are subject to new source performance standards, HAP standards and acid rain control requirements. Operating permits typically last for five years and include enforceable emissions standards and limitations (which vary by industry or source category), compliance schedules, and monitoring and reporting requirements.

In August 2015, EPA introduced the Clean Power Plan (CPP) to set national standards to reduce carbon dioxide pollution from stationary power plants. In June 2019, EPA formally withdrew the CPP, and replaced it with the Affordable Clean Energy (ACE) rule. In June 2022, the Supreme Court reviewed the DC Circuit's decision to vacate the ACE rule, which would have opened the door for further regulatory action by the Biden administration on power plant GHG emissions. In West Virginia v EPA, the Supreme Court, relying on the 'major questions doctrine,' concluded that Congress did not grant EPA the authority to devise emission caps based on a goal to shift power generation from coal to renewable energy and natural gas. The EPA thus exceeded its power by enacting the CPP. Congress must now provide clear direction to the EPA in its delegation of authority before the agency can regulate greenhouse gas emissions as attempted in the CPP. In May 2023, EPA issued a proposed rule under the CAA to revise new source performance standards, to establish emission guidelines for existing fossil fuel-fired electric generating units and combustion turbines, and to repeal the ACE rule.

Beyond stationary sources, EPA has broad authority over mobile sources including aircraft, on-road vehicles and non-road engines and equipment. It sets emission standards for vehicles, imposes testing and certification for engines and controls fuel formulations and additives. Passenger cars and light-duty trucks must meet tailpipe emission standards for various air pollutants and greenhouse gases (GHGs). In September 2019, EPA formally revoked California's unique ability to set stricter vehicle emissions standards, followed by about a dozen other states, but then reinstated California's authority in March 2022. In December 2021, following a re-evaluation of standards previously set, EPA issued new stricter standards for tailpipe carbon dioxide emissions for passenger cars and light-duty trucks for model years 2023 to 2026. The Department of Transportation followed by strengthening corporate average fuel economy standards in April 2022 for model year 2026. In April 2023, EPA issued a proposed 'phase 3' rule to create stricter greenhouse gas emission standards for heavy-duty vocational vehicles that would begin to apply in model year 2027.

In addition, for aircraft, in August 2016, EPA finalised a finding that GHG emissions from certain classes of aircraft endanger human health and welfare. On 11 January 2021, EPA issued the first-ever Clean Air Act GHG emission standards for aircraft. Those standards apply to manufacturers of new aircraft and new aircraft engines, with compliance determined as part of the Federal Aviation Administration's airworthiness certification process. In November 2021, the Federal Aviation Administration published the US Aviation Climate Action Plan, which outlines the government's approach to achieving net-zero emissions by 2050. The plan relies on more efficient aircraft and engine technologies, production and use of sustainable aviation fuels, advancements in airport operations, international cooperation, and support for climate science research.

The US currently has no federal law setting energy efficiency standards or requiring energy audits for buildings. The US Department of Energy (DOE) establishes and implements minimum energy conservation standards for residential, commercial and industrial

equipment and appliances used in buildings under the Energy Policy and Conservation Act of 1975, as amended by the National Appliance Energy Conservation Act, the Energy Policy Acts of 1992 and 2005, and the Energy Independence and Security Act of 2007. As part of the Inflation Reduction Act of 2022, the government offers incentives for energy efficiency such as 179D Commercial Building Energy-Efficiency Tax Deduction. States and localities have promulgated green building standards, which, generally, are voluntary, and are exploring other means to make buildings more energy efficient.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

The CWA requires a permit for any person or entity to discharge either pollutants or dredged or fill material to waters of the United States. EPA oversees the former; the US Army Corps of Engineers oversees the latter (subject to EPA veto). In June 2023, in *Sackett v EPA*, the Supreme Court substantially narrowed the definition of 'waters of the United States', a decades-long debate and the subject of numerous agency rulemakings and court decisions. In particular, the Supreme Court held that waters of the United States include jurisdictional wetlands with a continuous surface connection to relatively permanent bodies of water. The Corps and EPA are in the process of implementing *Sackett*.

Individual states also maintain their own programmes regulating these discharges to surface waters, and may be delegated authority to implement the act within their borders. Industrial and municipal 'discharges' of wastewater and designated discharges of storm water to these waters that pass through a 'point source' and 'discharges' of fill material are subject to permitting. Permits must contain the more stringent of technology-based effluent limitations reflecting uniform national standards or effluent limitations designed to protect the water quality of the specific water body to which the discharge is made. States also issue water quality certifications under Section 401 of the Clean Water Act, which remains the subject of ongoing regulatory changes and litigation aimed to balance state interests and expeditious permitting.

The EPA also sets standards for different contaminants in drinking water through the Safe Drinking Water Act and monitors states, local authorities and water suppliers who enforce those standards. State law governs the extraction of water for consumptive use. In addition, EPA regulates the transportation and deposit of waste by a vessel within coastal waters through the Shore Protection Act and Marine Protection, Research and Sanctuaries Act (also known as the Ocean Dumping Act).

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

Several categories of federally owned and managed lands are set aside for conservation and recreational purposes and under various agencies' jurisdiction. Such designations are usually made by Congress pursuant to an organic statute and a site-specific statute, with the exception of the presidential designations of national monuments under the Antiquities Act. Other categories of protected areas include national parks, national wildlife refuges,

national forests, wild and scenic rivers and wilderness areas. Each type of designation entails balancing predominant or multiple uses. For example, the ESA requires protection for designated critical habitat areas, while the Land and Water Conservation Fund (LWCF) invests earnings from offshore oil and gas leasing to conserve parks, wildlife refuges, forests, open spaces, trails and wildlife habitat. Under section 6(f) of the LWCF Act, projects that convert to non-recreational uses property that has been supported by LWCF funds generally must receive approval from the US National Park Service and provide replacement lands or other mitigation.

The Department of the Interior manages most public lands, including both onshore and the 1.7 billion acres of the Outer Continental Shelf. The Department of Agriculture manages national forests. Designated wilderness areas receive the most protection. Individual states and localities also have systems of protected areas.

Transportation (road, transit, or rail) projects additionally must comply with section 4(f) of the US Department of Transportation Act of 1966, which precludes a transportation project's uses of parks, recreation lands, wildlife refuges, or historic sites unless there is no feasible and prudent avoidance alternative and the project includes all possible planning to minimise harm to section 4(f) properties, or that the project only has a minimis impact on section 4(f) properties.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

The ESA provides for the protection and recovery of listed endangered and threatened plants and animals and the habitats upon which they depend. Absent a 'no effect' determination, each federal agency must engage in consultation to ensure that its actions are not likely to jeopardise the continued existence of the species, or result in destruction or adverse modification of the species' designated critical habitat. The ESA further prohibits anyone from 'taking' a listed species and from engaging in commerce in listed animals or plants or parts thereof. 'Taking' is broadly defined to include killing, capturing or destroying habitat. Some states have enacted legislation to protect endangered and threatened plants and animals (in addition to the federal ESA list) within those states. The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and their respective regulations, also protect against certain actions, including 'taking' migratory birds and eagles.

The services remain engaged in review and potential further revision of regulations implementing the ESA, which in recent years have vacillated between fewer and greater protections. In August 2019, the US Fish and Wildlife Service and National Marine Fisheries Service sought to reform the ESA implementation, including the rules for listing species, designating critical habitat, conducting interagency consultation and removing the automatic extension of take prohibitions to listed threatened species under the jurisdiction of the US Fish and Wildlife Service. However, in July 2022, a federal court rejected those regulatory changes, effectively reinstating regulations adopted in 2016, which had been challenged in litigation before being superseded by the 2019 rules. Separately, the services in June 2022 reversed a December 2020 rule narrowing the definition of 'habitat' for purposes of designating critical habitat. In June 2023, the US Fish and Wildlife Service and National Marine Fisheries Service (Services) issued three proposed rules that aim to overturn regulatory

amendments during the Trump administration. If finalised, these rules may engender litigation as well. On 4 October 2021, the US Fish and Wildlife Service reversed a January 2021 rule that had excluded incidental take from prohibition under the Migratory Bird Treaty Act, thereby again subjecting incidental take of migratory birds to prosecutorial discretion for enforcement. The agency continues to consider creation of an incidental take permitting program for migratory birds.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Noise, odours and vibrations are primarily regulated, if at all, at the local or state level. Many states have noise pollution programmes, which vary widely. Local zoning laws and allowed activities also vary widely. Under the Clean Air Act, Noise Control Act of 1972 and Quiet Communities Act of 1978, EPA retains authority to investigate, study and respond to questions about noise pollution and adverse health impacts. Federal noise regulations cover standards for transportation equipment, air and motor carriers, low noise emission products and construction equipment, and are enforced by EPA or other designated federal or state and local agencies. Workplace exposure to noise, odours and vibrations is regulated by the US Occupational Safety and Health Administration. Under common law tort principles, private parties may bring nuisance actions for excessive noise, odours and vibrations. Federal and state agencies also are dedicating increasing attention to these issues via environmental justice initiatives.

Liability for damage to the environment

10 Is there a general regime on liability for environmental damage?

There is no US generalised regime for environmental damages. Statutes, regulations and common law can impose various types of liability, including administrative, civil and criminal. Courts in turn establish precedent for liability in cases arising under various environmental laws. Alleged violators may face government administrative actions, civil suits or citizen suits. Only the government can prosecute criminal liability in court.

The government generally follows proportional enforcement. Minor offences may trigger administrative or civil sanctions; more serious and intentional violations trigger more severe sanctions or even criminal charges. The government's burden of proof is highest in criminal cases. Some programmes, like Superfund, impose strict liability based on party status. RCRA authorises the government or private parties to seek relief for 'imminent and substantial endangerment' to the environment.

Environmental taxes

11 Is there any type of environmental tax?

Most US environmental programmes are regulation based, not tax based. Some environmental tax programmes do exist. For example, the Oil Pollution Act established a federal trust fund to clean up oil spills, financed by a per-barrel tax collected from the oil industry.

An underground storage tank trust fund is funded by taxes on certain motor fuels. A federal tax also applies to use or import ozone-depleting chemicals. The Surface Mine Control and Reclamation Act authorises a reclamation programme for abandoned mine land, which is funded by a coal tax. Environmental taxes are more prevalent on the state and local levels, including taxes relating to waste and battery disposal, chemicals, petroleum, tires, air emissions, oil spill response, litter control and water quality.

Environmental reporting

12 Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Since approximately 2010, EPA has required certain large emitters (eg, fuel and industrial gas suppliers, CO_2 injection sites) to annually report their GHG emissions data using specified methodologies and EPA's electronic reporting tool (see EPA's Greenhouse Gas Reporting Program, codified at 40 CFR Part 98). Following EPA's multi-step verification process, the annual data is then made available to the public.

There is currently no general system for comprehensive ESG reporting in the United States, although more targeted reporting requirements have been established within the social dimension of ESG, such as the Securities and Exchange Commission's (SEC) conflict minerals rule, the SEC's rule on disclosures relating to human capital management and the State of California's Transparency in Supply Chains Act. To date, most companies voluntarily reporting ESG information have been driven by customer, investor, NGO and other stakeholder expectations. The US will likely transition to mandatory ESG reporting obligations, beginning with climate-related disclosures. In April 2022, the SEC proposed new disclosure and reporting requirements for investors concerning registered funds' and advisers' incorporation of ESG factors. The proposal, if finalised, would amend the rule under the Securities Act of 1933 and Securities Exchange Act of 1934.

Meanwhile, Congress remains divided on ESG issues and legislation has remained elusive. For example, in 2021, Congress considered legislation that would require disclosures relating to climate, ESG, political spending, tax havens and offshoring. For example, the Corporate Governance Improvement and Investor Protection Act (HR 1187), if enacted, would require publicly traded companies to periodically disclose ESG factors, including ESG performing metrics, climate change-related risks and workforce management policies. The bill would also establish the Sustainable Finance Advisory Committee, which must recommend policies to direct assets towards environmentally sustainable investments. The bill was received by the Senate and referred to committee in June 2021, but no further action has been taken as of July 2023. By contrast, in March 2023, Congress voted to overturn the US Department of Labor's ESG rule that enabled fiduciaries to consider ESG factors when selecting investments for retirement plans. President Biden vetoed the resolution. Certain states have pursued similar actions to limit ESG considerations in investing.

Government policy

13 How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

Environmental policy is often a function of the presidential administration in power, which changes every four to eight years. Current environmental policy under the Biden administration is largely focused on reducing and adapting to climate change and improving environmental justice. There also are concerted efforts to undo the overall deregulatory environmental policy of the prior Trump administration, including on air emissions, species, wetlands and environmental reviews. These environmental policy objectives have manifested earliest in new guidance documents, newly proposed regulations by various federal agencies, and litigation positions. On the legislative front, these environmental policy objectives are informing discussions on bills involving infrastructure (surface transportation, water resources and energy), sustainability, corporate reporting and agency budgets. For example, after the Trump administration in September 2020 updated regulations for NEPA environmental reviews of proposed federal agency actions, the Biden administration reversed some of them in April 2022, and in July 2023 proposed a broader reversal through a 'Phase 2' rulemaking. Certain environmental objectives that cannot be achieved via bipartisan legislation may be pursued via the budget reconciliation process, which is exempt from the 60-vote supermajority requirement in the Senate to overcome a filibuster. For example, the Infrastructure Investment and Jobs Act of 2021 (Bipartisan Infrastructure Law) provided substantial funding to improve the resiliency of the nation's infrastructure and advance environmental justice, including investments in grid modernisation, clean energy, environmental remediation, and safe drinking water systems. In addition, the Inflation Reduction Act of 2022 represents another major expansion of US environmental and climate policy. Most recently, the Fiscal Responsibility Act of 2023 (FRA) was signed into law to raise the national debt ceiling and prevent a government default. The FRA, in relevant part, modified NEPA to expedite permitting processes and codified certain of CEQ's 2020 amendments to its federal government-wide NEPA regulations.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 Are there specific rules governing hazardous activities?

See the Resource Conservation and Recovery Act regarding the generation, treatment, storage, disposal and management of hazardous wastes; the Hazardous Materials Transportation Act for transport and handling of hazardous materials; the Comprehensive Environmental Response, Compensation and Liability Act for release of hazardous substances; the Toxic Substances Control Act (TSCA) for production, importation, use, and disposal of specific chemicals; and the Occupational Safety and Health Act of 1970 (OSHA 1970) for worker safety at facilities. OSHA 1970 also establishes specific standards for the construction, maritime and agriculture industries, designed to reduce on-the-job injuries and to limit workers' risks of developing occupational diseases from exposure to various air contaminants, asbestos and other substances.

Regulation of hazardous products and substances

15 What are the main features of the rules governing hazardous products and substances?

Under TSCA, reporting, record-keeping and other requirements may apply to manufacturers (including importers), processors, distributors and users of chemical substances. Manufacturing a non-exempt new chemical substance (not on the inventory under the Act) is prohibited unless and until the US Environmental Protection Agency (EPA) makes an affirmative finding either that a chemical is not likely to present an unreasonable risk or that manufacture may begin subject to a compliance order imposing restrictions on the new chemical. Designated 'significant new uses' of approximately 2,800 chemicals are subject to similar notification and review requirements.

Following amendments to the act passed in 2016, EPA also has authority to:

- prioritise chemicals for in-depth review;
- conduct risk evaluations of high-priority chemicals; and
- regulate those chemicals found to present an unreasonable risk under the conditions of use.

EPA further may issue either orders or rules requiring testing by manufacturers and processors. For new chemicals (ie, not on the inventory), EPA must now make affirmative findings (eg, whether a chemical is likely to present an unreasonable risk under the conditions of use) with an order to follow if the 'likely to present' finding is made. EPA actions may pre-empt certain state restrictions on chemicals. Based on chemical manufacturer, importer, and processor submissions, EPA updates its inventory which identifies those chemical substances that are considered to be active. EPA is also prioritising chemicals for possible regulation pursuant to the 2016 statutory amendments to the act, and proposing changes to the existing regulations governing testing, risk evaluation, reporting, and significant new uses of chemical substances under TSCA to align these regulations with revisions to OSHA's Hazard Communications Standard (HCS).

The Consumer Product Safety Improvement Act 2008, implemented by the Consumer Product Safety Commission (CPSC), limits the levels of lead, phthalates and certain chemicals allowed in children's products. The CPSC also administers the Federal Hazardous Substances Act, which requires precautionary labelling to alert consumers to certain products' potential hazards. Moreover, the Federal Trade Commission has established 'green guides' for environmental marketing claims. States additionally have imposed requirements to regulate and restrict the sale of certain products containing specified hazardous substances.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

Under the 'general duty' clause of OSHA 1970, each employer is required to provide to employees a place of employment free from recognised hazards. The US OSHA has

promulgated numerous specific standards for industrial processes, establishing specific workplace practices as well as imposing training requirements. For instance, the OSHA's process safety management standard addresses hazards from the use of highly hazardous chemicals, and its hazardous waste operations and emergency response standard requires training and control measures for clean-up operations.

The Emergency Planning and Community Right-to-Know Act requires facilities to report chemical storage and release information, and also requires state and local governments to undertake emergency planning activities. In addition, under the Clean Air Act, facilities that produce, handle, process, distribute or store certain chemicals must prepare and submit a risk management plan to EPA. Certain facilities are also required to prepare, develop and implement oil spill prevention, control and countermeasure plans.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Purchasers should:

- check the target facilities' regulatory compliance;
- conduct 'all appropriate inquiries' including evaluating the facilities' environmental conditions and potential liability and costs for onsite remediation; and
- evaluate potential liabilities associated with the current and historic generation and offsite disposal of wastes from the target's operations.

A share purchaser generally acquires all the corporate target's assets and liabilities, including the predecessor's environmental liabilities. An asset purchaser may be able to acquire the assets free of environmental liabilities arising from pre-closing regulatory non-compliance by the target and from historic offsite disposal.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

The scope of many environmental laws has been interpreted quite broadly to impose liability on entities beyond the actual owner of a facility or business. For instance, lenders have been held liable in some circumstances for their borrower's environmental liabilities (although there are some defences and 'safe harbours' available for lenders). An entity acquiring contaminated real property (whether through a purchase, foreclosure or corporate restructuring) will be liable for the remediation of such contamination, even if the acquirer had nothing to do with the cause. The acquirer may have contractual indemnity or statutory rights of contribution from one or more prior owners, but government enforcement authorities can choose to seek recourse against the current owner. Transactions involving entities in bankruptcy present unique environmental issues. Environmental claims that 'continue' after a transaction or even after an entity emerges from bankruptcy, such as obligations

to correct ongoing non-compliance and to remediate contaminated property, often are not discharged in the bankruptcy.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

National regulations require the US government to take into account certain environmentally preferable products in the procurement process. Some state and local governments also have procurement policies that favour environmentally preferable products. Moreover, certain environmental violations may result in a company being suspended or debarred from doing business with the US, state, or local government.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

The National Environmental Policy Act (NEPA) requires environmental review of most discretionary federal agency actions, including approving, financing, assisting or conducting plans, projects or programmes, whether regional or site-specific. No industrial activity restriction exists; in fact, many major NEPA documents address the federal government's natural resource management decisions. Certain actions are exempt from NEPA, such as ministerial agency actions or where potentially duplicative environmental reviews are required. In some 'small handles' situations where only a small component or minor approval involves a federal nexus, NEPA might not apply to the larger project. Certain states have laws analogous to NEPA, which vary significantly.

In July 2020, the Council on Environmental Quality (CEQ) within the White House amended the nearly 40-year-old NEPA implementing regulations applicable across the federal government, including a renewed focus on which federal agency actions may be exempt from NEPA. Litigation challenges to those regulations were dismissed by the Fourth Circuit Court of Appeals for lack of ripeness. In 2021, the Biden administration began to reconsider the 2020 regulatory amendments in a two-step process, delaying individual federal agencies' corresponding amendments of their own NEPA implementing regulations that correspond with the specific types of activities that those agencies commonly undertake. In April 2022, CEQ restored some of the provisions modified in 2020, including changes to streamline the NEPA review process. In June 2023, Congress enacted the Fiscal Responsibility Act, which aims to expedite the NEPA process by clearly allowing applicants to prepare draft NEPA documents, imposing hard time and page limits on studies, requiring the designation of a lead agency, and limiting analysis to those environmental impacts that are reasonably foreseeable. In July 2023, CEQ proposed 'broader changes' to NEPA in Phase 2, including to codify environmental justice considerations, add new steps for public participation, expressly consider climate change impacts, and refocus on environmental outcomes.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

NEPA requires an environmental impact statement (EIS) for 'proposals for... major federal actions significantly affecting the quality of the human environment.' A less detailed environmental assessment (EA) may suffice for a federal agency action with insignificant or unclear impacts. Finally, categorical exclusions (CEs) apply to categories of agency actions that do not significantly affect the environment individually or cumulatively. An agency can perform a more detailed review under NEPA than legally required, and is guided by agency-specific regulations implementing NEPA.

The lead federal agency is responsible for the NEPA review, and may invite assistance by cooperating or participating federal, state, tribal and local agencies with jurisdiction or special expertise. The lead agency may also hire and supervise third-party consultants, typically funded by the project proponent, to prepare the NEPA analysis. For an EIS, and often an EA, the lead agency will publish a notice of intent for the proposed action, conduct scoping of affected resources or values, prepare a draft analysis, and then finalise its analysis and decision. The project proponent and public may submit information and comments during this process, including typically a minimum 45-day comment period on the draft analysis. The adequacy of the final impact statement may be challenged in court. There is increasing legislative and regulatory focus, to facilitate and expedite NEPA reviews, on integration of NEPA with early planning efforts and with other environmental requirements for a given project. As described above, however, those rules remain somewhat in flux as of this writing.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The US Environmental Protection Agency (EPA) implements most national environmental statutes. The Department of the Interior and the US Forest Service implement a variety of laws addressing environmental review, wildlife and cultural and historic resources. The US Clean Water Act (CWA) wetlands fill permits are issued by the US Army Corps of Engineers with EPA oversight. The US Department of Justice litigates cases arising under federal environmental and natural resources laws. State agencies issue most operations permits pursuant to authority delegated by EPA, and also share enforcement authority. States generally take the lead under the Clean Air Act (CAA), CWA, and the Resource Conservation and Recovery Act on inspections and enforcement, with EPA retaining significant 'overfiling' enforcement authority with regard to violations of these statutes at individual facilities. In other areas (eg, the Toxic Substances Control Act; the Federal Insecticide, Fungicide, and Rodenticide Act; and the Emergency Planning and Community Right-to-Know Act), EPA generally takes the lead on enforcement.

Investigation

23 | What are the typical steps in an investigation?

Although state and federal environmental agencies routinely conduct inspections of regulated facilities, comprehensive governmental investigations are not usually initiated as a result of most regulatory compliance issues. Many compliance issues, whether self-disclosed or identified as a result of an agency inspection, are resolved informally. If agency inspectors identify non-compliance through review of a regulated facility's records or an onsite inspection, under most circumstances agency personnel will initially discuss the alleged violations with facility personnel. If a regulatory agency initiates a comprehensive or even a limited investigation, it will typically make a site inspection, undertake testing, sampling or similar activities, conduct interviews of facility personnel and prepare a written report and notice of violation identifying the practices or events constituting alleged non-compliance. The facility is entitled to obtain split samples of materials removed by the agency for testing, to retain copies of records requested by the agency and to be represented by counsel throughout the investigation.

Environmental agencies also have the power to initiate criminal investigations, which are generally brought when 'serious' environmental violations (which pose actual environmental harm or substantial risks of harm) are committed 'knowingly' or 'intentionally.' These criminal charges can be brought against the company, culpable or responsible individuals, or both. If criminal charges are brought against individuals in the federal system, the risks of an active prison sentence are real. With regard to companies, apart from substantial fines, the biggest adverse impact can arise from suspension or debarment from public contracting, which can also spill over into contractual bars imposed by the compliance requirements of larger corporations, which prohibit them from using vendors with corporate criminal records.

EPA investigations were in decline for a decade, but that is expected to change. The Biden administration proposed a US$12.083 billion EPA budget for FY 2024, which among other things proposes increased civil enforcement, environmental compliance monitoring and criminal enforcement.

Administrative decisions

24 | What is the procedure for making administrative decisions?

Most administrative decision-making processes are open and allow for participation by interested parties and the general public. The procedural aspects of administrative decision-making vary based on a number of factors, including the agency involved (eg, federal or state), the type of decision (eg, individual permit or variance, enforcement) and the environmental statute under which the decision is made. Some administrative processes resemble a formal trial. More informal proceedings are decided on written submissions. Although procedures vary, the parties typically may use any type of evidence they deem relevant in administrative proceedings. There also are means to seal confidential information if applicable. Any subsequent court challenge to a final agency action is typically based on and limited to the same administrative record as before the agency. Presently federal agencies

are focused on improving public outreach particularly to environmental justice and tribal communities.

Sanctions and remedies

25 What are the sanctions and remedies that may be imposed by the regulator for violations?

Federal and state agencies may pursue injunctive relief and require the abatement or cessation of permit violations or environmental harm. Remedial steps may include installing equipment to control emissions, ceasing certain activities or revoking a permit or shutting down a facility. Many environmental statutes also authorise civil and criminal penalties, often calculated on a per-day, per-violation basis. Agencies may – and sometimes must – issue warnings or notices of violations before taking more severe enforcement actions. An agency typically may pursue an administrative enforcement action or sue the violator in federal court.

Appeal of regulators' decisions

26 To what extent may decisions of the regulators be appealed, and to whom?

Nearly all formal administrative decisions from environmental agencies can be appealed by the recipient. Appeals can be based on factual findings and legal conclusions and can also challenge the extent of the remedy imposed by the decision-maker. Administrative appeal procedures differ among agencies, including potential proceedings before an Administrative Law Judge or an agency appeals board. After exhaustion of administrative remedies, a final agency action may be appealed to a federal district court, or in some instances directly to a US court of appeals. Judicial review follows the Federal Rules of Civil Procedure, the Federal Rules of Appellate Procedure, and individual courts' local rules, and is deferential to agencies.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 Are environmental law proceedings in court civil, criminal or both?

Most violations trigger administrative or civil enforcement. In addition, a party may be prosecuted in a criminal case if that party has committed a knowing violation of the law or a permit (or in some cases, even a negligent violation). Civil regulators and criminal prosecutors have substantial discretion about whether and which charges to bring in response to environmental violations, but typically seek remedies commensurate with the underlying offence. Since the consequences associated with criminal charges are more severe, US law imposes a higher burden of proof for crimes (eg, 'beyond a reasonable doubt') as opposed to civil violations (eg, 'preponderance of the evidence' or 'more probable than not'). A party challenging a federal agency action on environmental grounds may bring a civil case in a proper federal district court or a specific (eg, appellate) court if the relevant statute so directs.

Powers of courts

28 What are the powers of courts in relation to infringements of environmental law?

In civil cases brought by governmental entities or citizen plaintiffs to enforce environmental laws, courts are generally authorised to require violators of environmental legal requirements to pay penalties and to undertake injunctive relief to abate the violation or address the environmental impacts of the violation. In a criminal case, individual defendants who plead guilty or are convicted at trial can generally be ordered to pay a higher fine and serve time in prison. The primary factors that the US courts consider in imposing such a sentence include:

- the level of harm or danger imposed;
- the degree of the violations;
- the duration of the violations; and
- whether the violations required a substantial clean-up.

Under Federal Rule of Civil Procedure 65 and similar court rules and case law, courts may also grant a preliminary injunction or other interim relief to, for example, stay a challenged agency action or prevent a project from going forward during the litigation.

Civil claims

29 Are civil claims allowed regarding infringements of environmental law?

Certain environmental statutes (eg, the US Clean Air Act (CAA), Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA)) contain 'citizen suit' provisions authorising non-governmental entities to sue third parties for injunctive relief for violations. A private party claiming injury from hazardous activities also may seek damages or injunctive relief in a tort action. No contractual relationship among the private parties is necessary, but contracts can create obligations for compliance with environmental laws. The Administrative Procedure Act also generally enables citizen plaintiffs to file civil lawsuits challenging final agency actions, or omissions in some circumstances, as arbitrary and capricious or otherwise for failure to comply with procedural or substantive requirements of other laws.

Defences and indemnities

30 What defences or indemnities are available?

In civil cases, potential defences frequently include:

- statutes of limitations (up to five years is common);
- ambiguity of statutory or regulatory language;
- compliance with a valid permit;
- factual defences; and
- limited statutory defences.

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In criminal cases, additional defences often may include:

- lack of knowledge;
- the government's failure to meet its heightened burden of proof; and
- other constitutional arguments unique to criminal cases (eg, lack of fair notice or void for vagueness).

A liable party could have indemnity rights against other parties or be a party to contracts with other parties under which the violator in turn may seek recovery, but such indemnities do not shield the violator from liability to the government. In Superfund litigation, in which multiple parties can be liable, courts have generally held that liability is strict and joint and several (subject to potential 'divisibility' defences).

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Routine environmental violations generally do not create officer and director liability. However, some federal environmental statutes, including the CAA, specifically state that an 'operator' or 'responsible corporate officer' can include 'any person who is senior management personnel or a corporate officer.' In addition, a number of reports submitted to the US Environmental Protection Agency and state agencies are required to include formal certifications (under oath) with regard to the accuracy of the information contained therein, which can provide the basis for claims against corporate officers.

More often, various theories under laws governing the internal governance of corporations and other business enterprises can support personal liability of corporate directors and officers under environmental and other public health laws – for example:

- the corporate veil is pierced;
- the director or officer personally participated in the improper activity; or
- the director or officer personally exercised substantial control and supervision over the activity in question.

US law generally does not permit liability based only on the corporate position or job title of director or officer. However, federal prosecutors can rely on a range of surrogates to prove the executive's knowledge. Therefore, criminal charges can be pursued when the directors or officers:

- are personally aware of, or involved in, the commission of a crime;
- aid and abet a crime;
- fail to prevent the commission of a crime by others within the corporation by either turning 'wilfully blind' or negligently supervising the conduct of those subject to their control; or
- fail to implement preventive measures to ensure that violations do not occur.

Directors' and officers' liability insurance and corporate indemnification can mitigate such liability.

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Appeal process

32 What is the appeal process from trials?

In the federal courts, a judgment from a trial-level federal district court is directly appealable to one of 12 federal circuit courts of appeals. From a circuit court of appeals, a party may petition the US Supreme Court to hear an appeal, but the Supreme Court's jurisdiction is discretionary and rarely exercised.

Each of the 50 states has its own court system, but generally there is a right of review from the trial level to an intermediate appellate court and then to the state's highest court. In many states, the highest court's jurisdiction is discretionary. State court systems vary as to the possible levels of appeal, but there are typically two or three levels of courts (although the jurisdiction of some courts of appeal may be discretionary).

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 Is your country a contracting state to any international environmental treaties, or similar agreements?

Yes. For example, regionally, the United States and Canada have a bilateral Air Quality Agreement. The United States is also party to the North American Agreement on Environmental Cooperation and the North American Free Trade Agreement and its side agreements, which have environmental aspects.

Multilaterally, the United States is party to, among other agreements: the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora; and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. The State Department maintains a complete list of international agreements to which the United States is party. The United States is not a party to a number of other multilateral environmental agreements, generally for lack of certain domestic authority for which new legislation would be required before the United States could join, including: the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989; the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998; and the Stockholm Convention on Persistent Organic Pollutants 2001.

International treaties and regulatory policy

34 To what extent is regulatory policy affected by these treaties?

With few exceptions, treaties are generally not given direct effect in US law. The United States has generally implemented its treaty obligations under multinational environmental agreements through national statutes and regulations. In some cases, this domestic authority has pre-dated the US international obligations and US law and policy make no

direct reference to treaties. In other cases, however, the United States has enacted new legislation expressly to satisfy international obligations, and US policy under such laws is closely keyed to the developments under international agreements (eg, regulatory policy on ozone-depleting substances and the Montreal Protocol). As a general matter, federal agencies that are responsible for developing, implementing and enforcing US environmental regulatory policy are conscious of US obligations under international agreements, as well as of developments under agreements to which the United States is not yet a party.

UPDATE AND TRENDS

Key developments of the past year

35 Are there any emerging trends or hot topics in environment law in your jurisdiction?

The election of President Biden in November 2020 and unified Democratic control of the Executive and Congress signalled a sea change in environmental law in the United States, just as the Trump administration had signalled a different sea change four years earlier. President Biden's campaign articulated a particularly strong commitment to the issues of climate change and environmental justice. Considering the divided Congress as of 2023 due to Republicans narrowly controlling the House of Representatives, the Biden administration is likely to continue pursuing bipartisan solutions on infrastructure, energy and other areas while also prioritising job creation and new economic opportunities.

The divided Congress is likely to deter substantial changes in core environmental laws. However, Congress has recently passed significant legislation advancing infrastructure and associated environmental permitting and reviews. Enacted on 15 November 2021, the Bipartisan Infrastructure Law creates new programmes and funding addressing a range of topics related to environment, energy and climate policy, including codification of environmental streamlining initiatives. The Inflation Reduction Act, signed by President Biden in August 2022, charts a new course in US energy and climate policy. The Fiscal Responsibility Act, signed by President Biden in June 2023, is an example of legislation that required the Biden administration to compromise on a package of environmental reforms in order to raise the nation's debt ceiling and avoid a government default, and resulted in the first changes to the National Environmental Policy Act (NEPA) statute in 50 years.

On the regulatory side, the Biden administration has moved quickly to reverse the overall deregulatory agenda of the Trump administration. On 20 January 2021, President Biden issued the 'Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis' (EO 13990). In addition to setting out the Biden administration's policy priorities, EO 13990 targeted specific policies of the Trump administration. Furthermore, EO 13990 directs executive agencies to evaluate all regulations, orders and guidance documents issued under the Trump administration and consider suspending, revising or rescinding prior actions that are inconsistent with the Biden administration's agenda. As discussed above, the Biden administration acted to reinstate the pre-Trump-era Endangered Species Act (ESA), NEPA and other regulations to better align the regulations with Biden administration policies and priorities. In April 2023, the Fifth Circuit Court of Appeals dismissed multiple Republican-led states' challenge to EO 13990 and vacated a

2022 preliminary injunction against the Biden administration for using interim estimates of the social costs of greenhouse gas emissions because the states lacked standing.

Much of the Biden administration's early effort in the environmental sphere involves addressing climate change. President Biden clearly articulated his expectation that all agencies will contribute towards the administration's effort to address severe climate impacts affecting communities across the United States. On 27 January 2021, President Biden issued the 'Executive Order on Tackling the Climate Crisis at Home and Abroad' (EO 14008). Importantly, EO 14008 established a National Climate Task Force, which includes every cabinet agency and additional non-cabinet agencies with authority over environmental or scientific matters. The National Climate Task Force will greatly facilitate the deployment of a 'whole-of-government' approach to combating the climate crisis. On the international front, President Biden recommitted the United States to the Paris Climate Agreement, which aims to limit the global temperature increase to 2 °C above preindustrial levels.

To achieve its ambitious climate change goals, the Biden administration has emphasised renewable energy. In addition to establishing a National Climate Task Force, EO 14008 set forth several substantive energy goals, including achieving net greenhouse gas neutrality for the electricity sector by 2035, doubling offshore wind production by 2035, and replacing federal state, local and tribal vehicle fleets with non-emitting vehicles. In April 2021, President Biden announced a new target, which is for the United States to achieve a 50 per cent reduction from 2005 levels in economy-wide net greenhouse gas pollution by 2030. To attain the energy goals, EO 14008 instructs relevant agencies to identify changes in siting and permitting processes that will facilitate production of renewable energy on public lands and waters. The Biden administration also continues to foster accelerated development of renewable energy and other preferred projects, while at the same time rolling back Trump administration steps to more broadly reduce project environmental review and permitting time frames and paperwork. In August 2022, a federal district courtpermanently enjoined implementation of EO 14008's pause of federal oil and gas lease sales.

The Biden administration has also taken a series of actions to prioritise environmental justice issues. EO 14008 established the White House Environmental Justice Advisory Council and the White House Environmental Justice Interagency Council, which will work together to develop a strategy to address current and historic environmental injustice. For example, the White House Environmental Justice Advisory Council released a report outlining recommendations to centre environmental justice in national policies and advance President Biden's environmental justice commitment. In addition, there will be an increase in environmental justice monitoring and enforcement through new or strengthened offices at the Environmental Protection Agency, the Department of Justice and the Department of Health and Human Services. In April 2023, President Biden issued the 'Executive Order on Revitalizing Our Nation's Commitment to Environmental Justice for All' (EO 14096) to build upon previous executive orders advancing environmental justice. Specifically, EO 14096 focuses on implementing environmental justice across the entire federal government.

At the same time, the judicial branch of government continues to wield significant influence and power over environmental and climate policy. The many regulatory efforts and policy reversals have triggered significant amounts of litigation across the country, particularly under the Administrative Procedure Act. In several instances, ongoing challenges to Obama or Trump administration rules have been mooted or stayed to accommodate new litigation

on superseding Trump or Biden administration regulatory actions. In some cases where new actions were struck down in court, the original challenges subsequently resumed. Other cases seek broad relief from industry for climate change impacts under common law theories. These cases will continue for the foreseeable future.

The Supreme Court and other federal courts have also increasingly scrutinised federal agency actions in the environmental arena. In particular, the Supreme Court's 30 June 2022 decision in *West Virginia v EPA* narrowed the Biden Administration's ability to meet its environmental and climate goals by prohibiting the Environmental Protection Agency (EPA) from mandating generation-shifting (from coal-fired power to renewable energy generation) measures under the existing CAA. In doing so, the Supreme Court relied upon a 'major questions' doctrine that could form the basis for further challenges to environment-related actions by agencies. In addition, the Supreme Court's 25 May 2023 decision in *Sackett v EPA* narrowed the scope of federal jurisdiction over wetlands under the CWA by requiring wetlands to have a 'continuous surface connection to bodies that are waters of the United States in their own right.' The Supreme Court is presently considering whether to amend the basic '*Chevron*' standard of deference to federal agencies in reviewing challenges to their actions. The outcome of upcoming environmental and administrative law cases will further erode or enable the ability of federal agencies to pursue environmental and climate objectives.

In reaction to the above federal environmental law developments, and those that can be expected in the future, additional environmental statutory and regulatory protection, as well as environmental enforcement, can be expected at the state and local levels, subject to their budgeting constraints. In addition, increased numbers of citizen suits by non-environmental and public health organisations will continue to be filed.

Other hot topics in US environment law include but are not limited to regulation of plastics, PFAS and other chemicals, mobile source emissions, protected species, wetlands, natural gas pipelines and building hookups, and environmental reviews. For example, in early 2023, EPA took several steps toward regulating PFAS, such as issuing new guidance on effluent limitations, proposing levels for safe drinking water and giving notice of a proposed rule-making that would PFAS to the list of hazardous substances covered by Superfund. Certain types of projects, including pipelines and other large-scale infrastructure, also are frequent targets for litigation.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

The EU is a party to the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement, the Kyoto Protocol, the Vienna Convention for the Protection of the Ozone Layer, and the Montreal Protocol.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

The EU actively participates in the elaboration, ratification and implementation of their multilateral environmental agreements (including the UNFCCC, the Paris Agreement and the Kyoto Protocol).

In response to the Kyoto Protocol, the European Commission (the Commission) established the European Climate Change Programme (ECCP), to determine policies to ensure that the EU meets its target for reducing emissions under the Kyoto Protocol as well as Regulation (EU) 2018/841 (the LULUCF Regulation), in which its commitment under the Kyoto Protocol for the land use, land-use change and forestry sector to have no net emissions is enshrined.

Furthermore, the EU is committed to ensuring the successful implementation of the Paris Agreement. This is reflected (inter alia) in the European Green Deal, which aims to achieve no net greenhouse gas (GHG) emissions by 2050, Regulation (EU) 2021/1119 (the European Climate Law) (enshrining the 2050 climate-neutrality objective into EU law) and the 2030 Climate Target Plan (providing for a further reduction of net GHG emissions by at least 55 per cent by 2030).It also includes the Fit for 55-package, which entails a set of proposals to revise and update existing EU legislation and to put in place new initiatives with the aim of ensuring that EU policies are aligned with the aforementioned climate goals. In this context, the (revised) EU Emissions Trading System (EU ETS) and the (newly adopted) Carbon Border Adjustment Mechanism (CBAM) are essential instruments for the EU to reduce its GHG emissions.

The EU is also promoting global action through the UNFCCC, other international fora (such as the Intergovernmental Panel on Climate Change (IPCC), G8 and G20, the Major Economies Forum on Energy and Climate, etc) as well as through bilateral arrangements with other countries or regions.

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Main national regulatory policies

3 | Outline recent government policy on climate matters.

The Commission wants the EU to play a leading role in implementing the Paris Agreement. In this regard, the Commission presented the European Green Deal, where member states agreed that the EU should eventually become climate neutral by 2050. The European Green Deal covers all sectors of the economy. Combating climate change is (inter alia) to be achieved by deploying more renewable energy.

The main initiatives under the European Green Deal include (1) the European Climate Law, (2) the European Climate Pact to engage citizens and all parts of society in climate action, (3) the 2030 Climate Target Plan (see above) (4) the new EU Strategy on Climate Adaptation to make Europe a climate-resilient society by 2050, fully adapted to the unavoidable impacts of climate change and (5) the revision of Directive (EC) 2003/96 (the Energy Taxation Directive) to align taxation of energy products and electricity with EU energy and climate policies.

Furthermore, the EU presented the Fit for 55-package, containing a set of proposals to revise existing EU legislation and to enact new initiatives to ensure that EU policies are aligned with its climate goals, which include: (1) a revision of the EU ETS (Directive (EU) 2023/959, Directive (EU) 2023/958, Regulation (EU) 2023/957, Regulation (EU) 2023/955, and Decision (EU) 2023/852), (2) the establishment of the CBAM (Regulation (EU) 2023/956), (3) a revision of the LULUCF Regulation (Regulation (EU) 2023/839), (4) setting of emission reduction targets for cars and vans by 2030 (Regulation (EU) 2023/851), (5) the reduction of methane in the energy sector (Proposal for a Regulation on methane emissions reduction in the energy sector), (6) the reduction of aircraft emissions (Proposal for a Regulation on ensuring a level playing field for sustainable air transport, ReFuelEU Aviation), (7) a revision of Directive (EU) 2018/2001 (Renewable Energy Directive or RED) (Proposal for a Directive amending Directive (EU) 2018/2001, Directive 2010/31/EU and Directive 2012/27/EU) and (8) a revision of Directive 2012/27/EU (Energy Efficiency Directive) (Proposal for a Directive amending Directive (EU) 2018/2001, Directive 2010/31/EU and Directive 2012/27/EU).

Building on the Fit for 55-package and completing the actions on energy security of supply and storage, the Commission also wants to reform the EU's energy system, through energy savings, diversification of energy supplies, and accelerated roll-out of renewable energy to replace fossil fuels in homes, industry and power generation. In this regard, the Commission presented the REPowerEU Plan. It proposes, among others, to increase the target for renewable energy in RED to 45 per cent by 2030. This has been translated, among others, into the Proposal for a Directive amending Directive (EU) 2018/2001, Directive 2010/31/EU and Directive 2012/27/EU. On 30 March 2023, the Parliament and the Council reached a provisional political agreement on the revision of RED, agreeing to raise the share of renewables in the EU's overall energy consumption to 42.5 per cent by 2030.

On 1 February 2023, the Commission presented the Green Deal Industrial Plan to enhance the competitiveness of EU's net-zero industry and support the fast transition to climate neutrality. The Plan complements ongoing efforts under the European Green Deal and REPowerEU, and is based on four pillars: a predictable and simplified regulatory environment, speeding up access to finance, enhancing skills and open trade for resilient supply chains. The Commission presented a number of legislative proposals to implement the first

pillar: (1) the Net-Zero Industry Act, (2) the Critical Raw Materials Act and (3) the Electricity Market Design Revision Act.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The main laws and regulations are as follows:

- Regulation (EU) 2021/1119 (European Climate Law), aiming to reduce GHG emissions by 55 per cent in 2030 to achieve the objective of becoming climate neutral by 2050;
- Directive 2003/87/EC (the EU ETS), setting out the framework for the Emissions Trading System;
- Regulation (EU) 2018/842 (the Effort Sharing Regulation), containing binding annual GHG emission targets for each member state for the period of 2021-2030, based on the principles of fairness, cost-effectiveness and environmental integrity;
- Regulation (EU) 2023/956 (CBAM), establishing a carbon border adjustment mechanism;
- Regulation (EU) 2018/841 (the LULUCF Regulation), containing the binding 'no debit' rule, meaning that each member state must ensure that accounted emissions from land use are entirely compensated by an equivalent accounted removal of CO2 from the atmosphere through action in the sector;
- Regulation (EU) 2023/1115 (the Deforestation Regulation) aiming at tackling deforestation and forest degradation driven by the EU as well as climate change and biodiversity loss;
- Directive 2012/27/EU (Energy Efficiency Directive), as amended by Directive (EU) 2018/2002, setting requirements for achieving the EU's 2020 and 2030 energy efficiency targets. On 10 March 2023, the Parliament and the Council reached a provisional political agreement on the revision of the Energy Efficiency Directive;
- Directive (EU) 2018/2001 (Renewable Energy Directive) (RED), establishing a common framework for the promotion of energy from renewable sources and setting a binding target of (currently) 32 per cent for the overall share of energy from renewable sources in the EU's gross final consumption of energy by 2030. On 30 March 2023, the Parliament and the Council reached a provisional political agreement on the revision of RED;
- Directive 2010/75/EU (Industrial Emissions Directive), regulating pollutant emissions from industrial installations;
- Regulation (EC) 166/2006 (E-PRTR), setting the framework for reporting requirements of industrial facilities in the EU;
- Regulation (EU) 517/2014 (the F-gas Regulation), imposing limits on the amount of F-gases that can be sold in the EU, banning the use of F-gases in several new types of equipment and imposing requirements that prevent emissions from F-gases from existing equipment; and
- Regulation (EC) 1005/2009 (the Ozone Regulation), generally prohibiting the use of ozone-depleting substances (subject to exceptions).

On 25 April 2023, Parliament and Council reached a provisional agreement on the Proposal for a Regulation on ensuring a level playing field for sustainable air transport (RefuelEU Aviation rules), setting the minimum share of sustainable aviation fuels to be made available at EU airports, cutting emissions and ensuring that the EU becomes climate neutral by 2050.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

This is regulated on a member state level.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

According to publicly available figures from 2021, road transportation (28 per cent), followed by public electricity and heat production (27 per cent) and manufacturing industries and construction (17 per cent) emit the most GHG emissions. The ETS, CBAM and the Effort Sharing Regulation play a crucial role to reduce these emissions.

The EU ETS applies to emissions from installations carrying out the activities listed in its Annex I (such as installations in the power sector, manufacturing industry, aviation and maritime transportation) and GHGs listed in Annex II (CO_2, CH4, N_2O, HFCs, PFCs and SF6). The EU ETS limits the emissions by setting a cap on the total amount of certain GHGs those installations can emit. In 2023, the Commission adopted a revision of the EU ETS (Directive (EU) 2023/959, Directive (EU) 2023/958, Regulation (EU) 2023/957, Regulation (EU) 2023/955, and Decision (EU) 2023/852), which consists, inter alia, of the following: (1) a reduced cap and more ambitious linear reduction factor for GHGs, (2) revised rules for free allocation of allowances and the Market Stability Reserve, (3) extension of the EU ETS to maritime transport, (4) a separate new EU ETS for buildings and road transport, and (5) an increase of the Innovation and Modernisation Funds and new rules on use of EU ETS revenues. The EU ETS covers about 40 per cent of the EU's GHG emissions.

To complement the EU ETS, the EU adopted the CBAM in May 2023, which will enter into force on 1 January 2026 after a transitional phase. This mechanism addresses GHGs embedded in certain carbon-intensive goods when they are imported into the EU, to prevent carbon leakage, and is based on a system of carbon certificates (CBAM certificates). CBAM will gradually replace the free allocation of allowances to installations at risk of carbon leakage under the EU ETS.

The EU ETS is supplemented by the Effort Sharing Regulation. This Regulation applies in particular to GHGs originating from the following sectors: energy, industrial processes and product use, agriculture and waste, but excluding the emissions from the activities covered by the ETS. It confers binding annual emission targets for each member state from 2021 to 2030. In 2023, the Effort Sharing Regulation was revised to increase the national targets and set an EU-level GHG emission reduction target of 40 per cent by 2030, compared to 2005.

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National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

The Innovation Fund aims to fund a diverse project pipeline that achieves an optimal balance of a wide range of innovative technologies across all qualifying industries and member states, as well as Norway and Iceland. Between 2020 and 2030, the Innovation Fund will provide roughly €20 billion supporting the commercial demonstration of innovative low-carbon technologies, to bring to market industrial solutions to decarbonise Europe and support its transition to climate neutrality. In particular, the Innovation Fund focuses on highly innovative technologies and large-scale flagship projects in the EU that can result in significant emission reductions.

The LIFE Climate Change Mitigation and Adaptation Programme administers approximately €905 million used to develop and execute innovative solutions for climate challenges. It particularly supports the implementation of the European Green Deal. It is divided into four subcategories: 'Nature and biodiversity', 'Circular economy and quality of life', 'Climate change mitigation and adaptation' and 'Clean energy transition'.

The Modernisation Fund supports 10 lower-income EU member states in their transition to climate neutrality by helping to modernise their energy systems and improve energy efficiency. The total initial size of the Fund is 2 per cent of the ETS cap and is used to support investments in renewable energy, energy efficiency, energy storage, modernisation of energy networks (including district heating, pipelines and grids) and just transition in carbon-dependent regions.

On 10 May 2023, the EU established a Social Climate Fund, as part of the revision of the EU ETS (mentioned above). The Social Climate Fund provides up to €65 billion in funding between 2026 and 2032, benefitting households, micro-enterprises and transport users, which will be particularly affected by the inclusion of GHGs from fuels supplied to buildings, road transport and additional sectors within the scope of the EU ETS as from 2027, in particular households in energy poverty or households in transport poverty.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Regulation (EU) 2020/852 (the Taxonomy Regulation) establishes the basis for the EU taxonomy by setting out several overarching conditions that an economic activity must meet to qualify as environmentally sustainable. The EU taxonomy provides relevant definitions for which economic activities can be considered environmentally sustainable to enterprises, investors, and policymakers. As a result, it should provide investors with security,

shield private investors from greenwashing, assist businesses in becoming more climate-friendly, reduce market fragmentation, and assist in shifting investments to where they are most needed.

Directive 2003/96/EG (the Energy Taxation Directive) lays down structural rules and minimum excise duty rates for the taxation of energy products used as motor and heating fuel as well as electricity. In this regard, the Commission proposed a revision of the Energy Taxation Directive under the Fit for 55-package, which aims to (1) introduce a new structure of tax rates based on the energy content and environmental performance of the fuels and electricity and 2 broaden the taxable base by including more products in its scope and removing some of the current exemptions and reductions.

Furthermore, sustainability considerations have become key factors in assessing investment opportunities in the financial markets. In this framework, Regulation (EU) 2019/2088 (the Sustainable Finance Disclosure Regulation) essentially requires manufacturers of financial products and financial advisers to disclose information on sustainability with regard to the investment towards the end-investors. On a similar note, Directive (EU) 2014/95 (the NFRD) setting forth disclosure obligations for certain large companies on non-financial information, including environmental matters. The Commission has also published (non-binding) climate reporting guidelines for companies more generally. In addition, Directive (EU) 2022/2464 (the Corporate Sustainability Reporting Directive, CSRD) recently entered into force, which strengthens the rules on social and environmental information that companies subject to the CSRD must report.

In 2022, the Commission also proposed a Directive on Corporate Sustainability Due Diligence (CSDDD). This proposal introduces requirements for certain companies to identify, prevent, end, or mitigate the actual and potential impacts of their activities on (inter alia) the environment. In its current form, the CSDDD would require them to conduct due diligence not just on their own operations, but also on the activities of their subsidiaries and other entities in their value chains with which they have direct and indirect established business relationships.

Finally, the EU ETS creates a commercial market between operators of installations that are subject to the ETS for the trade of emission allowances. The EU also has a number of funding possibilities in the energy sector that promote projects that benefit the environment (eg, by reducing GHGs, using renewable energy and developing innovative solutions for clean energy

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The EU ETS, the CBAM and the Effort Sharing Regulation are most relevant for GHG reduction obligations.

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The EU ETS applies to emissions from the activities listed in its Annex I and GHGs listed in its Annex II. The ETS covers about 40 per cent of the EU's GHG emissions. The ETS limits emissions by setting a cap on the total amount of certain GHGs that can be emitted by installations. This cap is gradually dropped, ensuring that overall emissions are reduced. Within the EU ETS framework, operators of installations can buy or receive emissions allowances and are able to trade such allowances with other operators. The EU ETS is currently in Phase IV (2021-2030), meaning that the cap on the total amount of emissions is currently annually decreased at a rate of 2.2 per cent, and after the 2023 revision of the ETS by 4.3 per cent as from 2024 and by 4.4 per cent as from 2028.

In May 2023, the EU adopted the CBAM, which is based on a system of certificates to cover the embedded emissions in certain carbon-intensive products being imported into the EU. It will enter into force on 1 January 2026 after a transitional phase. In essence, EU importers (authorised as CBAM declarants) will need to buy carbon certificates (CBAM certificates), corresponding to the carbon price that would have been paid had those goods been produced under the EU's carbon pricing rules (ie, the weekly average auction price of ETS allowances) to import those goods. This mechanism will gradually replace the allocation of free allowances to installations at risk of carbon leakage under the ETS. Contrary to the ETS, CBAM is not intended to impose a cap on the number of CBAM certificates available to importers. However, as opposed to the EU ETS, CBAM is not intended to impose a cap on the number of CBAM certificates available to importers.

The EU's GHG emissions from activities that are not in scope of the EU ETS are mostly covered by the Effort Sharing Regulation, as revised in 2023.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

EU ETS

The EU ETS requires member states to introduce a GHG emissions permit system for operators of certain activities. In particular, member states must ensure that, from 1 January 2005, no installation carries out any activity listed in Annex I of the EU ETS resulting in emissions specified in relation to that activity unless its operator holds a permit issued by a (national) competent authority.

The application to the competent authority for a GHG emissions permit must include a description of the following: (1) the installation and its activities, (2) raw and auxiliary materials whose use is likely to result in emissions of the gases listed in Annex I, (3) the sources of emissions of gases and (4) the measures planned to monitor and report emissions.

Only if the competent authority is satisfied that the operator is capable of monitoring and reporting emissions, will it issue a GHG emissions permit. The operator is subject to a formal monitoring plan.

CBAM

As of 1 January 2026, importers of certain carbon-intensive goods will have to register as authorised CBAM declarants and start purchasing sufficient emission allowances (CBAM certificates) for imported GHG emissions. Only registered CBAM declarants will be allowed to import these goods. Importers established in a member state shall, prior to importing goods, need to apply for the status of authorised CBAM declarant via the CBAM registry. The competent authority will conduct a consultation procedure on this application for an authorisation.

Furthermore, the importers will need to submit an annual CBAM declaration, in which specific data must be included, including verified embedded emissions. The CBAM declarant may claim in the CBAM declaration a reduction in the number of certificates to be surrendered, to take into account the carbon price (effectively) paid in the country of origin for the declared embedded emissions. The first annual CBAM declaration, covering the 2026 calendar year, is due by 31 May 2027.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

At the level of private operators

The operators of installations covered by the EU ETS must have an approved monitoring plan for monitoring and annual reporting of emissions, which is included in the GHG emissions permit. In addition, they must surrender enough allowances to cover their annual emissions. In this regard, operators must submit an emissions report, which is verified by an accredited verifier by 31 March of the following year.

At the level of the member states

In accordance with Regulation 2009/1999/EU (the Governance Regulation), member states must develop long-term, integrated national energy and climate plans. The first of these plans had to be drafted by the end of 2019, to foresee that member state's energy needs and developments for the next 10 years. The implementation of these plans is subject to biennial reports to the Commission. As such, member states are required to monitor their emissions and report on their emissions in line with the EU's internal reporting rules. This reporting covers, among others, seven GHGs from all sectors – referred to as the 'greenhouse gas inventory'.

In addition, the member states have strong monitoring and annual reporting obligations under Decision 406/2009/EC (the Effort Sharing Decision) implementing the Effort Sharing Regulation, as revised in 2023.

CBAM

Under the CBAM, during the transitional period (2023/2025), importers' obligations are limited to reporting obligations. Each importer, having imported CBAM goods during a given quarter of a calendar year must, for that quarter, submit a CBAM report containing

information on the imported quantity, the direct and indirect GHG emissions contained therein (initially indirect emissions only for cement, electric power and fertiliser), as well as carbon pricing already paid in the country of production. The first quarterly report is due by 31 January 2024.

As of 1 January 2026, importers must register as authorised CBAM declarants and start purchasing sufficient emission allowances (CBAM certificates) for imported GHG emissions. The importers will need to submit an annual CBAM declaration and ensure that the total embedded emissions declared are duly verified. The first annual CBAM declaration, covering the 2026 calendar year, is due by 31 May 2027.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

At private operator level

The EU ETS provides for a GHG emission allowance regime. Within the cap, operators obtain or acquire emission allowances, which they can trade as needed. Each allowance entitles the holder the right to emit one tonne of CO_2, or the equivalent amount of other powerful GHGs. The allocation of allowances is done either by free allocation or through auctioning. Allowances are auctioned three times a week via the auction platform EEX. Companies meeting the auction platform's criteria are eligible to participate in the auction. Bidders in joint European auctions include investors, banks, and credit organisations.

In 2023, the Commission adopted a revision of the EU ETS, which consists, inter alia, of revised rules for free allocation of allowances (to be further specified in delegated regulations), aiming to gradually replace the allocation of free allowances to installations at risk of carbon leakage by the CBAM (as below).

As of 1 January 2026, importers of certain carbon-intensive goods will have to register as authorised CBAM declarants and start purchasing sufficient emission allowances (CBAM certificates) for imported GHG emissions, which will be priced equivalent to the cost of carbon under the ETS and will gradually replace the free allocation of allowances to installations at risk of carbon leakage. Contrary to the ETS, CBAM is not intended to impose a cap on the number of CBAM certificates available to importers.

At the level of the member states

The Effort Sharing Regulation, as revised in 2023, provides for annual emission allocations to the member states. The national targets are based on member states' relative wealth, measured by GDP per capita.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

EU ETS

GHG emissions allowances are registered and administered at EU level in the Union Registry. The Union Registry is managed by a central administrator and is used by member states to ensure accurate allowance accounting and transaction recording.

The Registry keeps track of, inter alia, accounts of companies or individuals holding emission allowances, transfers of allowances (transactions) and verified emissions, where each company or individual must have surrendered enough allowances to cover all its verified emissions.

In order to participate in the ETS, companies or individuals must open an account in the Registry. To open an account, they must submit a request to the national administrator of their member state, which will collect and review all supporting documentation. After opening the account, they can access their accounts and transfer emission allowances to other accounts.

CBAM

As of 1 January 2026, importers of certain carbon-intensive goods will have to register as authorised CBAM declarants in the CBAM registry. This registry is a standardised electronic database, containing data regarding the CBAM certificates of authorised CBAM declarants. It will contain accounts with information about each authorised CBAM declarant, including the identification number, sale price, date of sale and date of surrender, repurchase or cancellation of CBAM certificates.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

EU ETS

Auctioning forms the EU ETS's default method for allocating allowances. At the beginning of the year, operators either are (1) allocated free allowances or (2) must buy allowances through an auction procedure to cover their emissions for the coming year. A limited number of free allowances is provided each year.

In 2023, the Commission adopted a revision of the EU ETS, which consists, inter alia, of revised rules for free allocation of allowances, aiming to gradually phase out free allowances for installations at risk of carbon leakage (to be replaced by the CBAM) (Directive (EU) 2023/959).The revision of the currently applicable benchmarks and benchmark values

(currently enshrined in Commission Delegated Regulation 2019/331 for the benchmarks and Commission Implementing Regulation 2021/447 for the benchmark values) is ongoing.

All allowances are issued by the central administrator, who creates them in the Union Registry on the EU total quantity account. The Union Registry is thereafter in charge of holding and surrendering the allowances. The allowances might be surrendered at any time throughout the trading period.

When an operator's emissions exceed the amount of allowances it possesses, or operators have emitted fewer GHGs than the number of allowances they hold, they can trade these allowances with other market players. Once trades are confirmed, instructions are sent to the Union Registry for the physical transfer to occur. In any case, by 30 April each year at the latest, the operator of each installation must surrender a number of allowances equal to the total emissions from that installation during the preceding calendar year.

Last, operators can also choose to voluntarily cancel allowances, which means that the allowances will be permanently removed from circulation and deleted from the Union Registry, without using them for compliance.

CBAM

As of 1 January 2026, authorised CBAM declarants will need to purchase sufficient emission allowances (CBAM certificates) for imported GHG emissions from certain carbon-intensive goods. Each member state must sell CBAM certificates on a common central platform to authorised CBAM declarants established in that member state.

By 31 May of each year as of 2027, the authorised CBAM declarant must surrender via the CBAM registry a number of CBAM certificates that corresponds to the embedded emissions that they declared and were verified for the calendar year preceding the surrender. The authorised CBAM declarant must ensure that the required number of certificates is available on its account in the CBAM registry. As opposed to the ETS, CBAM is not intended to impose a cap on the number of CBAM certificates available to importers.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

EU ETS

The EU ETS limits GHG emissions by setting a cap on the total amount of certain GHGs that can be emitted by installations. This cap is gradually dropped, ensuring that overall emissions are reduced. Within the cap, operators receive or acquire emission allowances, which they can trade as needed. In 2023, the Commission adopted a revision of the EU ETS, which aims, inter alia, to gradually phase out the allocation of free allowances. After the phase-out, installations at risk of carbon leakage will be able to rely on the CBAM (as below).

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Each allowance entitles the holder the right to emit one tonne of CO_2, or the equivalent amount of other powerful GHGs. When, an operator's emissions exceed the amount of allowances it possesses, or operators have emitted fewer GHG emissions than the number of allowances they hold, allowances can be traded between the different operators.

CBAM

For importers to import certain carbon-intensive goods into the EU, they will need to register as authorised CBAM declarants and purchase sufficient allowances (CBAM certificates) for imported GHG emissions, which will be priced equivalent to the cost of carbon under the ETS. Contrary to the ETS, CBAM is not intended to impose a cap on the number of CBAM certificates available to importers.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

There are no standard agreements on GHG emissions trading used in the EU. Internationally, however, there exist several standard forms that can be used, such as the IETA Emissions Trading Master Agreement (version 4).

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

The EU produces energy from a variety of sources, including fossil fuels such as gas, coal and crude oil), nuclear energy, and renewable energy (such as biomass, hydro, solar and wind energy). According to publicly available figures from 2021, renewable energy (40.8 per cent) is the largest contributor to energy production in the EU, followed by nuclear energy (31.2 per cent), solid fossil fuels (15.2 per cent), natural gas (6.4 per cent), oil and petroleum products (3.4 per cent) and non-renewable waste (2.3 per cent). The share of renewables in electricity generation has more than doubled since 2004.

That same year, petroleum products (such as heating oil, petrol, and diesel fuel) accounted for 34.8 per cent of total energy consumption, followed by electricity (22.8 per cent), as well as direct use of renewables (for space heating or hot water production, eg, wood, solar thermal, geothermal, or biogas) (10 per cent), derived heat (such as district heat) (4 per cent), and solid fossil fuels (2 per cent).

Regarding renewable energy, Directive 2018/2001/EU (RED) forms the main instrument. RED establishes (1) a common framework for the promotion of renewable energy and (2) a binding EU target for the overall share of renewable energy in the EU's gross final energy consumption in 2030, namely 32 per cent of EU final energy consumption should come from renewable energy by 2030. In this regard, the Commission proposed a revision of RED, aiming to increase the current EU-level target of at least 32 per cent of renewable energy sources in the overall energy mix to at least 40 per cent by 2030. In 2022, the Commission also presented the REPowerEU Plan. It proposes, among others, to increase the target in RED to 45 per cent by 2030. On 30 March 2023, the Parliament and the Council reached a provisional political agreement on the revision of RED, agreeing to raise the share of renewables in the EU's overall energy consumption to 42.5 per cent by 2030.

Regarding energy efficiency, Directive 2012/27/EU (the Energy Efficiency Directive) sets a target of 32.5 per cent reduction in primary energy consumption at EU level by 2030, compared to the 2007 modelling projections of energy consumption for 2030. Additionally, the Energy Efficiency Directive requires Member States to achieve cumulative end-use energy savings equivalent to new savings each year from 1 January 2021 to 31 December 2030 of 0.8 per cent of annual final energy consumption, averaged over the most recent three-year period prior to 1 January 2019. In the REPowerEU Plan, the Commission proposed to raise the ambition further, whereby member states must achieve new savings each year of 1.5 per cent of final energy consumption from 2024 to 2030, up from the current level of 0.8 per cent. In the period 2021-2030, each member state also must develop a 10-year integrated national energy and climate plan, setting out how it plans to achieve its energy efficiency targets by 2030.

Furthermore, various pieces of legislation require and incentivize energy savings in energy and industrial installations. Directive 2010/75/EU (Industrial Emissions Directive (IED)), for example, requires operators to gradually implement best available techniques (BATs) and correspondingly upgrade and modernise their installations, including energy efficiency measures. The IED is closely linked with the European Pollutant Release and Transfer Register (E-PRTR), in which emission data (on pollutant releases and transfers) reported by member states are made accessible in a public register. The Commission adopted proposals in 2022 to revise the IED and the E-PRTR.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Apart from the European Climate Law, several specific pieces of legislation on GHG emissions exist, such as the F-gas Regulation (on emissions of fluorinated GHGs), the LULUCF Regulation (on emissions from land use, land use change and forestry).

Furthermore, under Fit for 55, the Commission is taking action to meet and tighten emission reduction targets. Among other initiatives, the Commission aims to set emission reduction targets for cars and vans (Regulation (EU) 2023/851), reduce methane in the energy sector (Proposal for a Regulation on methane emissions reduction in the energy sector), and reduce aircraft (Proposal for a Regulation on ensuring a level playing field for sustainable air transport) and shipping (Proposal for a Regulation on the use of renewable and low-carbon

fuels in maritime transport) emissions. In 2023, the Parliament and the Council reached provisional political agreements on the reduction of aircraft (ReFuelEU Aviation) and shipping (Fuel EU Maritime) emissions. Fit for 55 also proposed a new self-standing ETS for applicable to distributors of fuels to buildings, road transport and additional sectors (ETS II), which is designed to start operating as from 2027 (Directive (EU) 2023/959). Moreover, the revision of Directive 2010/31/EU (the Energy Performance of Buildings Directive) includes the objective to transform all new buildings into zero-emission buildings by 2030, and all existing buildings by 2050 (Proposal for a Directive on the energy performance of buildings).

On 10 February 2023, the Commission adopted a series of delegated acts relevant to the classification of a fuel as a 'renewable fuel of non-biological origin' (RFNBO) under RED, which is relevant for the ability for the use of such fuels to be counted towards renewable energy targets, namely, aiming to reach the current target of at least 32 per cent of renewable energy sources in the overall EU energy mix (which, following the provisional political agreement of 30 March 2023 between the Parliament and the Council, and if adopted, will be raised to 42.5 per cent by 2030). Meeting these criteria is fundamental for renewable hydrogen projects developed in the EU and for carrying out the EU's hydrogen strategy adopted in 2020. In addition, the Hydrogen and Gas Markets Decarbonisation Package, which consists of a proposal for a regulation and for a directive, will aim to create a regulatory framework for dedicated hydrogen infrastructure and markets, as well as integrated network planning and firmly creates a space for the development hydrogen projects within the EU.

On 12 July 2023, the Commission also adopted the Greening Freight Transport Package in the context of the Green Deal, to make freight transport (by road and rail) more efficient and more sustainable. The Package includes (inter alia) a proposed Regulation on the accounting of GHG emissions of transport services and will introduce a common methodology for calculating GHG emissions from transport services, based on recently adopted international ISO/CEN standards.

In 2023, the EU also adopted the Deforestation Regulation, which (indirectly) will also contribute to reducing deforestation and combating climate change.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Directive 2018/2001/EU (the Renewable Energy Directive (RED)) establishes a binding EU target for the overall share of renewable energy in the EU's gross final energy consumption in 2030: 32 per cent of EU final energy consumption should come from renewable energy sources by 2030. The Commission has proposed a revision of RED, aiming to increase the current target of at least 32 per cent of renewable energy sources in the overall EU energy mix to at least 40 per cent by 2030. It also aims to introduce or enhance sectorial sub-targets

and measures across sectors. In 2022, the Commission presented the REPowerEU Plan. It proposes, among others, to increase the target in the RED to 45 per cent by 2030. On 30 March 2023, the Parliament and the Council reached a provisional political agreement on the revision of RED, agreeing to raise the share of renewables in the EU's overall energy consumption to 42.5 per cent by 2030.

Moreover, in 2023, the Commission presented the Green Deal Industrial Plan to enhance the competitiveness of the EU's net-zero industry and support a fast transition to climate neutrality. The Plan includes the Net-Zero Industry Act (NZIA), which supports an ambitious scaling up in the manufacturing of key net-zero technologies. It recommends to (1) define a closed list of 'net-zero technologies', which will benefit from, for example, streamlined permitting procedures and (2) require oil and gas producers to contribute to an EU carbon storage objective.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Regarding onshore wind energy, RED is the main instrument. Permitting requirements and government incentive schemes for wind turbines are generally regulated on a member state level. However, RED (as well as the current ongoing revision) includes several provisions that simplify permitting processes.

Apart from RED, regarding offshore wind energy, the Commission published an EU Strategy on Offshore Renewable Energy, which proposes concrete ways forward to support the long-term sustainable development of this sector (setting targets for an installed capacity of at least 60 GW of offshore wind by 2030, and 300 GW by 2050).

In 2022, the Commission also revised the Regulation on Trans-European Energy Networks (TEN-E), which lays down rules for cross-border energy infrastructure. TEN-E now includes new infrastructure categories for hybrid offshore grids and radial lines, as well as permitting provisions to accelerate the scale-up of offshore grids. In addition, TEN-E supports regional cooperation between member states to define non-binding regional goals for offshore renewable generation to be deployed within each sea basin. These regional goals will feed into the development of strategic integrated offshore network development plans. In 2022, the Commission also proposed RePowerEU, which, inter alia, aims to speed up permit-granting procedures for renewable energy projects (including relating to wind energy). The year thereafter, the Commission presented the Net-Zero Industry Act, which covers net zero technologies, such as wind turbines.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Regarding solar energy, RED is the main instrument. Permitting requirements and government incentive schemes for solar energy plants are generally regulated on a national level. However, RED (as well as its proposed revision) and RePowerEU include several provisions that (will further) simplify permitting processes.

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As part of REPowerEU, the Commission adopted an EU Solar Energy Strategy, which identifies challenges in the solar energy sector and outlines initiatives to accelerate the deployment of solar technologies. In 2023, the Commission presented the Net-Zero Industry Act (NZIA), which covers (inter alia) increased support for net zero technologies, such as solar photovoltaic technologies.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Regarding hydropower, geothermal, wave and tidal energy, RED is the main instrument. Permitting requirements and government incentive schemes for the production of this energy are generally regulated on a national level. However, RED (as well as its proposed revision) and RePower EU include several provisions that (will further) simplify permitting processes.

The Commission has also issued an action plan to support the development of ocean energy, which includes wave and tidal energy, as well as set cost-reduction targets for ocean energy technologies for the next decade in the Strategic Energy Technology Plan (SET Plan).

In 2023, the Commission presented the Net-Zero Industry Act (NZIA), which covers (inter alia) increased support for net zero technologies, such as heat pumps and geothermal energy.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Regarding waste-to-energy, two Directives are relevant: RED and the EU ETS (revision recently adopted).

RED states that when promoting renewable energy initiatives, member states must take into account the waste hierarchy and circular economy principles, with waste prevention and recycling as top priorities. According to RED, no support shall be given for renewable energy production from waste incineration, unless the separate collection obligations under Directive 2009/98/EC (the Waste Framework Directive) are met.

Under the EU ETS, a GHG emissions permit issued by a competent authority is required for any installation that carries out any activity listed in Annex I to the ETS resulting in emissions specified in relation to that activity. Therefore, waste energy plants must hold a permit before carrying out any activity, when it concerns combustion installations with a rated thermal input exceeding 20 MW.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Regarding biofuels and biomass, RED is the main instrument. RED establishes binding criteria for the production of biofuels and biomass to improve sustainability and to be effective at reducing GHG emissions (sustainability criteria). Energy from biofuels and biomass will only be taken into account for the EU target and the renewable energy shares of member states as well as for assessing compliance with renewable energy obligations if these sustainability criteria are met. Among other regulations, Delegated Regulation (EU) 2019/807 (Delegated Regulation on Indirect Land-Use Change) further implements RED, addressing the issue of indirect land use change.

Permitting requirements and government incentive schemes for the production of energy from biofuels and biomass are generally regulated on a national level. However, RED (as well as its proposed revision) and RePowerEU include several provisions that (will further) simplify permitting processes.

Furthermore, non-binding criteria for biomass have been in place since 2010. The Commission issued non-binding recommendations in this regard. At the end of 2022, the Commission published Implementing Regulation (EU) 2022/2448 on establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass.

In 2023, the Commission presented the Fit for 55, which includes, inter alia, ReFuelEU Aviation and FuelEU Maritime, aiming to increase the use of sustainable fuels (including biofuels) by aircraft and ships.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Directive 2009/31/EC (the CCS Directive) establishes a framework for the environmentally safe geological storage of CO_2 to contribute to the fight against climate change. According to the CCS Directive, the purpose of environmentally safe geological storage of CO_2 is permanent containment of CO_2 in such a way as to prevent and, where this is not possible, eliminate as far as possible negative effects and any risk to the environment and human health.

Member states intending to allow geological storage of CO_2 in their territory assess the storage capacity available within their territory. Only if there is no significant risk of leakage or damage to human health or the environment, a geological formation can be selected as a storage site. In addition, member states must ensure that no storage site is operated without a storage permit.

Furthermore, the operation of the site must be closely monitored, with corrective measures implemented if leakage occurs. The CCS Directive also addresses closure and post-closure obligations and establishes criteria for transferring responsibility from the operator to the

member state. Finally, the operator must secure financial security before starting the CO_2 injection.

In 2022, the Commission adopted a proposal for an EU-wide voluntary framework to certify carbon removals, aiming to boost innovative carbon removal technologies, such as bioenergy with CCS or direct air CCS. The year thereafter, the Commission published a call for evidence and open public consultation on an industrial carbon management strategy and presented NZIA, which covers net-zero technologies, such as CCS.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

The main climate matters to be considered in M&A transactions are to be assessed on a case-by-case basis, and in light of domestic climate-related legislation. These range from verifying permits for activities that may have a climate-related impact and an evaluation of compliance with directly applicable EU regulations (eg, Directive 2003/87/EC (the EU ETS), to an assessment of sustainability risks to which the target company is exposed.

Increased investor focus with regard to sustainability may necessitate increased scrutiny in relation to sustainability efforts of the target company (even if not mandatory on the basis of legislation), and ESG-focused due diligence is gaining importance (eg, the obligations under the CSDDD and the Deforestation Regulation).

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

In 2021, the European Climate Law was adopted. It enshrines the EU's objective of becoming climate-neutral by 2050 in law and sets a binding target for reducing net GHG emissions (minus removals) by at least 55 per cent below 1990 levels by 2030. The Commission also adopted the Fit for 55-package, containing legislative proposals to make the EU's climate, energy, land-use, transport and taxation policies fit for reaching the binding target of the European Climate Law. The adoption of the revised ETS and the introduction of the CBAM will have a profound impact on addressing carbon leakage from within the EU. Furthermore, the potentially far-reaching consequences of the newly adopted Deforestation Regulation as well as the CSDDD (when adopted) within companies will have to be monitored. In addition, the Commission is working to create a harmonised voluntary certification framework for carbon removals that may impact companies' carbon offsetting strategies.

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Low carbon innovative fuels such as renewable hydrogen are hot on the agenda as well, with the Commission striving to support a range of innovative net-zero technologies with its NZIA act, the Hydrogen and Gas Markets Decarbonisation Package, the revision of RED and the REPowerEU plan. The Commission is also working on addressing emissions from fuel use in buildings by creating a self-standing ETS in that regard and revising the Energy Performance of Buildings Directive, reducing methane emissions, as well as increasing the efficiency of freight transport by road and rail to cut GHG emissions.

This will, without any doubt, affect EU's climate regulation in the foreseeable future.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

The entire United Nations Framework Convention on Climate Change, its Paris Agreement, the Kyoto Protocol and the European Union's climate change regulations apply in France through its membership of the EU. The EU officially ratified the Paris Agreement on 5 October 2016, allowing it to enter into force on 4 November 2016. Since then, the adoption of the green new deal and especially the new targets for 2030 of 55 per cent reduction of greenhouse gases (GHGs) (European climate law of 21 April 2021) have considerably strengthened the French obligations, given that France must declare its nationally determined contributions to the European Commission every year to verify the reduction targets but also energy efficiency and renewable energy. A new one was voted on on 22 August 2021 on fighting climate change and strengthening resilience to its effects. At the national level and in addition to the various major laws and regulations, the French policy to achieve the objectives set at international level is also implemented in France through the national low carbon strategy, a document adopted by the government detailing the measures taken to reduce GHG emissions in the country. The international policy objectives are also implemented in France through another major document, called the national strategy for adaptation to climate change.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

French regulatory policies are directly affected by international climate regulations, as the highest national administrative court (the Council of State (Conseil d'Etat)) has formally ruled that regulatory policies must be compatible with the GHG emission reduction targets set at the European level for 2030, failing which they will be declared illegal (CE, 1 July 2021, No. 427301, Grande-Synthe). On May 10, 2023, the Council of State, estimated in Decision No. 467982 that, while additional measures have been taken and reflect the government's desire to implement ist previous decision of 1 July 2021, there is still not a sufficiently credible guarantee that the trajectory for reducing greenhouse gas emissions can be effectively respected. This is why the Council of State has ordered the government to take new measures by 30 June 2024, and to send, as of 31 December 2024 a progress report detailing these measures and their effectiveness.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The latest and most notable French law on climate issues is Law No. 2021-1104 of 22 August 2021 on fighting climate change and strengthening resilience to its effects. The law is composed of 305 articles divided into eight titles and covers all statutes.

Recalling the Commission's commitment to

> *achieve the greenhouse gas emission reduction targets, as they will result in particular from the next revision of Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual reductions of greenhouse gas emissions by member states from 2021 to 2030 contributing to climate action, in order to comply with the commitments made under the Paris Agreement*

in article 1 of this law, the legislator wished to display from the outset its ambition to prepare the French law for the next revision of Regulation (EU) 2018/842 and its intention to organise, by 2030, a reduction in net greenhouse gas emissions of at least 55 per cent compared to 1990 in all sectors of the economy and throughout the European Union. A series of decrees implementing this law have been issued but, according to the Council of State, they do not make it possible to achieve the 40 per cent objective initially set, let alone the 55 per cent objective.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The main national climate laws and regulations in France are:

- Law No. 2015-992 of 17 August 2015 on the energy transition for green growth, aimed at enabling France to contribute more effectively to the fight against climate change and to strengthen its energy independence, while guaranteeing access to energy at competitive costs;
- Act No. 2019-1147 of 8 November 2019 on energy and climate, setting the goal of carbon neutrality by 2050; and
- Law No. 2021-1104 of 22 August 2021 on combating climate change and strengthening resilience to its effects, adopted to prepare French law for the upcoming revision of Regulation (EU) 2018/842.

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

In France, the main national regulatory authority responsible for climate regulation, implementation and administration is the Ministry of Energy Transition. The Minister of Ecological Transition prepares and implements the overall policy on combating climate change and adapting to its effects. In consultation with the Minister of Europe and Foreign Affairs, the

Minister of Ecological Transition is in charge of international relations on climate, leads negotiations, including European ones, and supervises the implementation of agreements reached. The new French government also has a general delegate to the Prime Minister in charge of ecological planning and covering the climate, energy, biodiversity, transport and agriculture sectors.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Energy consumption is the main source of GHG emissions in France (70 per cent of the total), followed by agriculture (16.7 per cent), industry (9.5 per cent) and waste (3.5 per cent). Energy consumption is mainly linked to transport (30 per cent), construction (17 per cent) and industry (10 per cent). Under the National Low Carbon Strategy, different reduction targets are set for each sector. The reduction targets can also apply to private parties, as each project subject to an environmental impact assessment must avoid, reduce or offset any GHGs associated with its project through specific measures.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

In France, the 'low carbon label' was created three years ago and aims to contribute to the achievement of France's climate objectives. It aims to encourage the emergence of voluntary projects to reduce GHG emissions and to support carbon sequestration in soils and biomass that go beyond regulations and standard practices.

Around the world, the French Development Agency (AFD) is setting up specific programs to help developing countries to fight against climate change. In Mexico, for example, AFD is currently conducting a 10-year, US$100 million financing programme for Mexican agriculture to develop more sustainable practices, as agriculture is responsible for 16 per cent of the country's GHG emissions.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Law No. 2021-1104 of 22 August 2021 on combating climate change and strengthening resilience to its effects adopted several measures to combat climate change in the commercial sector: an 'environmental label' was created to inform consumers about the impact, particularly on the climate, of products and services; advertising for fossil fuels will be banned in 2022; and advertising for the most polluting cars will be banned in 2028. In addition, the inclusion of climate impact in advertising is also becoming mandatory: the first environmental displays in 2022 will concern advertisements for cars and household appliances.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

According to article L100-4 of the Energy Code, France must meet the objectives of reducing greenhouse gas emissions by 40 per cent between 1990 and 2030, and achieving carbon neutrality by 2050 by reducing GHG emissions by a factor of greater than six between 1990 and 2050. Code provisions have not yet been amended to incorporate the 55 per cent by 2030 goal, but will need to be.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

For any new project that needs an environmental impact study, climate effects must be studied at the same time as the impact study. In addition, offsets may be required.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

Currently, only emissions issues in the context of the EU Emission Trade System are monitored, reported and verified. However, if there are non-mandatory offsets, monitoring and verification systems have been put in place in the framework of the low carbon label and international labels.

If a permit under the legislation on classified installations includes GHG obligations, the local state representative can take any measure to control the greenhouse gas emissions associated with a plant and adopt sanctions in the event of a violation of the regulations.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

A greenhouse gas emission allowance trading scheme was established at the European Union level by Directive 2003/87/EC. The provisions of the directive have been transposed into French law and codified in the Environmental Code. The installations covered by the trading system (electricity, refineries, steel, cement, glass and paper, nuclear installations, aviation activities) are subject to a greenhouse gas emission permit. Each year, the state allocates emission allowances to the operator. At the end of each calendar year, the operator must surrender, under penalty of punishment, 'a number of allowances equal to the total greenhouse gas emissions of its installations' (article L 229-7 of the Environmental Code). If the operator's emissions are higher, it can buy additional allowances on the market. It should be noted that in June 2021, the European Parliament approved a revision of the system that now includes new sectors such as maritime transport.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

The surrender of allowances at the end of the year is carried out by transferring units from the operator's account to the European registry account for the conservation and transfer of units usable in the allowance system. The European registry is managed at the national level by the *Caisse des dépôts et consignations*.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Allowances are issued free of charge and at the request of the administrative authority to operators authorised to emit GHGs. To benefit from this free issue, the eligible operator must declare the activity levels of its installation to the administrative authority (articles L229-16 and R229-7 et seq of the Environmental Code). In addition, the operator must have requested the issuance of allowances free of charge by 30 May 2019 for the 2021–2025 period and by 30 May 2024 for the 2026–2030 period. The new European legislation that is being put in place has provided for the abolition of free allowances between 2027 and 2032. This last rule for the period 2024–2030 may therefore be modified.

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The operator must then submit the greenhouse gas emissions report for the previous year to the administration. The operator must return, no later than 30 April of each year, a quantity of units corresponding to the emissions resulting from the installation's activities during the previous calendar year on the basis of the declaration, which must be verified at the operator's expense by an accredited body and then validated by the administrative authority (articles L229-7 and L229-10 of the Environmental Code). Shares transferred to the European register account are cancelled (article L229-11-3 of the Environmental Code). If the operator does not surrender enough allowances, the fine is set at €100 per allowance not surrendered.

Greenhouse gas emission allowances are movable assets that can be traded and transferred by account-to-account transfer.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

GHG emission allowance trading is governed by European Union law and in particular by Directive 2003/87/EC amended by Directive 1359/2013 on 17 December 2013, by Regulation 421/2014 of 16 April 2014, by Regulation 2017/2392 of 13 December 2017, by Delegated Regulation 2019/122 of 12 March 2019 and by Delegated Regulation 2019/1603 18 July 2019. Allowances are movable property that can be freely transferred by any natural or legal person, subject to certain exceptions. Allowances can be traded directly between two legal or natural entities that make contact via a financial intermediary that brings the buyer and seller together or via a trading platform.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

The GHG exchanges used in France are entirely carried out online through dematerialised applications.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

In France, the production of electricity comes mainly from nuclear (69 per cent), renewable energies (22 per cent), fossil fuels (oil and gas 7 per cent) and waste (2 per cent).

Energy production fell by 8.7 per cent in 2020 compared with 2019. Primary energy consumption was distributed as follows in 2020: nuclear (40 per cent), oil (28 per cent), natural gas (16 per cent), coal (2 per cent) and renewable energy (12 per cent).

GHG emissions from energy accounted for 70 per cent of France's total emissions in 2018; they decreased by 18.2 per cent between 1990 and 2018. Law No. 2015-992 of 17 August 2015 on the energy transition for green growth set the goals of reducing greenhouse gas emissions by 40 per cent in 2030 compared to 1990, increasing the share of renewable energy to more than 30 per cent of final energy consumption in 2030 and reducing the share of nuclear energy in electricity production to 50 per cent. by 2025. While a 50 per cent target has then been set for 2030, there is now no more limit in the French legislation, since the government has recently announced the relaunch of a major nuclear programme in the country.

This law also provides that by 2025, all private residential buildings whose primary energy consumption is greater than 330kWh of primary energy per square meter per year must undergo an energy renovation. The climate resilience law has strengthened the obligations and the new climate target of 55 per cent reduction is not yet integrated into French legislation. Among the various tools to promote the energy transition, energy saving certificates aim to encourage energy suppliers to promote savings to their customers. These suppliers have an obligation to save energy and several means are available to them: saving money on their own installations, encouraging their customers through awareness or financial aid, or buying energy certificates to sell on the market. Any individual or legal entity (associations, local authorities, companies, etc) that saves energy will be issued a certain number of certificates based on the kWh saved and will be able to resell them to these suppliers.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

With regard to the agricultural sector, the national low-carbon strategy aims to develop 25 per cent of arable land under organic cultivation by 2030 to reduce emissions by about 4.5 Mt CO_2 eq per year. In 2019, the law declared the closure of the country's last four coal-fired power plants by 2022. France also aims to increase sales of electric vehicles to 35 per cent by 2030, so that they represent 12 per cent of the fleet on the road by that date. Law No.

2021-1104 of 22 August 2021 on combating climate change and building resilience to its effects bans domestic flights if the alternative is less than two and a half hours by train, as well as mandatory carbon offsetting for all domestic flights by 2024. With regard to waste, Law No. 2020-105 of 10 February 2020 on the fight against waste and the circular economy contains several measures aimed at avoiding the production of single-use plastics, as well as increasing the recycling rates of waste from various products. Numerous decrees have since been issued to complete the system, notably concerning all construction materials.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

To achieve its objective of reducing greenhouse gas emissions, France is pursuing a national energy policy aimed at increasing the share of renewable energy to 32 per cent of gross final energy consumption by 2030 (article L100-4 of the Energy Code). France is far behind on its renewable energy targets and has been criticised by the Commission for not meeting the 23 per cent target that was supposed to be reached by 2020. The recent CRE reports underline this insufficiency and efforts seem to have to be made to improve the situation.

Wind energy

20 Describe, in general terms, any regulation of wind energy.

Wind energy is regulated by environmental, urban planning, energy and public property laws. Onshore wind turbines are subject to the regime of classified installations for the protection of the environment. Thus, wind turbines whose height exceeds 50 meters are subject to the single environmental authorisation provided by the environmental code. The issuance of the environmental authorisation is equivalent to a construction permit, a compensation authorisation, an exemption for protected species, an authorisation for classified facilities, an operating authorisation under the Energy Code and an approval under article L323-11 of the Energy Code. Unauthorised wind turbines are subject to declaration and require a building permit when the height of the mast exceeds 12 meters. The installation of offshore wind turbines is subject to the conclusion of a concession to occupy the public domain (article L2122-1 of the General Code of Public Property).

Finally, electricity production facilities using mechanical wind energy benefit from a buy-back obligation by Electricité de France and the local distribution companies responsible for supply (article L314-1 of the Energy Code). The multi-year energy programme defines France's energy policy (article L141-1 et seq of the Energy Code).

There is quite strong opposition in France to the development of wind turbines, especially from some politicians.

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Solar energy

21 | Describe, in general terms, any regulation of solar energy.

The regulations differ depending on the type of installation: rooftop solar, shading or ground installation. Small installations on the roof and small installations on the ground are subject to a building permit or a declaration. This is not the case for large installations. Because of the potential impact of a ground-mounted photovoltaic installation on the natural environment, its implementation is subject to specific environmental authorisations. The project will then have to obtain, depending on the case, a clearing authorisation as provided for in article L341-3 of the Forestry Code, or an exemption to the legislation on the protection of protected species (article L411-2 of the Environmental Code). It may also be subject to Natura 2000 impact assessment (article L414-4 of the Environmental Code) and to the water law regime (articles L214-1–L214-3 of the Environmental Code). If the project falls within the scope of the Water Law, it will be subject to the Environmental Code authorisation, which will replace the 'protected species' exemption, the Natura 2000 impact assessment and the land clearing authorisation, depending on the characteristics of the project. In addition, authorisations under the energy code must be required for the most important installations. The others are subject to a simple declaration

The operating permit provided for in the Energy Code is an increasingly exceptional formality since it only applies to installations with a power rating of more than 50MW. The others are deemed to be authorised (article L311-6).

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

For hydraulic works, four main administrative policies may apply: the policy on water and aquatic environments, the policy on non-domestic watercourses, the policy on inland waters (fresh and marine) and the policy on urban planning. Hydraulic works must necessarily obtain a concession or an authorisation from the Commission (article L511-1 of the Energy Code). Companies whose power exceeds 4,500kW are subject to the concession regime, the rest to the authorisation regime (article L511-5 of the Energy Code).

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

Solid recovered fuel (SRF) co-incineration plants that produce energy are subject to the authorisation regime provided by the regulations on installations classified for environmental protection. SRFs must comply with a set of specifications defined by an Order of 23 May 2016 (NOR: DEVP1525038A, JO, 25 May 2016). They must be prepared from non-hazardous waste and not exceed thresholds for mercury, chlorine, bromine, etc. In addition, these facilities are not subject to the general tax on polluting activities.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

French legislation encourages the incorporation of biofuels into petroleum fuels intended for automobile traffic to combat atmospheric pollution (article L224-3 of the Environment Code). The multi-year energy programme sets a target for the integration of biofuels into final energy consumption in the transport sector (article L661-1-1 of the Energy Code). For gasoline, the rates are 1.2 per cent in 2023 and 3.8 per cent in 2028, and for diesel, 0.4 per cent in 2023 and 2.8 per cent in 2028 (Decree No. 2020-456, 21 April 2020).

In France, the wood-energy sector is predominant, with 42 per cent of primary renewable energy production. The Commission is implementing a national biomass mobilisation strategy that aims to guarantee the supply of biomass energy production facilities. To support the sector, tenders for the creation of electricity production plants, a preferential electricity buy-back rate and a heat fund to develop district heating infrastructures using biomass, solar and geothermal energy have been set up.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

At the European Union level, the geological storage of carbon dioxide is governed by the CCS Directive 2009/31/EC of 23 April 2009. This directive was transposed in 2010 by the Grenelle II law of 12 July 2010 and by the decree of 21 October 2010, which provides a legal framework for safe and permanent geological storage of CO_2.

Since a decree of 20 March 2012, CO_2 capture facilities from classified facilities for the purpose of geological storage and geological storage facilities for carbon subject dioxide are not subject to authorisation under the legislation on facilities classified for environmental protection.

In addition, the 4 for 1000 initiative, launched by France at COP21 in 2015, brings together voluntary public and private storage actors to launch concrete actions on soil carbon and practices to achieve it. The ambition of 4 for 1000 is to engage farmers around the world towards productive and resilient agriculture based on appropriate land and soil management. The topic is gaining momentum today with the search for carbon sinks and the implementation of a regulation or even a regulation of the carbon market outside the ETS at the EU level.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

In M&A and other transactions, the key climate issues and regulations to be considered are the risks of GHG emissions liability in the event that the previously conducted activity is responsible for large amounts of GHG emissions or violates climate change laws and regulations. Care should also be taken to ensure that the activity can be compatible with new laws and regulations in this area. The issue of assets that may be lost due to their exposure to climate risks must also be addressed.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

In France, the hot topic is the upcoming revision of Regulation (EU) 2018/842 to organise, by 2030, a reduction of net greenhouse gas emissions of at least 55 per cent compared with 1990 in all sectors of the economy and throughout the European Union. The French government is obliged to modify its objectives to meet its obligations and may well be forced to do so by the Council of State.

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India

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

Yes, India is a party to the United Nations Framework Convention on Climate Change and to the agreements and policies framed thereunder including the Kyoto Protocol, the Paris Agreement and the Glasgow Climate Pact. India is also a signatory to the Montreal Protocol (and its Kigali Amendment) on phasing down chlorofluorocarbon, hydrofluorocarbon and hydrochlorofluorocarbon emissions.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

The Constitution of India empowers India's legislature (Parliament) to enact laws for the domestic implementation of international agreements, treaties and conventions to which India is a signatory. In adherence to its international commitments, India has notified various legislation and policies to combat climate change, which include those relating to environmental protection, coastal and island regions, electric mobility, clean energy, energy efficiency, forest conservation, clean air and water.

Main national regulatory policies

3 Outline recent government policy on climate matters.

India has framed the following policies to combat climate change:

- The National Action Plan on Climate Change, 2008 (NAPCC) encompasses following eight National Missions focusing on climate change:
- the National Solar Mission.
- the National Mission for Enhanced Energy Efficiency.
- the National Mission on Sustainable Habitat.
- the National Water Mission.
- the National Mission for Sustaining the Himalayan Ecosystem.
- the National Mission for a Green India.
- the National Mission for Sustainable Agriculture.
- the National Mission on Strategic Knowledge for Climate Change.

In addition to NAPCC, state governments and union territories in India have also framed their respective action plans on climate change.

- The India Cooling Action Plan, 2019 has been launched with a long-term vision to reduce direct and indirect emissions from energy-intensive devices such as refrigerators and air conditioners. It intends to address the cooling requirement across various sectors and lists actions that could help in reducing the cooling demand.
- The National Clean Air Programme, 2019 lays down an action plan to reduce air pollution at the city and regional level in India. It aims to ensure a 20–30 per cent reduction in particulate matter concentration by 2024.
- The Green Hydrogen Policy, 2022 encourages the production and use of green hydrogen and green ammonia as crucial tools for emissions reduction, especially in the hard-to-abate sectors. The union government has also approved the National Green Hydrogen Mission to reach annual production target of 5 MMT by 2030.
- The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme has been launched to encourage demand for and supply of electric vehicles (EV) in India. Many state-level policies have also been notified to encourage EVs, for instance, the Delhi government has launched an open database on EV charging and battery swapping stations across Delhi for encouraging the use of EVs. Recently, a draft battery swapping policy was released to avoid battery charging issues in EVs.
- The 'Lifestyle for the Environment - LiFE Movement' has been launched as a grass root mass movement for combating climate change, enhancing environmental actions to propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation and for sustainable and environment-friendly development. These policies seek to incentivise environment-friendly practices that encourage innovative market-based mechanism and encourage sustainable lifestyle by driving consumer/ community towards behavioural changes.
- Production Linked Incentive Scheme has been launched for encouraging increase in the manufacturing capacity of high efficiency solar PV modules in India.
- The union government has released the regulatory framework on sovereign green bonds and it issued these bonds in 2023.
- Various initiatives have been announced in the Union Budget for FY 2023–24, including:
    - a 35,000 crore financial outlay for priority capital investments towards energy transition, net zero objectives and energy security;
    - viability gap funding for battery storage systems with capacity of 4,000 MWh;
    - a green credit programme to encourage behavioural change for sustainable actions;
    - policies focusing on compressed biogas plants, mangrove and wetlands protection; and
    - an exemption to capital goods and machinery required for manufacturing of lithium-ion batteries from customs duty up to 31 March 2024.

Main national legislation

4 Identify the main national laws and regulations on climate matters.

While there is no specific legislation meant to address climate change in India, the issues relating to climate change and its causes are addressed through various environmental legislations, some of which are mentioned below:

Read this article on Lexology

- The Environment (Protection) Act, 1986 is an umbrella legislation that empowers the union government to initiate steps for environmental protection and improvement. While there is no specific reference to climate change, this legislation empowers the government and regulatory authorities to regulate and prevent environmental damage, which if allowed, also contributes to climate change.
- The Water (Prevention and Control of Pollution) Act, 1974 lays down the framework for prevention and control of water pollution in India.
- The Air (Prevention and Control of Pollution) Act, 1981 lays down the framework for prevention, control and abatement of air pollution in India, thus also helping to reduce emissions and helping in climate change abatement.
- The Forest (Conservation) Act, 1980 provides the framework for conservation of forests in India, thus ensuring that India's natural carbon sinks are protected and conserved.
- The Biological Diversity Act, 2002 provides the framework for conservation of biological resources, their sustainable use and the fair and equitable sharing of the benefits arising out of such use.
- The National Green Tribunal Act, 2010 has established the National Green Tribunal for adjudication of cases involving substantial questions relating to environment and this may also include issues relating to the contributory factors for climate change, such as air pollution, depletion of forest cover and water pollution.
- The Energy Conservation Act, 2001 provides the framework for energy conservation and its use and governance in India. It seeks to conserve energy and provide a mechanism for energy efficiency to help India in meeting its net zero commitments. In 2022, the Indian Parliament approved amendments in this Act to *inter alia* provide for: mandated use of energy from non-fossil sources by certain entities; establishing a carbon credit certificates scheme; energy conservation and sustainability code for specific commercial, office and residential buildings; and setting up of the state energy conservation fund.
- The Motor Vehicles Act, 1988 provides a framework for the transportation sector in India by covering aspects such as vehicle registration, fuel efficiency and emission standards.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

- The Union Council of Ministers is the highest executive decision-making body of India, headed by the Prime Minister of India. It is responsible for major policy-level decisions.
- The Ministry of Environment, Forest and Climate Change is the nodal ministry for administering the regulatory framework related to environment, biodiversity, forests, wildlife and climate change.
- The Ministry of Power is the nodal ministry for enforcing the regulatory framework related to the energy sector.
- The Ministry of New and Renewable Energy is the nodal ministry for new forms of energy, such as solar, wind, hydrogen and biomass.
- Further, there are other sectoral ministries, such as the Ministry of Road Transport and Highways, the Ministry of Agriculture, the Ministry of Housing and Urban Affairs and the Ministry of Heavy Industries, that are working to address climate change-related issues in their respective sectors.
- The Apex Committee for Implementation of the Paris Agreement is an inter-ministerial body constituted for a coordinated response on climate change matters and to ensure

that India is on track towards meeting its climate change obligations under the Paris Agreement.
- Union government has notified the National Designated Authority for Implementation of the Paris Agreement, which will *inter alia* frame policies and determine projects relevant for international carbon market under article 6 of the Paris Agreement.
- The Central Pollution Control Board is the central regulatory authority responsible for administering and enforcing regulations relating to industrial pollution, waste management, emissions, environmental standards, etc.
- NITI Aayog is a thinktank set up to advise the government on various policy issues, including aspects relating to climate change.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

As per India's Biennial Report to the United Nations Framework Convention on Climate Change (2021), India's net GHG emissions were 2,531,069,000 tons of CO2-equivalent in 2016. Of this, the energy sector contributed 75 per cent of emissions, followed by 14 per cent from agriculture, 8 per cent from industrial processes and product use and 3 per cent from waste. In its National Determined Contribution, 2015 (NDC), India had committed to reduce the emissions intensity of its GDP by 33–35 per cent by 2030 from the 2005 level. By 2021, India had achieved emission reduction of 28 per cent from 2005 levels. India announced the revised targets at the 26th Conference of Parties at Glasgow and updated its NDCs by stating that:

- India will reduce the carbon intensity of its economy by 45 per cent by 2030.
- 50 per cent of India's installed capacity for electricity will be from non-fossil sources by 2030.
- India will generate additional carbon sink of 2.5-3 billion tons through forest and tree cover by 2030.
- India will reduce its total projected carbon emissions by one billion tons from 2021 until 2030.

These are economy-wide emissions reduction targets determined by the government. While the private sector is also covered when it comes to such collective targets, there are no compulsory reduction obligations as such.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Many emission reduction projects have been undertaken in India under the Clean Development Mechanism (CDM) of the Kyoto Protocol. India has about 250 million Certified Emission Reduction units and about 1,767 registered projects under CDM, placing it at second position in the world. Some of the major CDM projects implemented in India are:

- a project to reduce emissions of HFC-23 (a potent GHG) generated as a by-product in production of a refrigeration gas;
- a power generation project based on natural gas;
- use of super-critical technologies to reduce GHG emissions from thermal power projects; and
- hydroelectricity projects in Himalayan states of India. An Indian company has undertaken a CDM-registered hydropower project in Bhutan.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The Securities and Exchange Board of India (SEBI) has recently mandated the top 1,000 listed entities (by market capitalisation) of India to make disclosures on environment, social and governance factors that include information on non-financial aspects related to the business like GHG emissions, energy efficiency, renewable energy utilisation, resource efficiency and sustainability initiatives. SEBI has recently amended the SEBI (Issue and Listing of Non-Convertible Securities) Regulations, 2021 to facilitate sustainable finance while safeguarding against 'greenwashing'. It has enhanced the scope of green debt security by including sustainable finance in relation to pollution prevention and control, eco-efficient products, etc, and has also introduced the concept of blue bonds (relating to water management and marine sector), yellow bonds (relating to solar energy) and transition bonds as sub-categories of green debt securities.

In 2023, Reserve Bank of India (RBI) released the Framework for Acceptance of Green Deposits seeking to mobilise and allocate financial resources in green activities or projects. The banking and non-banking entities specified in this framework can accept deposits from customers and utilise them to invest in and lend to specific green activities in sectors like renewable energy, energy efficiency, clean transportation and waste management, etc.

In 2017, India substituted Clean Energy Cess (levied at the rate of 400 rupees per tonne of coal produced or imported) to fund clean energy projects in India with the GST Compensation Cess. India also levies an implicit carbon tax of US$140 on petrol and US$64 on diesel.

Some states, such as Delhi and Goa, also levy cess or tax on polluting activities within their jurisdictions.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

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- India will reduce its total projected carbon emissions by one billion tons from 2021 until 2030.

These are economy-wide emissions reduction targets determined by the government. While the private sector is also covered when it comes to such collective targets, there are no compulsory reduction obligations as such.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

While India has a system to seek environmental consents that lay down the standards for effluents and emissions, there are no specific requirements for seeking GHG emission permits or approvals.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

India uses the GHG emission inventory methodology developed by the United Nations Framework Convention on Climate Change.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

India introduced the Carbon Credit Trading Scheme in June 2023, which envisages the creation of a carbon credit trading market. The industries that would be covered under the carbon credit trading schemes and allocation of allowance are yet to be notified under the Scheme. In addition, India has also launched a green credit programme in June 2023 to create a market-based mechanism for providing incentives in the form of green credits to stakeholders for specified activities that are beneficial for the environment. The carbon credit trading mechanism in India is still at its nascent stage, however, there are currently a few similar systems operating in India. Under the Perform Achieve and Trade scheme, the government allows the issue and trading of Energy Saving Certificates credited for energy conservation. Further, under the Renewable Energy Certificate (REC) trading system, the government allows the issue and trading of RECs for specified entities to meet a portion of their energy requirements from renewable energy. Similarly, states like Punjab and Gujarat have also launched projects for air pollution allowance and trading systems targeted to reduce air pollutants from industrial activities.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

Under the Carbon Credit Trading Scheme, the Grid Controller of India Limited is the registry for Indian carbon market. The registry performs its functions in a manner as prescribed by the union government.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Since the emission trading mechanism is at a nascent stage, the requirements for obtaining emission allowances have not been laid down yet. However, as per the Carbon Credit Trading Scheme, the National Steering Committee for Indian carbon market established under the Carbon Credit Trading Scheme shall develop the procedure for issuance, validity, monitoring, reporting and verification of the carbon credit.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

The Carbon Credit Trading Scheme has been notified since June 2023. As per the Scheme, the obligated entities must achieve the GHG emission intensity in accordance with the prescribed targets. Carbon credit certificates would be issued to obligated entities that exceed their targeted reduction in GHG emission while the obligated entities that fail to achieve their prescribed targets are required to meet such shortfall by purchasing carbon credit certificates. The union government has also proposed a green credit trading programme that incentivises voluntary environmental actions of various stakeholders. It envisages a mechanism where actions such as tree plantation, water conservation, sustainable agriculture, waste management, reduction in air pollution, mangrove conservation, sustainable building and infrastructure would generate green credits. The green credits will be available for trading in the domestic market.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Around 59 per cent (236 GW) of India's total installed power generation capacity is based on fossil fuels or non-renewable sources, such as coal, gas, diesel and lignite. The power generated from these sources emits more than 50 per cent of India's fuel related GHG emissions. Coal-based thermal power plants are responsible for 70 per cent of India's energy sector CO2 emissions.

India has initiated various policies to reduce GHG emissions from the energy sector. Apart from encouraging renewable energy installations, India is also focusing on improving the efficiency of its existing fossil fuel-based energy capacity through the following measures:

- Deendayal Upadhyaya Gram Jyoti Yojana (Rural Electrification Plan) and UDAY schemes seek to expand and modernise the electricity distribution network in India and reduce the demand for other polluting sources of energy such as diesel generators, coal and biomass.
- To improve the efficiency of existing thermal power plants, the government has introduced policies to renovate and modernise these plants by installing highly efficient supercritical, ultra-supercritical and advanced ultra-supercritical technology. Older and highly inefficient plants are being considered for retirement.
- The government has also introduced stringent air pollution emission standards for thermal plants and the compliance timeline is determined based on the location of the plant.
- Thermal power plants are required to establish, procure or supply at least 40 per cent of their capacity from or as renewable energy sources.
- A policy for the effective disposal and utilisation of fly ash from thermal power plants has also been introduced to reduce the carbon footprint of these plants.
- The National Mission on use of Biomass provides for co-firing of biomass in thermal power plants to reduce their GHG emission.
- The union government has mandated the use of minimum five per cent blend of pellets or briquettes made of crop residue as fuel, along with coal, in thermal power plants. This will reduce the GHG emissions from coal burning in these plants and the incidents of agriculture stubble burning causing air pollution in India.

In relation to the obligation for industries to reduce their energy consumption and trading of credits received for saved units, it is relevant to note the Perform Achieve and Trade scheme. Under this scheme, authorities determine intensity-based energy reduction targets for specified industries from energy-intensive sectors. Industries that achieve their targets are issued Energy Saving Certificates, which they can then trade with other industries that could not reduce their energy consumption to a specified level. This scheme is intended to drive innovations for reduction in energy consumption and for rewarding industries taking such steps.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

India has also introduced various policies to reduce GHG emissions in sectors other than energy. Some such initiatives are mentioned below:

- To encourage EV manufacturing in India, in addition to the FAME scheme, India has introduced the Production Linked Incentive Scheme for battery-operated EVs and hydrogen fuel cell vehicles of all segments as well as advanced chemistry cell battery storage.
- Indian Railways has set for itself the target of achieving net zero emissions by 2030. In connection with this, solar panels are being installed at railway stations and railway lands, as well as on the roofs of trains.
- India is expanding the network of mass rapid transit systems and regional rapid transport systems to different cities to reduce dependence on private vehicles.

- The union government has introduced measures to encourage the scrapping of old vehicles by restricting renewal of their registration certificates beyond a prescribed period and incentivising customers with benefits when buying new vehicles after scrapping.
- The government is also encouraging blending of petrol with ethanol to reduce GHG emissions. It seeks to achieve 20 per cent blending by the year 2025-26. Additional duty was imposed on unblended fuel pursuant to the union budget 2022-23.
- The government has introduced regulations such as Energy Conservation Building Code, 2017, Eco-Niwas Samhita, 2018, Design Guidelines for Energy Efficient Multi-Storey Residential Buildings, 2014 and Energy Efficiency Label for Residential Buildings, 2019 to encourage energy conservation and improvement in energy efficiency in buildings across India.
- In the agriculture sector, while there are currently no regulations to reduce GHG emissions, the government has launched the PM-KUSUM scheme to encourage the use of off-grid solar water pumps for irrigation to reduce diesel consumption.
- In case of diversion of forest land for non-forest purposes, compensatory afforestation needs to be undertaken by the entities concerned.
- Various schemes have been launched to promote afforestation, such as the National Agro-forestry Policy, the Green India Mission, the National Green Highways Mission, Joint Forest Management, the Urban Forests Scheme and Pradhan Mantri Van Dhan Yojana.
- The draft Green Credit Programme Implementation Rules, 2023 identify various sectors such as tree plantation, water conservation/ harvesting/ saving activities, sustainable agriculture, waste management, air pollution reduction, mangrove conservation and restoration, ecomark and sustainable building and infrastructure as Green Credit generating activities that would simultaneously reduce the GHG emissions.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

In its NDC (2015), India had committed to achieve 40 per cent of its installed electricity capacity from non-fossil energy sources by 2030. This target was achieved in November 2021, when renewable sources crossed 40 per cent of India's total installed capacity. As of December 2022, India had 42 per cent (172 GW) of its total installed generation capacity based on non-fossil fuel sources. Globally, India is at fourth position in terms of the total installed capacity of renewable energy, solar energy and wind energy. The government has set the target to install renewable energy capacity of 175 GW by 2022 and 500 GW by 2030.

India has introduced various policies to encourage the installation of renewable energy, some of which are mentioned below:

- In the union budget for FY 2022–23, union government had announced initiatives such as additional incentive schemes for production of solar panels, sovereign green bonds

and blended finance, all of which will provide financial resources to promote renewable energy projects.

- Various initiatives have been announced in the union budget for FY 2023–24, including

    - 35,000 crore financial outlay for priority capital investments towards energy transition, net zero objectives and energy security; and
    - viability gap funding for battery storage systems with capacity of 4,000 MWh;

- RBI is facilitating the financing of renewable energy projects by providing loans for the small renewable energy sector under its Priority Sector Lending scheme.
- The government has invited bids for 'Scheme for Setting up Manufacturing Zones for Power and Renewable Energy Equipment'. Under the scheme, it has proposed to set up three Manufacturing Zones to cut down on import reliance and build domestic capacity for renewable energy projects.
- The government has set up two funds, the National Clean Energy and Environment Fund and the National Adaptation Fund for Climate Change, to encourage clean power.
- The government is implementing the establishment of the Green Day Ahead Market and the Green Energy Corridor to better integrate renewable energy into India's grid system.
- The government has allowed bundling of new and existing thermal and hydropower projects with renewable energy, thus allowing them either to establish such projects or to procure power from renewable energy power plants for supply to other entities.
- The union government has waived off payment of interstate transmission charges on solar, wind, hydro pumped storage and battery energy storage systems projects installed up to 30 June 2025. A similar waiver has been announced for 25 years for:

    - offshore wind power projects commissioned up to 31 December, 2032; and
    - green hydrogen and green ammonia projects commissioned up to 31 December 2032;

- The union government has framed rules for open access to green energy. These rules provide that the obligated entities will be required to comply with a uniform renewable purchase obligation (RPO) and those utilising green energy beyond this obligation will be issued green certificates. Any entity can choose to generate, purchase, and consume green energy through different sources mentioned in these rules, including purchase of green hydrogen or green ammonia.

India also has a REC trading system, under which the authorities issue RECs to a renewable energy generator that can be sold to specified entities that are required to derive a part of their energy requirements from renewable energy. These specified entities have RPO, an obligation to purchase specific quantity of renewable energy for their energy requirements, intended to promote demand for renewable energy and reduce GHG emissions. Other industries can also voluntarily purchase RECs. The commercial and industrial consumers voluntarily purchasing renewable power will be provided a rating based on the quantity consumed.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

The development of wind power projects requires site selection based on factors such as land use permission, availability of wind resource, technically and commercially feasible grid connectivity, transport logistics and environmental acceptability. Wind turbines can be installed only if they have the requisite type and quality certification as specified in relevant guidelines. Developers of wind energy projects are *inter alia* required to acquire or leasehold land; prepare a detailed project report; obtain various statutory clearances from authorities such as the Ministry of Environment, Forest and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, State Pollution Control Boards and other departments of the region where the project is located; and obtain connectivity from central or state transmission utility.

To promote wind energy in India, the union and state governments also offer various benefits, including but not limited to, financial assistance, tax holidays and land allocation for wind energy parks and wind-solar hybrid energy parks. The union government has also announced the National Wind-Solar Hybrid Policy to promote wind-solar hybrid projects. Similarly, the National Offshore Wind Energy Policy, 2015 has also been introduced to encourage offshore wind energy projects in India.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Developers of solar energy projects are required to ensure specifications and quality control as per the guidelines issued by the Ministry of New and Renewable Energy. They are also required to obtain permits from authorities such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, State Pollution Control Boards and other departments of the region where this project is located. The pricing of solar energy in India is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers.

The union and state governments also offer various benefits, including but not limited to, financial assistance, tax holidays and land allocation to encourage solar energy projects such as the establishment of solar parks and ultra mega solar parks, solar rooftop in residential buildings, off-grid solar devices, etc. A dedicated agency, Solar Energy Corporation of India, has been set up to develop and facilitate private sector to develop renewable energy projects in India, particularly solar energy, wind energy and solar-wind hybrid energy.

To encourage domestic manufacturing of solar power equipment in India, the union government has approved the Production Linked Incentive Scheme for manufacture of solar photovoltaic modules and advanced chemistry cell battery storage.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

India classifies projects above 25 MW as large hydropower projects, whereas those up to 25 MW are micro, mini and small hydropower projects. These project developers require permits from authorities such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, the State Irrigation Department, State Pollution Control Boards and other departments of state where the project is located. Various studies are required to be undertaken for environmental clearance, forest clearance, cumulative impact assessment, carrying capacity studies, etc, before establishing these projects. The pricing of hydro energy in India is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers.

The government is encouraging small hydropower projects to avoid various problems associated with large hydropower projects, such as large-scale deforestation and resettlement of local communities. The government provides support to these projects in various forms such as in testing, training facilities, detailed project report, capital subsidy for projects, etc.

Apart from the above, the government is also attempting to harness the renewable energy potential of geothermal and ocean sources, but these have not yet been established on a commercial scale in India. To encourage pump storage projects, union government has relaxed the environmental clearance requirement for such projects subject to certain conditions irrespective of their power generation capacity.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-based energy projects are being encouraged by the government to address the menace of the increasing amount of waste generated in Indian urban areas and to utilise the energy-generating capacity of such waste. These projects require permits from different authorities, such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Nodal Agency, the local government authority, the State Electricity Department, the State Pollution Control Board and other departments of region where the project is located. The pricing is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers.

The government has launched the National Bioenergy Programme to generate biogas/bio-CNG/power from industrial waste, sewage treatment plants, urban and agricultural waste and municipal solid waste. The government also offers financial assistance based on the capacity to generate energy from waste. By March 2022, India had established 249 waste-to-energy plants, 11 power plants based on municipal solid waste, and 50.8 lakh small biogas plants.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Energy projects based on biomass usually utilise crop residue, animal waste, food processing waste, wood waste and agriculture waste as fuel to generate energy. Biofuel plants usually utilise sugar cane, grain starch (wheat, rice, corn, barley, etc) and agricultural waste to produce biofuel or ethanol. These projects require permits from different authorities, such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the local government authority, the State Electricity Department, etc.

By March 2022, India had established 819 biomass-based power plants. The government has launched the National Bioenergy Programme to encourage generation of energy from waste and the guidelines for implementation of this programme until 2026 have also been released comprising of sub-schemes focused on waste-to-energy, biomass and biogas. The government also offers financial assistance for biomass cogeneration projects that involve sugar mills and other industries utilising biomass to generate power.

In relation to biofuels, the government has also notified the National Biofuel Policy 2018 and Ethanol Blended Programme to boost supply and demand for biofuels in India. It seeks to achieve 20 per cent ethanol blending of petrol by 2025–26. It is also providing financial assistance through interest subvention scheme for the enhancement of ethanol production; reduction in the Goods and Services Tax levied on ethanol; and additional duty of 2 rupees per litre on unblended fuel. The government is also considering further expediting the regulatory clearances for ethanol production by setting up a single window system.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

The union government has proposed a green credit programme in June 2023 to provide incentives for voluntary environmental actions taken by various stakeholders. Tree plantation-based activities which increase green cover through tree plantation and related activities are also covered under the sectors that can generate green credit.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

There are various climate-related issues to consider in commercial transactions such as M&A, equity investment, lending and others, which are largely dependent on the nature of the business done by the target entity. Some of the generally considered aspects are: renewable energy consumption by the target entity; present GHG emissions (Scope 1, 2 and

3) of the target entity and future GHG emissions projection; identification and analysis of climate change related issues, risks and opportunities; policies and strategies to address these issues, the potential financial impact of these issues, risks and opportunities on the business; science-based targets of the entity consistent with goals of the Paris Agreement; sustainability initiatives taken by the target entity; investment in R&D to address climate change; participation by the target entity in emissions-related market schemes; steps taken for climate change mitigation and adaptation; and oversight by the Board of Directors and senior management on these matters.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

There are various trends or topics that are expected to affect climate regulation in India. Some of these include the following:

- The union government has introduced a Carbon Credit Trading Scheme for establishing a domestic carbon market in India.
- The union government has proposed a green credit programme to incentivise various stakeholders for undertaking voluntary environmental activities, which would generate green credits.
- Regulators are also focusing on the disclosure of environment, social and governance factors by businesses to assess the impact of non-financial aspects such as climate change on the economy. It is currently mandatory for the top 1,000 listed entities (by market capitalisation) in India, but its scope is expected to be widened in the near future.
- The government is also focusing on developing India as a manufacturing and exporting hub for green hydrogen. The Green Hydrogen Policy, 2022 and National Green Hydrogen Mission have been released to encourage production and use of green hydrogen and green ammonia for emissions reduction, especially in the hard-to-abate sectors.
- The government is also focusing on generating financial resources for undertaking climate change mitigation and adaptation projects in India. The mechanisms for such finance, including green bonds, sustainability-linked bonds, transition bonds and blended finance, are major points of discussion. Pursuant to announcement made in union budget for FY 2022–23, union government released the framework for sovereign green bonds and issued these bonds in 2023. States like Maharashtra have also announced their intent to issue instruments to raise financial resources for addressing climate change.
- The government is also focusing on a circular economy system to essentially promote resource efficiency and reduction in the extraction of new resources for economic activities. This aspect has been enforced in the transportation sector through the mandatory scrapping of end-of-life vehicles. The union budget for FY 2022–23 had proposed policy actions for other sectors to implement the circular economy.
- The Prime Minister of India launched the LiFE, Lifestyle for Environment, Mission to encourage individual and collective actions for environmental protection. In these lines, the union budget for FY 2023-24 has proposed to launch the Green Credit Programme

for encouraging behavioural change by incentivising environmentally sustainable and responsive actions by companies, individuals and local bodies.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

The United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol and Paris Agreement apply in Indonesia. Indonesia ratified the three instruments under Law No. 6 of 1994 regarding the Ratification of the United Nations Framework Convention on Climate Change, dated 1 August 1994 (UNFCCC); Law No. 17 of 2004 regarding the Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, dated 28 July 2004; and Law No. 16 of 2016 regarding the Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change, dated 24 October 2016. In compliance with its obligation as a Non-Annex I Party, Indonesia also submitted its second Biennial Update Report on 21 December 2018.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

As a party to the UNFCCC, the Kyoto Protocol and Paris Agreement to the UNFCCC, Indonesia has shaped its national regulatory policies based on its international pledge in its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions by 31.89 per cent (unconditionally) to 43.2 per cent (conditionally) below the business-as-usual scenario by 2030. The laws and regulations in Indonesia on climate matters (eg, Presidential Regulation No. 98 of 2021 on Carbon Economic Value (the Carbon Regulation), refer to the UNFCCC, its Conferences of the Parties results, and the NDC as considerations in enacting these regulations.

Indonesia also previously implemented a Reducing Emissions from Deforestation and Forest Degradation (REDD+) Programme with international support.

Main national regulatory policies

3 Outline recent government policy on climate matters.

To achieve its NDC target to reduce GHG emissions, the government of Indonesia recently enacted regulations on carbon tax and carbon economic value under Law No. 7 of 2021 regarding harmonised tax (the Harmonized Tax Law) and the Carbon Regulation, and climate change information systems to monitor and report GHG emissions, such as the

National Greenhouse Gases Inventory System and the National Registry System on Climate Change Control.

Other existing national regulations and policies for specific sectors, such as the energy, industrial processes and product use, agriculture and forestry, and waste sectors, among others, have also been enacted to govern climate matters in Indonesia.

Going forward, we project that the Indonesian government will issue other implementing regulations on climate change (eg, implementing regulations for carbon economic value), which will address carbon market mechanisms, among other topics.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

Other than the laws enacted to ratify international climate conventions, Indonesia does not have a main law that specifically regulates climate matters. Indonesia still relies on its environmental laws as the main framework to help mitigate climate change. These include Law No. 32 of 2009 regarding Environmental Protection and Management, as amended by Law No. 6 of 2023 regarding Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation, and Law No. 41 of 1999 regarding Forestry, as amended by Law No. 6 of 2023 regarding Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation, including their implementing Government Regulations (Government Regulation No. 23 of 2021 regarding Organization of Forestry and Government Regulation No. 22 of 2021 regarding Organization of Environmental Protection and Management, respectively). More recently, there has been some interplay with financial service sector laws and regulations, most notably the reforms introduced by Law No. 4 of 2023 regarding Financial Sector Development and Strengthening (Law 4/2023), which clarifies the status of tradeable carbon credit units to be categorized as securities (*efek*) within the terms of Indonesian capital market law. For completeness, Law 4/2023 also amends the laws on the capital market and the authority of the Indonesian Financial Services Authority (OJK) to integrate carbon trading mechanics into the already existing laws, and to designate OJK as the regulator and supervisor for carbon exchange implementation. There also are other regulations concerning agriculture, peatland, energy, transportation, industry and waste management, among others.

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

There are three national regulatory authorities responsible for the implementation and monitoring of climate regulations in Indonesia, which are the Minister of Environment and Forestry (MOEF), the Environmental Fund Management Agency (BPDLH) and the Peatland Restoration Agency (BRG).

MOEF is the chief institution responsible for establishing and implementing policies regarding climate change impact control and ozone layer protection. Any matters related to

climate change will be governed and supervised by the MOEF; this includes submission of Indonesia's NDC and Biennial Update Report under the UNFCCC.

The BPDLH is a fund management agency under the Ministry of Finance (MOF) and is the government agency responsible for facilitating a funding system for the implementation of GHG reduction projects from the national to sub-national levels. All climate change funding, including the mobilisation and placement of fund resources, will be managed and overseen by the BPDLH.

The BRG is a non-ministerial agency formed in 2016 that reports directly to the President. Its main mission is to maintain and restore peat ecosystems, focusing on sub-national peat projects in Kalimantan, Sumatra and Papua.

In addition to the three above-mentioned government institutions, the MOF governs any climate change matters related to fiscal and tax instructions. The MOF was the government institution that took the lead in pushing for the implementation of a carbon tax in Indonesia. Carbon tax provisions are governed under the Harmonized Tax Law. Carbon emissions having a negative impact on the environment will be subject to a minimum carbon tax of 30 rupiah per kilogram of CO_2e or other equivalent measurement unit (equivalent to around US$2.1 per tCO_2e).

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Based on Indonesia's Third Biennial Update Report (BUR) under the United Nations Framework Convention on Climate Change (Third Biennial Update), the main sources of GHG emissions in Indonesia in 2019 were, by order from highest:

- agriculture, forestry and other land use (AFOLU) sector;
- energy sector;
- waste sector; and
- industrial processes and product use (IPPU) sector.

The AFOLU sector contributed 1,030,154 Gg CO_2e (50.13 per cent), the energy sector contributed 636,453 Gg CO_2e (34.49 per cent), the waste sector contributed 120,333 Gg CO_2e (6.52 per cent), and the IPPU sector contributed 58,128 Gg CO_2e (3.15 per cent). Indonesia's total 2019 GHG emissions were 1,845,067 Gg CO_2e (these data reflect only the GHG emissions for CO_2, CH_4 and N_2O).

As a party to the Paris Agreement, the Indonesian government has an international obligation to reduce its GHG emissions according to its Nationally Determined Contribution (NDC) target. This obligation includes the submission of a progress report on climate change

mitigation and adaptation to the United Nations Framework Convention on Climate Change every two years for the BUR.

With the enactment of the Harmonized Tax Law, a cap and tax scheme will be applied to companies in the private sector with carbon emissions. This scheme will first be implemented for coal-fired power plants.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

There have been several major GHG emission reduction projects implemented in Indonesia. Under the Kyoto Protocol, there were approximately 47 Clean Development Mechanism (CDM) projects as of 2018 in Indonesia. CDM projects promote carbon emission reduction through the sale of Certified Emission Reduction credits to countries with emission-reduction commitments. Examples of CDM projects implemented in Indonesia include the Bekasi Power Combined Cycle Power Plant Project and the Multi Nitro Indonesia Nitrous Oxide Abatement Project.

As deforestation and forest degradation is the major source of emissions in Indonesia, the government of Indonesia focussed its policy on the implementation of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) Program by establishing the Presidential REDD+ Agency. REDD+ projects in Indonesia also are supported by international funding, including approximately US$1 billion from the Norwegian government, among others. REDD+ projects include result-based payment for carbon reduction yields (ie, the Bujang Raba Community Payment for Ecosystem Services Project, Project Forest and Climate Change Programme, and the Katingan Peatland Restoration and Conservation Project).

In the renewable energy sector, the government of Indonesia plans to have at least 23 per cent of its total primary energy supply generated by renewable sources by 2025. The government has released several policies, including the National Energy Policy (KEN) 2014–2050 in support of this goal.

Indonesia will also implement carbon tax policies and carbon trading mechanisms based on the Carbon Regulation and the Harmonized Tax Law.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The commercial aspects of the climate sector in Indonesia are mostly driven by private sector investment through international voluntary carbon trading schemes, with a compliance carbon trading market in the development pipeline. For example, Verified Carbon Standard issued by Verra, Gold Standard Credits or Voluntary Emission Reductions issued by Gold Standard, and Certified Emissions Reductions issued under the Clean Development Mechanism under the Kyoto Protocol.

There are several ongoing forestry and renewable energy projects that have been registered and verified by Verra. The Sumatra Merang Peatland Project, Rimba Raya Biodiversity Reserve Project, and Katingan Peatland and Restoration and Conservation Project have managed to reduce emissions from the agriculture, forestry and other land use sector and sell their emissions reductions to international stakeholders. In the renewable energy sector, the 55.5MW Natural Gas Power Generation Project at Batu Aji village, in Riau Islands province, the Mobuya Mini Hydro Power Plant 3 × 1,000kW, in North Sulawesi province, the Lahendong Unit 5 and Unit 6 Geothermal Project, and the 50MW Sipansihaporas Hydro Power Plant, in North Sumatra province, among others, have registered their renewable sources.

Other types of sustainable projects (eg, waste collection and waste recycling) are in the process of verifying and validating their plastic credits.

Under the Carbon Regulation, the government intends to create a national carbon market, which will be called a carbon exchange *(bursa karbon)*. The carbon exchange will be an exchange or trade facilitator licensed by the Indonesian Financial Services Authority (OJK). By virtue of Law 4/2023, the authority of the OJK has been expanded to include regulatory and supervisory authority over carbon exchange economic activities. The carbon exchange will be a system that will regulate carbon trading activities and/or record ownership of carbon units. As of this publication, the OJK has enacted a new regulation regarding carbon trading through the carbon exchange and is in the process of determining the entity to be designated to run the carbon exchange.

Both voluntary and compliance markets are contemplated for the purpose of the carbon exchange. To implement the carbon trading compliance market, the government will set emissions ceilings on certain businesses and sectors. Companies that exceed their emissions ceiling will either be taxed or obliged to purchase carbon credits from other business actors, which will commercially affect how companies operate and invest in more environmentally friendly technology. The compliance carbon market is expected to focus initially on coal-fired power plants, with other types of power plants and other sectors such as forestry, land use, and the industrial sector being scrutinized by the regulators for further development.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The Indonesian government recently enacted the Carbon Regulation. The Carbon Regulation acknowledges the term 'Emission Ceiling,' which is defined as the highest emission level approved for every sector and business or activity. The calculation of the Emission Ceiling will be based on the GHG sectoral baseline, sectoral NDC target, inventory of GHG and the target achievement period. In addition, the Harmonized Tax Law imposes a cap and tax scheme.

Notwithstanding the foregoing, the Minister of Environment and Forestry (MOEF) has issued several regulations to control pollution from certain sectors. MOEF Regulation No. 11 of 2021, which concerns emission quality standards for generator sets, does not provide a maximum emission load, but it does require business actors to calculate the emission load using the manual method through laboratory testing. Other industries, such as pulp and paper, and oil and gas, are required to monitor their emissions and input the data to the Information on Continuous Industrial Emission Monitoring System.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

There are no requirements for obtaining GHG emission permits or approvals under the prevailing regulations. Nonetheless, in general, business actors are required to obtain an environmental license issued by the Online Single Submission system. The type of license depends on the risk level of a business activity (ie, low, medium and high risk). See the environment chapter for elaboration.

For specific businesses and sectors, the government will set an emissions ceiling with which such companies will have to comply.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

GHG emissions are monitored, reported and verified through the National Registration System (SRN), which was first launched in November 2016. The SRN is regulated under MOEF Regulation No. P71/MENLHK/SETJEN/KUM 1 December 2017 of 2017 regarding the Implementation of the National Registry System Controlling Climate Change (MOEF Reg 71/2017) enacted on 31 January 2018. This regulation sets forth that the SRN operates to avoid double counting and to implement the principles under the Paris Agreement.

The SRN regulates registration and certification for all types of climate change actions (eg, adaptation actions, which include food security, energy independence, water security, health, municipal and rural civilisations, infrastructure, coast and small islands, and ecosystem security, and mitigation actions, which include energy, land use, land use change and forestry, agriculture, industrial process and product use and sewage, among others).

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

The Carbon Regulation aims to govern the procedure for setting the baseline for GHG emissions, which shall be a determining factor to stipulate climate change mitigation targets. The Carbon Regulation introduces the term 'Emission Ceiling', which is the highest emission level for certain sectors. The Emission Ceiling will be determined by the ministry overseeing each sector.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

Indonesia has launched the National Registration System (SRN) to register GHG emissions, as regulated under MOEF Reg 71/2017 and further regulated under the Carbon Regulation. This is in line with the principles in the Carbon Regulation, which stipulates that the SRN has the function:

- to act as government recognition for the contribution of carbon economic value to achieve the NDC targets;
- as a data and information system for mitigation actions and implementation of carbon economic value;
- to avoid double counting of mitigation actions; and
- to help trace carbon unit transfers and utilisation. SRN facilitates registration for all sorts of climate change mitigation and action, including REDD+ initiatives.

Project developers shall register their projects with the SRN via the following platform: https://srn.menlhk.go.id/index.php?r=home%2Findex. The data will then be validated by the SRN administrator. Following the validation, the administrator shall issue a registry number and the projects shall be verified. The verification process is based on the procedures set out in sectoral regulations and pursuant to ISO standards. In addition, the MOEF may issue certificates of appreciation to verified contributors of climate change projects.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

The Carbon Regulation contemplates that certain business sectors that are subject to a regulated emissions ceiling will be required to obtain a GHG emission allowance in the form of a technical approval issued by the relevant sectoral ministry (articles 50(2) and 79(1) of the Carbon Regulation). However, because the Carbon Regulation is only an umbrella regulation with respect to climate change control and emissions reduction, more specific implementing regulations issued by each sectoral ministry will need to be observed. For example, technical approvals in the industrial sector shall be regulated by the Ministry of Industry, while the Ministry of Energy and Mineral Resources will regulate technical approvals for the oil and gas sector. This requirement has only begun to be regulated, particularly in the coal-fired power plants sector, and more recently introduced for the forestry sector (mangrove and peatlands management). For business sectors not subject to future emissions ceilings, there are no provisions regarding the requirement to obtain a technical approval for the emissions allowance.

Following the legal classification of verified carbon credit units as securities, as discussed above, carbon units will be deemed as moveable goods due to their underlying value and the fact that they can be transferred/endorsed to multiple third parties. Therefore, they can be subject to pledge or fiducia security right in favor of third parties. We also note that until Law 4/2023 provides further clarity regarding the legal classification of carbon units as property under Indonesian law, the prevailing view on this matter is that the receivables deriving from the sale of carbon units can be encumbered with security rights. Such accounts receivable can then be collateralized with either pledge or fiducia security.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

The government of Indonesia, under the National Climate Change Committee (NCCC), did at one time plan to launch a Voluntary Carbon Market. In October 2013, the NCCC issued a handbook to introduce a carbon trading market scheme in Indonesia. However, the carbon market was never launched and the NCCC was dissolved in 2015.

Notwithstanding the foregoing, the Carbon Regulation recognises and regulates a carbon market. Domestic and international carbon trading shall be done through emission trades and emission offsets. The Carbon Regulation proposes requirements for both domestic and international carbon trading.

Under the emission trading scheme, trade will be conducted by businesses and activities with emissions either above the regulated emission ceiling or below the regulated GHG emission ceiling.

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The GHG emission offset scheme only applies to businesses and activities without any determined emission ceiling that provide a statement of emission reduction using the results of mitigation actions from other businesses and activities. To conduct GHG emission offset, businesses and activities with an emission surplus can sell their excess, and vice versa.

Businesses trading carbon are also obliged under the recently issued Minister of Environment and Forestry Regulation No. 21 of 2022 regarding Implementation of Carbon Economic Value (MOEF Reg 21/2022) to allocate a certain buffer amount, applicable for both domestic and international carbon trading. The purpose of this buffer is to allocate certain carbon units for risk control to achieve Indonesia's NDC target for carbon trading conducted all year long before 2030. The regulated buffer amount is: (1) 0-5 per cent for domestic transfers; (2) 10-20 per cent for foreign transfers; and (3) at least 20 per cent for foreign transfers outside the scope of the NDC (NDC Buffers). NDC Buffers can be returned to parties for trading if the NDC sub-sector target is met for two consecutive years.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

There are no standard agreements on GHG emissions trading used in Indonesia. For voluntary carbon trading schemes by the private sector, the arrangement is a business-to-business agreement and there are no standardised agreements required by applicable laws and regulations. Companies will want to remain alert for upcoming policies and regulations from the Indonesian Financial Services Authority (OJK) with respect to the carbon exchange that is currently under development.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Indonesia's energy mix consists of approximately 66 per cent fossil fuels: refined petroleum, coal, gas and other non-renewable energy sources. Energy is consumed to meet the demands of the transportation, industry, household and commercial sectors. The energy sector is the second-highest source of GHG emissions in Indonesia.

The general national strategy to minimise energy consumption is governed under the National Energy Policy (KEN) 2014–2050 under Government Regulation No. 79 of 2014 regarding National Energy Policy (NEP). Under the NEP, the government aims to have at least 23 per cent of electricity in Indonesia come from renewable energy sources by 2025, with that figure to increase to 31 per cent by 2050. There is no specific GHG emissions

limitation to minimise energy consumption. Nevertheless, the government aims to impose a carbon tax and emissions ceiling through the Harmonized Tax Law and Carbon Regulation, respectively.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

The general regulations on GHG emissions in connection with other sectors include:

- Minister of Environment and Forestry Regulation No. 21 of 2022 regarding Implementation of Carbon Economic Value;
- Minister of Environment and Forestry Regulation No. 7 of 2023 regarding Carbon Trading Procedures in the Forestry Sector;
- Minister of Energy and Mineral Resources Regulation No. 16 of 2022 regarding Implementation Procedures for Carbon Economic Value in the Power Plant Sub-Sector;
- Presidential Regulation No. 18 of 2020 regarding National Mid-Term Development Plan 2020–2024 (PR 18/2020), which sets out Indonesia's GHG emissions targets in several key sectors, including forestry, peatland, agriculture, energy, transportation, industry, and waste management.

In general, we note that there is a lack of sectoral regulation governing GHG emissions in specific sectors. Nonetheless, for the energy sector, the government has issued the National Energy Policy (KEN) 2014–2050 and Minister of Energy and Mineral Resources (MEMR) Regulation No. 22 of 2019 regarding Procedure for the Implementation of GHG Inventory and Mitigation in the Field of Energy. This MEMR Regulation concerns inventory, reporting, action plans and stakeholders for the mitigation of GHG emissions in the energy sector.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Until mid-2020, the share of renewable energy in Indonesia's total primary energy supply had only reached 10.9 per cent. Coal-fired power plants still dominate the supply of electrical energy in Indonesia, while renewable energy power plants account for 14.69 per cent of the total national installed power generation capacity. Hydropower and geothermal power account for a majority of the renewable energy mix.

PR 18/2020 includes targets and strategies to strengthen economic resilience and strengthen infrastructure to support economic development, which includes a discussion on energy. Pursuant to the National Mid-Term Development Plan, the government plans to

reach a renewable energy share of 23 per cent by 2025, a goal also outlined in Indonesia's Nationally Determined Contribution (NDC). To achieve energy efficiency, the government plans to increase the efficiency of energy and electric power utilisation by:

- developing an energy service company;
- expanding, rehabilitating and increasing the capacity of the transmission and distribution system;
- developing information management and data control systems;
- developing and utilising smart grid technology; and
- utilising high-efficiency and low-emission or HELE technology.

To express its commitment on renewable energy, Indonesia released the National Energy Policy (KEN) 2014–2050, which is a guideline to provide direction for national energy management to achieve national energy independence and security, supporting sustainable national development. Based on the KEN, the government plans to maximise the use of renewable energy, minimise the use of petroleum, optimise the use of natural gas and new energy (such as coal bed methane, liquified coal, gasified coal, hydrogen and nuclear), and use coal as a mainstay of national energy supply.

In the electricity sector, PT Perusahaan Listrik Negara (PLN), the Indonesian state-owned electricity enterprise, which has a monopoly on electricity distribution in Indonesia, recently introduced the Renewable Energy Certificate Program, aiming to increase awareness of renewable energy. Power producers will receive a certificate for every one megawatt-hour of renewable energy-based electricity they produce. Such certificates are tradeable and can be used by companies to offset their carbon footprint.

In addition, the government has enacted Presidential Regulation No. 112 of 2022 regarding the Acceleration of Renewable Energy Development for Electricity Generation (PR 112/2022), which also includes a mandatory phasing out of coal-fired power plants (CFPPs) and provisions on greater incentives for renewable energy projects. For example, for renewable project tenders, PR 112/2022 exempts (1) multifunctional hydro plants, (2) geothermal power plants, (3) expansion projects for geothermal, hydro, solar PV, wind, biomass and biogas power plants, and (4) excess power from geothermal, hydro, biomass and biogas power plants from the requirement to be listed in PLN's List of Selected Providers (*Daftar Penyedia Terpilih* (DPT)).

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Wind power plants generating power supply for the public interest are considered a high-risk business pursuant to the recent risk-based licensing categories under Government Regulation No. 5 of 2021 regarding Risk-Based Licensing (GR 5/2021) and it is necessary to obtain a business licence for electricity supply for public purpose. The term 'business licence' replaces the previously applicable business licence for power supply business activities. Power producers apply to the Minister of Energy and Mineral Resources (MEMR) for a business licence online via the Online Single Submission system.

The prerequisites for a power producer to obtain a business licence for power supply for public purpose include the fulfilment of several administrative, environmental and technical commitments, as follows.

- Feasibility study of the power generation business that contains, among other things:
    - financial feasibility study;
    - operational feasibility study;
    - network interconnection study;
    - installation location;
    - one-line diagram;
    - type and capacity of the business envisaged;
    - construction schedule; and
    - operational schedule prepared by a certified business entity.

- Signed power purchase agreement (PPA) between the power producer and the proposed electricity buyer, which in this case is PLN, with the electricity tariff or pricing provision having been approved by the MEMR or the governor of the relevant region pursuant to its authority. PLN controls the transmission, distribution and sale of electric power in all regions in Indonesia. Therefore, any independent power producer (IPP) will be required to enter into a PPA with PLN.
- Other prerequisites include fulfilment of principal commitments for any facilities and infrastructure projects, such as spatial utilisation confirmation, environmental impact assessment (AMDAL), building approval (this is the Indonesian term for a building permit), Functional-Worthiness Certificate (this is the Indonesian term for a certificate of occupancy) and other applicable permits; hiring qualified technical personnel who possess the required competence certificates to operate the plant and the machinery and equipment therein before the commencement of the plant's operation; and procuring and installing equipment conforming to mandatory National Indonesian Standard requirements, if any and as applicable, before the commencement of the plant's operation.

The government of Indonesia's support for the development of renewable energy power plants is further refined under MEMR Regulation No. 50 of 2017 regarding Utilisation of Renewable Energy Resources for the Provision of Electricity, as amended by MEMR Regulation No. 53 of 2018 and, most recently, by MEMR Regulation No. 4 of 2020 (MEMR Regulation 4/2020) (altogether, MEMR Regulation 50/2017 as amended). Under the regulation, there is a specific mandate for PLN to purchase electricity generated from renewable energy.

In general, the purchase of power generated from renewables by PLN can be done through a direct selection offer or direct appointment by PLN. Direct selection typically involves a qualification process in which a minimum of two pre-selected developers submit bids to be evaluated by PLN, with the winning bidder executing a PPA with PLN. Direct appointment, which follows a qualification and evaluation process similar to that for direct selection, except that there only needs to be only one bidder, is also possible under article 4(1a) of MEMR Regulation 50/2017 as amended in the following limited circumstances:

- if the local electricity system suffers a crisis or emergency situation;

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- for the purchase of excess electricity, including purchasing electricity through cooperation with the holder of an electricity supply distribution, sale or integrated electricity supply business license covering a specified business area;
- for increased generation capacity at the location of an operating power plant (ie, expansion projects); or
- for the purchase of electricity from a renewable power plant in the event there is only one IPP candidate for the relevant area.

It is worth noting that the more recent MEMR Regulation 4/2020 (as part of the revision of MEMR Regulation 50/2017 as amended) removed the requirement to deliver renewable energy projects to the government as build-own-operate-transfer (BOOT), and now permits projects that are designated on a build-own-operate basis, in addition to BOOT projects.

The electricity tariff is determined by benchmarking the local electricity generation basic cost (BPP) in the region where the electricity is generated against the national average BPP. BPP is PLN's average electricity generation cost as determined annually by the MEMR based on PLN's own recommendation. An exemption to this tariff regime applies only for entities that have been appointed as winners of capacity quotas for renewable energy projects that obtained approval for a specified electricity price from the MEMR prior to the issuance of MEMR Reg. 50/2017 as amended.

MEMR Regulation 50/2017 as amended stipulates that the calculation of the electricity tariff for power generated from renewables is as follows:

- if the local BPP is greater than the national BPP from the previous year, the tariff shall be set at a maximum 85 per cent of the local BPP; or
- if the local BPP is equal to or lower than the national BPP from the previous year, PLN and the relevant IPP can determine the tariff based on a mutual agreement.

At present, the applicable BPP refers to MEMR Decree No. 169.K/HK.02/MEM.M/2021 regarding PLN Electricity Generation Basic Cost for 2020, which sets the national BPP at 1,027.7 rupiah/kWh, while local BPPs range from 848.71 rupiah/kWh to 2,805.50 rupiah/kWh.

A renewable energy power plant can also obtain other incentives as governed under Presidential Regulation No. 4 of 2016 regarding Acceleration of Electrical Infrastructure Development, as amended by Presidential Regulation No. 14 of 2017, in the form of fiscal incentives, ease of licensing, determination of purchase price for each type of renewable energy, establishment of an independent business entity to supply power to PLN and provision of subsidies.

Notwithstanding the foregoing, different rules apply for windmill plants that generate power for private use.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar power plants are also considered a high-risk business and therefore a business license is required to commence operations.

The prerequisites to obtaining a business licence for a solar power plant are the same as to obtain a business licence for a windmill plant. The applicable electricity tariff for solar power plants is also the same as for windmill plants.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Hydropower, geothermal, wave and tidal energy power plants are also considered high-risk businesses and therefore require a business licence to commence operations.

The prerequisites to obtain a business licence for hydropower, geothermal, wave and tidal energy power plants are the same prerequisites to obtain a business licence for windmill plants. Wave and tidal energy power plants may be required to obtain additional permits (eg, water location permit).

The applicable electricity tariff for hydropower, geothermal, wave and tidal energy power plants is the same as for windmill plants.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-to-energy power plants are also considered a high-risk business and therefore a business licence is required to commence operations.

The prerequisites for obtaining a business licence for a waste-to-energy power plant are the same as for a windmill plant. The applicable electricity tariff for waste-to-energy plants is also the same as for windmill plants, except that the electricity tariff for waste-to-energy plants can also refer to the fixed tariff regime under Presidential Regulation No. 35 of 2018 regarding Acceleration of the Establishment of Sustainable Waste-Based Power Plants (PR 35/2018).

PLN's purchase price for electricity generated from a WTE plant with:

- a capacity of up to 20MW and connected to a high, medium and low-voltage network is US$13.35 cent/kWh; and
- a capacity above 20MW and connected to a high and medium-voltage network is 14.54 – (0.076 × (electricity generated by the WTE and sold to PLN)).

The above purchase prices are non-negotiable tariffs and without any price escalation adjustment. The tariffs under PR 35/2018 are relatively higher than the tariffs set out in MEMR 50/2017.

For waste-to-energy projects, in addition to electricity sales, the power producer can obtain a tipping fee, which is compensation paid by the regional government to the party handling

the waste management activities. PR 35/2018 governs that the tipping fee should not exceed 500,000 rupiah per ton.

PR 35/2018 is part of the government of Indonesia's effort to accelerate the development of WTE projects in the country, with a focus on 12 cities (DKI Jakarta, Tangerang, South Tangerang, Bekasi, Bandung, Semarang, Surakarta, Surabaya, Makassar, Denpasar, Palembang and Manado).

In addition to PR 35/2018, the central government may provide additional state budget to regional governments to support the development of waste-to-energy projects to cover waste management services at a maximum 500,000 rupiah per ton of waste. This support is stipulated under Minister of Environment and Forestry (MOEF) Regulation No. P.24/MENLHK/SETJEN/KUM.1/5/2019 of 2019 regarding Waste Processing Service Fee Assistance in the Context of Accelerating the Construction of Waste Processing Installations for the Production of Electric Power Based on Environmentally Friendly Technology and MOF Regulation No. 26/PMK.07/2021 regarding Funding Support from the State Budget for Waste Management in the Regions.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

By virtue of MEMR Regulation No. 32 of 2008, as last amended by MEMR Regulation No. 12 of 2015 regarding the Supply, Utilization, and Trade of Biofuel as Other Fuel Sources, the government has imposed an obligation gradually to increase the percentage of biofuel utilisation in multiple sectors against the total needs. The affected sectors include the power plant, industrial and commercial sectors, as well as public and non-public transportation. For instance, the regulation provides that by January 2025, 30 per cent of the power plant sector must utilise biodiesel (B100) as fuel. Similar obligations are provided for the utilisation of bioethanol and vegetable oil.

The business of biofuel and biomass plants falls under the organic chemical industry from agriculture sources and is considered a high-risk business pursuant to GR 5/2021. It requires a business licence obtained from the OSS system and the business actor must fulfil certain administrative and technical requirements, among others:

- having a biofuel resource;
- data on specification and quality standard for the biofuel;
- trademark and trade name;
- statement letter on occupational safety and health and environmental management;
- statement letter on compliance with the laws and regulations;
- statement letter on willingness to be examined by the relevant authorities; and
- document on list of beneficial ownership.

Biofuel plants are also required to guarantee a sustainable supply to the domestic market, and utilise domestic raw materials, technology and manpower. Other primary requirements include fulfilment of principal commitments for any facilities and infrastructure project

(such as spatial utilisation confirmation, AMDAL, building approval, Functional-Worthiness Certificate and other applicable permits).

The market index price of biodiesel fuel is determined monthly by the MEMR after carrying out a verification as stipulated in MEMR Regulation No. 24 of 2021 regarding the Supply and Utilization of Biodiesel Types of Biofuels in the Financing Framework of the Oil Palm Plantation Fund Management Agency, along with MEMR Decree No. 0219 K/12/MEM/2010 of 2010 regarding Market Index Prices of Oil Fuels and Market Index Prices of Biofuels Mixed Into Certain Types of Fuel Oil (as amended by MEMR Decree No. 3053 K/12/MEM/2011 of 2011).

The use of biomass as a renewable energy source for power generation is regulated by Government Regulation No. 79 of 2014 regarding the National Energy Policy, and more specifically under MEMR Regulation 50/2017 as amended. The applicable electricity tariff for biomass used for power plants is the same as for windmill plants.

In addition, power plants using renewable resources and biofuel plants are considered pioneer industries and may be entitled to tax holidays pursuant to Minister of Finance Regulation No. 130/PMK.010/2020 regarding Corporate Tax Reduction Facilities.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

The currently regulated carbon capture and storage activities are those arising from forestry business activities under Law No. 41 of 1999, as last amended by Law No. 6 of 2023, regarding Forestry (the Forestry Law) and its implementing regulations, namely Government Regulation No. 23 of 2021, MOEF Regulation No. 21 of 2022, MOEF Regulation No. 7 of 2023, and other MOEF regulations.

There are minimum regulations for carbon capture and trade in the context of non-forestry sectors such as energy, waste and industrial processes. It is expected that the Carbon Regulation will serve as the primary framework for carbon trading in multiple sectors.

Under the Forestry Law and MOEF regulations, carbon 'storage and sequestration' are categorised as environmental service businesses that may be done in both protected forest and productive forest areas with a forestry utilisation business licence (PBPH). Under a PBPH granted by the MOEF, concession holders may be able to conduct various forestry-type business activities aside from carbon capture and storage, such as timber extraction and natural tourism, in accordance with the MOEF stipulation. This is in contrast with the previous licensing regime, where one forestry business license was exclusive to a single type of forestry business (ie, one licence for timber extraction, one licence for carbon storage or capture). The current PBPH licensing mechanism is an effort by the government to streamline licensing in the forestry sector and induce the conventional logging industry also to conduct carbon capture or storage, trade or ecosystem restoration and other environmentally beneficial services. This supports the government's commitment as a party to the Paris Agreement.

Under the current regulations, PBPH holders will be obliged to make a non-tax revenue payment to the government for the grant of their PBPH licence, along with provisional payments of fees depending on their yield. We also note that the government is increasing tax imposition, particularly value added tax, in the Harmonized Tax Law, which will impact future carbon credit transactions arising from carbon capture or storage business activities. It is also expected that in the near future, certain businesses related to peatland and mangrove management will be subject to a certain emissions ceiling contemplated by the government under MOEF Regulation No. 7 of 2023.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

There are no universal climate change matters and regulations that apply generally to all business actors in the context of M&A transactions and the company or compliance due diligence process customarily involved in such transactions. For certain carbon trading actors, particularly within the context of the compliance market, a business actor/entity's compliance with its emissions ceiling stipulated by the government will affect its compliance with its emissions obligations. The NDC Buffers will also determine the compliance of companies that trade carbon credits through compliance market or voluntary market schemes.

Aside from carbon trading-related activities, climate change-related matters to be considered in connection with an M&A transaction will be those intertwined with a target company's environmental licensing and compliance. For example, whether an industrial company has duly complied with the gas emissions requirement stipulated in its environmental approval. Different companies may be subject to different assessments in an M&A due diligence, depending on the nature of their business and the sector in which they operate.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

The Harmonized Tax Law mandated that the carbon tax for coal-fired power plants would enter into force by 1 April 2022, and the full imposition of the carbon tax would begin in 2025. However, the carbon tax for coal-fired power plants has been postponed several times and is now planned to be introduced in 2025. To implement the carbon tax, the Harmonized Tax Law requires the Ministry of Finance to prepare regulations on (1) procedures for the calculation, collection, payment or deposit, reporting and mechanisms for the imposition of carbon tax; and (2) procedures for the deduction of carbon tax or other treatments for carbon tax, or both.

Specific for carbon trading, the Minister of Environment and Forestry enacted a carbon trading regulation specifically for the forestry sector, which, among other things, regulates that the trading of carbon can only be done by forestry utilisation business licence holders and other forest rights holders. It also regulates the imposition of an emissions ceiling on peatland and mangrove management companies, and introduces a maximum quota for international carbon trading. In addition to the regulations for the forestry sector and coal-fired power plants, the Indonesian government, through the relevant ministries, is preparing carbon-related regulations in other specific fields.

In addition, the Indonesian Financial Services Authority (OJK) is expected to finalise the framework and institutions to run and administer the first carbon exchange in Indonesia by virtue of its framework regulation, namely, OJK Regulation No. 14 of 2023 regarding Carbon Trading through Carbon Exchange, which entered into force on 2 August 2023. This regulation reaffirms the status of carbon units as securities and sets forth the requirements, operational and internal controls, and licensing and reporting obligations for the entity that will administer the carbon exchange.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

Japan has ratified the 1992 United Nations Framework Convention on Climate Change (UNFCCC). Pursuant to the provisions of the UNFCCC, Japan periodically reports to the UNFCCC secretariat on GHG emissions and removals in Japan, the implementation status of countermeasures and policies for climate change, and the status of assistance provided to developing countries to help them combat climate change.

Japan signed the Kyoto Protocol in 2002. Japan has set up a goal of reducing GHG by 6 per cent during the period from 2008 to 2012. After the approval of the Kyoto Protocol Target Achievement Plan in a cabinet meeting in April 2005, Japan has implemented measures to achieve this goal. Japan did not participate in the protocol during the second commitment period, from 2013 to 2020. Subsequently, at COP21 in December 2015, the Paris Agreement was adopted as a new international framework for the reduction of GHG emissions in the post-2020 period, replacing the Kyoto Protocol.

Japan ratified the Paris Agreement in 2016, and set up a goal of reducing, by the fiscal year 2030, GHG emissions by 46 per cent of the level of GHG emitted in the fiscal year 2013, and by a further 50 per cent in the post-2030 period. Furthermore, in 'The Long-term Strategy under the Paris Agreement', which was approved in the cabinet meeting on 22 October 2021, Japan declared that it will aim to achieve net zero GHG emissions by 2050, namely, '2050 Carbon Neutrality'.

Based on the above, Japan has submitted its nationally determined contribution (NDC) which aims to reduce GHG emissions by 46 per cent (compared to the financial year 2013) in the financial year 2030 and to achieve net-zero by 2050 (please refer to the website of the UNFCCC in connection with Japan's NDC).

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

Japan enacted the Act on Promotion of Global Warming Countermeasures (Global Warming Countermeasures Act) in 1998 as a countermeasure for global warming, which was revised in 2022 by taking into account the Paris Agreement and with a view to achieving 2050 Carbon Neutrality. Following the revision, it is now specified in law that the increase in the global average temperature will be held to well below 2°C above pre-industrial levels and efforts

will be pursued to limit the global average temperature increase to 1.5°C above pre-industrial levels as prescribed in article 2, 1(a) of the Paris Agreement, as well as that Japan will realise a decarbonised society by 2050 (Article 2-2 of the said Act).

Furthermore, the GX Basic Policy was approved in a cabinet meeting on 10 February 2023, which included provisions on (1) the promotion of thorough energy saving, (2) making renewable energy the main power source, (3) the utilisation of nuclear power, (4) the utilisation of hydrogen and ammonia, and (5) the introduction of growth-oriented carbon pricing.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The Act on the Promotion of Global Warming Countermeasures was enacted in Japan. It provides the framework for the state, local governments, business operators and the citizens to tackle global warming together. Furthermore, the 2022 revision provides for an approach to decarbonisation utilising local renewable energy and a scheme to promote digitalisation and open data transformation of information on emission by companies.

In addition, with the enactment of the GX Promotion Act in May 2023 under the GX Basic Policy, the government expects to issue GX Economic Transition Bonds and introduce a carbon levy and an emissions trading scheme.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The laws governing basic climate change issues in Japan are currently the Global Warming Countermeasures Act and the GX Promotion Act.

The Global Warming Countermeasures Act is a kind of basic act that provides a framework for the responsibilities of the State, local governments, business operators, and citizens for establishing global warming countermeasures. This Act provides for a system for calculating, reporting and disclosing GHG emissions as the main approach. Furthermore, recent revisions to this Act led to the specification of the goal of 2050 Carbon Neutrality, establishment of plans and certification systems for promoting businesses that contribute to local decarbonisation, and establishment of provisions on digitalisation and open data transformation of information on emissions by companies toward the promotion of decarbonisation management.

The GX Promotion Act provides certain carbon pricing mechanisms, such as carbon levies and a Japanese emission trading scheme (GX Emission Trading Scheme or GX-ETS). For further details of the GX Promotion Act, please refer to our newsletter.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The main authorities regulating climate change are the Ministries of the Environment and of Economy, Trade and Industry. The Global Environment Bureau of the Ministry of the Environment promotes policies of the government as a whole regarding global environment conservation such as the prevention of global warming and protection of the ozone layer.

In addition, the Cabinet has established the Green Transformation Implementation Council and Global Warming Prevention Headquarters (which are led by the Prime Minister of Japan), which sets up expert panels for the promotion of climate change countermeasures and reports on the progress of the global warming countermeasures plan every year.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Under the UNFCCC, Japan annually submits a GHG inventory (a list on GHG emissions and removals) to the UNFCCC secretariat.

The GHG emissions and removals in the fiscal year 2021 amounted to 1,122 million tons, which is a 2.0 per cent (plus 21.5 million tons) increase as compared with the fiscal year 2020, and a 20.3 per cent (minus 285.3 million tons) decrease as compared with the fiscal year 2013.

For further details, please refer to the website of the Ministry of Environment.

The breakdown is 94.8 per cent for emissions associated with the combustion of fuels, 4.1 per cent for the use of industrial processes and products, and 1.0 per cent for emissions from the waste sector. The breakdown of emissions associated with the combustion of fuels was 41.8 per cent for the energy sector, 23.5 per cent for the manufacturing and construction sector, 16.8 per cent for the transport sector, and 12.8 per cent for other sectors.

For further details, please refer to the website of the Ministry of Environment.

Based on the calculation, reporting, and disclosure systems for GHG emissions targeted at specified emitters, the aggregated results of GHG emissions for the fiscal year 2019 was reported in December 2022.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

The following systems can be listed as the main approach in Japan toward the reduction of GHG emissions.

The first are the systems under the Global Warming Countermeasures Act, which mainly consist of the calculation, reporting, and disclosure systems for GHG emissions. Under the systems, specified emitters that produce significant amounts of GHGs are required to calculate and report their GHG emissions, and the state compiles and publishes the reported information. The Act provides for a non-penal fine (*karyo*) for failure to report or false reporting.

The second is global warming tax. In Japan, a global warming tax is levied on the use of fossil fuels such as petroleum, natural gas, and coal in proportion to their CO2 emissions. The tax revenue is used for measures to reduce energy-derived CO2 emissions, including energy-saving measures, the promotion of the use of renewable energy, and the use of cleaner and more efficient fossil fuels. Specific examples of these measures include: promoting the establishment of facilities for innovative low-carbon technology-intensive industries (eg, the lithium-ion battery business) in Japan, promoting the introduction of energy-saving equipment by small and medium-sized enterprises, and promoting the introduction of renewable energy in line with characteristics of each region via the Green New Deal funds and other resources.

Furthermore, under the GX Promotion Act, it is planned that technical assistance will be provided through the introduction of GX Economic Transition Bonds, a carbon levy, and an emissions trading scheme.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Under the Global Warming Countermeasures Act, the Guidelines for the Reduction of Greenhouse Gas Emissions was established, which is a set of guidelines providing measures to be implemented by business operators as part of their obligations to make best efforts to reduce GHG emissions.

In addition, the Act on Rationalising Energy Use and Shifting to Non-fossil Energy (the Energy Saving Act) provides for direct regulations and indirect regulations imposed on energy users. More specifically, under the direct regulations, judgment criteria are set, and instructions to prepare and submit rationalisation plans are given to, or obligations to periodically report

conditions of use of energy are imposed on specified business operators that are factories, etc. with annual energy use of not less than 1,500 kilolitres if their rationalisation of use of energy is extremely inadequate. Under the indirect regulations, target energy consumption efficiency of items such as automobiles is set for manufacturers, and there is a provision that retailers such as home electrical appliance retailers have obligations to make best efforts to provide information on the energy consumption efficiency of appliances to general consumers.

As stated above, the Energy Saving Act directly regulates energy users by setting judgment criteria, and by giving instructions to prepare and submit rationalisation plans or by imposing obligations to periodically report conditions of use of energy if their rationalisation of use of energy is extremely inadequate.

Furthermore, it is planned that a fossil fuel charge will be imposed on importers of fossil fuels, and charges for electricity generation will be levied on specified electricity generation operators.

Tokyo has established a total emissions reduction obligation and an emissions trading scheme. It is the 'cap-and-trade system' where obligations to reduce GHG emissions are imposed on specific business establishments, and excess emission reductions are traded with emission reduction shortfalls. In the fiscal year 2021, an actual reduction of 33 per cent from baseline emissions was recorded.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The Japanese government has set up a goal of reducing GHG emissions in the fiscal year 2030 under the Paris Agreement from the level of GHG emissions in the fiscal year 2013 (ie, Japan's Nationally Determined Contribution), and declared that it will realise carbon neutrality in the fiscal year 2050.

At the national level, although there is the GX League which is a voluntary system, there is no mandatory cap-and-trade system. At the local government level, there is the aforementioned Tokyo *Cap-and Trade* Program. Companies are proceeding with measures for voluntary reduction of carbon dioxide in accordance with international initiatives such as CDP and RE100.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Japan does not adopt any licensing or authorisation system regarding GHG emissions.

However, there are systems such as the calculation, reporting, and disclosure of GHG and voluntary goal setting systems under the GX League.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

The calculation, reporting and disclosure systems for GHG emissions under the Global Warming Countermeasures Act require specified emitters to report GHG emissions. Specified emitters report the information on the previous year's emissions for each business operator, which will be ultimately compiled and published for the public by the Minister of the Environment and the Minister of Economy, Trade and Industry.

In addition, under the Energy Saving Act, specified business operators are obliged to submit periodic reports on their energy use.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

The major carbon credits (Baseline and Credit) in Japan are the (1) J-Credit Scheme and (2) Joint Crediting Mechanism (JCM). (1) The J-Credit Scheme is a scheme managed by the Ministry of Economy, Trade and Industry, the Ministry of the Environment and the Ministry of Agriculture, Forestry and Fisheries, where the state certifies as 'credits', emission reductions in CO2, etc, achieved through the introduction of energy-saving equipment and the use of renewable energy and removals of CO2, etc, achieved through adequate forest management. (2) The Joint Crediting Mechanism is a system under article 6, paragraph 2 of the Paris Agreement where credits are granted to CO2 emission reduction projects implemented in a country which made a separate agreement with the Japanese government.

In addition, under the aforementioned GX League, a voluntary emissions trading scheme (GX-ETS) will start on a preliminary basis in 2023 and on a full-scale basis in or around 2026. GX-ETS is not a cap and trade system in a sense that (1) it is voluntary for each company to participate and (2) no cap (obligation) is imposed on each participant. However, most of major companies in Japan have participated in GX-ETS (the total amount of GHG emissions by all participants will be approximately 40 per cent of the total GHG emissions in Japan) and each of participants is required to submit its GHG emission reduction targets which are consistent with Japanese Government's NDC. In this sense, GX-ETS is a 'de-fact' cap and trade system. In GX-ETS, companies set goals for voluntary emission reductions, and if such goals are not achieved, they are required to acquire emissions allowances (excess emission reductions) or carbon credits of other participants.

Furthermore, under the GX Promotion Act, with respect to specified business operators' contributions, paid allocation and unit price of emissions allowances are to be determined

by auction (paid allocation through auction), and an emissions trading scheme is planned to be introduced.

For further details of the carbon off-set credit markets/regime in Japan, please refer to our newsletters below.

www.amt-law.com/asset/pdf/bulletins12_pdf/230221_en.pdf

www.amt-law.com/asset/pdf/bulletins12_pdf/220629_en.pdf

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

The J-Credit Scheme includes the J-Credit Scheme Registry System, under which users can open credit management accounts in this registry system, and hold, invalidate, and transfer domestic credits such as J-Credits.

The Joint Crediting Mechanism includes the JCM Registry System, under which companies, etc. intending to acquire, hold, and transfer JCM Credits can open accounts in the JCM Registry in Japan and use the Joint Crediting Mechanism.

It is expected that a new registration system will be established soon in connection with allowances to be issued under GX-ETS.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Under GX-ETS, it is expected that a GX League participant will be able to obtain allowance (GX-ETS Allowance) if such GX League participant will be able to reduce GHG emissions more than its GHG emission reduction target submitted at GX League. Any GX League participant will be able to sell GX-ETS Allowance to another GX League participant that is unable to reduce GHG emissions compared to its GHG emission reduction targets.

In addition to GX-ETS Allowance, there are J-Credits and JCM-Credits, which are basically issued under a baseline and credit system. To create J-Credits under the J-Credit Scheme, it is first necessary to make applications to the state for projects such as the introduction of energy-saving equipment, use of renewable energy, and adequate forest management, and to undergo examinations and obtain approval. Then, the projects are registered following this examination and approval. Only after a report on the projects is submitted and monitoring is conducted may emission reductions in CO2, etc, and removals of CO2, etc, be certified as J-Credit.

There are three methods of trading J-Credits, which are via intermediation services by internet service providers, registration in the list on the J-Credit website and participation in the bid selling conducted by the J-Credit Scheme Secretariat.

In addition, in the case of creating credits under the Joint Crediting Mechanism, a project participant first receives confirmation of the validity of the project, and has the project registered. Then, after monitoring and verification of the registered project are implemented, credits are issued.

JCM Credits are used by methods such as making adjustments in the calculation, reporting, and disclosure systems for GHG, and utilisation in international emission reduction systems.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

It is expected that GX-ETS Allowance will play a role similar to allowances under EUETS. In addition to that, there are two baseline and credit systems led by the Japanese government, namely, the J-Credit Scheme and the Joint Crediting Mechanism.

The J-Credit Scheme is essentially a domestic system, where it is assumed that Japanese companies offset their domestic GHG emissions against J-Credits. However, for overseas emission activities deriving from international flights, international navigation, and overseas manufacturing, the J-Credit Scheme can only be utilised in the case of voluntary off-setting. The emissions trading scheme under the aforementioned GX League (GX-ETS) is also essentially a domestic system in Japan. Although foreign companies can participate in the GX League, emissions that will be subject to reporting and trading are their GHG emissions in Japan only.

Japan also implements the Joint Crediting Mechanism. This is a mechanism where Japan provides decarbonisation technology to partner countries and contributes to the reduction of GHG emissions, and then acquires credits according to the quantitative evaluation of such contributions. So far, Japan has signed agreements with 26 countries including Mongolia and Bangladesh and is conducting various related activities. As for JCM Credits, as a system under article 6, paragraph 2 of the Paris Agreement, it is assumed that the Japanese government offsets its emissions against them. In addition, GX League participants are also allowed to offset their emission reductions against JCM Credits.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

Since the GX League has just started its preliminary operations in April 2023, at present, the contract form for trading carbon credits under the GX League has not been released yet. In

the future, there is a possibility that a Japanese law version may be prepared based on the contract forms of IETA/ISDA which are used internationally.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Production and consumption of non-renewable energy

Japan's energy needs are heavily dependent on natural gas, coal, and oil imported from abroad, and largely consist of energy produced from such fossil fuels. As a result of the Great East Japan Earthquake that occurred in 2011 and subsequent shutdown of nuclear power plants, consumption of fossil fuels as fuels for power generation replacing nuclear power has increased, the dependency rate on fossil fuels is increasing, and the dependency rate on fossil fuels in the fiscal year 2021 was approximately 83 per cent. As a result of renewable energy being introduced and the operation of nuclear power plants resuming in the power generation sector, the quantity of oil-fired power generation has decreased. For further details, please refer to the website of the Ministry of Economy, Trade and Industry (Japanese language only).

	In crude oil equivalent of 10 thousand kilolitres	Ratio
Oil	17,355	36.0
Coal	12,418	25.8
Natural gas, city gas	10,326	21.4

Viewing the composition of power sources (power generation quantity), in the fiscal year 2021, the amount of power generation by natural gas was 3,558 hundred million kilowatt-hours, which accounted for approximately 34 per cent of the total and made up the largest portion. The amount of power generation by coal following natural gas was 3,202 hundred million kilowatt-hours which accounted for approximately 31 per cent of the total. Power generation by oil was 767 hundred million kilowatt-hours which accounted for 7 per cent of the total.

GHG emissions and regulations

Domestic GHG emissions in the fiscal year 2021 was approximately 1,122 million tons, which was an approximately 2 per cent increase from the previous year. One of the causes is thought to be increase in energy consumption owing to the economic recovery from the covid-19 pandemic. Compared with the fiscal year 2019, the emission amount has reduced by about 3 per cent, which shows some progress. For further details, please refer to the website of the Ministry of Economy, Trade and Industry (Japanese language only).

From the perspective of regulation, under the Global Warming Countermeasures Act, those who emit a large amount of GHG (also known as 'specified emitters') are obliged to calculate and report to the state their own GHG emission amounts, and the state must compile and publish the reported information.

A similar regulation is the reporting system under the Energy Saving Act. This system sets regulations for business operators that fulfil certain standards, such as business operators with annual energy use in crude oil equivalent of not less than 1,500 kilolitres and freight carriers owning not less than 200 trucks. The regulations include obligations for making periodic reports on conditions of energy use, preparing and submitting medium to long-term plans concerning energy saving efforts, and establishing energy management systems in factories.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Global warming tax

From 1 October 2012, a 'global warming tax' came into force in phases. The purpose of the global warming tax is to impose a fair tax burden broadly and thinly with respect to the use of all fossil fuels including oil, natural gas and coal in accordance with their environmental burden. Specifically, the tax rate per unit amount (kilolitres or tons) is set by using CO2 emission intensity for each type of fossil fuel, so that the tax burden for each type of fossil fuel will be equal to 289 yen per ton of CO2 emissions. On 1 April 2016, the increase in the tax rate was completed and the final tax rate was set at the rate that was initially planned at the time of introducing the global warming tax. It is expected that, by utilising this tax revenue, various measures to reduce energy-derived CO2 emissions such as energy-saving measures, the promotion of the use of renewable energy, and the use of cleaner and more efficient fossil fuels will be steadily implemented.

Fluorocarbon Emissions Control Act

The Act on Rational Use and Proper Management of Fluorocarbons (Fluorocarbon Emissions Control Act) is an act on the reduction of fluorocarbons and prevention of fluorocarbon leakage to restrain fluorocarbon emissions. The Act requires business operators that manufacture and import fluorocarbons to take measures to (1) lower the global warming potential (GWP) of manufactured or imported fluorocarbons and substitute them with other substances, (2) construct facilities necessary for the manufacturing of alternative gases, conduct improvements in technology, and capture, destroy and recycle fluorocarbons.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Responsibilities to be borne by the state and the private sector

While aiming to achieve 2050 Carbon Neutrality, in the Sixth Strategic Energy Plan, which was approved in a cabinet meeting in October 2021, Japan has set up a goal of achieving an ambitious renewal energy ratio of approximately 36 per cent to 38 per cent in the power sources as a standard based on the GHG emission reduction goal for the fiscal year 2030.

At the local government level, Tokyo has established a system that makes it compulsory to install solar power generation facilities in newly constructed houses, and to ensure thermal insulation performance and energy saving performance. Other local governments also have established or are considering the establishment of similar systems.

Production of renewable energy

The production of renewable energy (including hydroelectric power generation) is on the increase year by year. Specific figures are 18.2 per cent for the fiscal year 2019, 19.8 per cent for the fiscal year 2020, and 20.3 per cent for the fiscal year 2021. Of the figure for the fiscal year 2021, solar power generation accounted for 8.3 per cent, which, together with the 0.9 per cent for wind power generation, makes the ratio of variable renewable energy (VRE) more than 9 per cent. The ratio of solar power generation has increased from the previous year's figure of 7.9 per cent, which is also higher than the ratio of hydroelectric power generation.

Renewable energy policy

Among the measures for promoting renewable energy, the FIT scheme has been playing a central role. The FIT scheme is a scheme under the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities (Renewable Energy Special Measures Act), which came into force from July 2012, and obliges power companies to purchase electricity produced from renewable energy at the unit price set by the state over a certain period. Through this system, even if the market price of electricity changes, an electricity generation utility may earn fixed electricity sales proceeds.

In addition, in April 2022, a new FIP scheme started. While the purchase price under the FIT scheme is fixed in any situation, the purchase price under the FIP scheme is linked to the market price. Under the FIP scheme, the purchase price will be higher if electricity is sold when the demand is low as compared to the case where electricity is sold when demand is high.

As a system to enable trading of the 'environmental value' of the electricity purchased under the FIT scheme, non-fossil certificates were introduced in 2018. This is a system to extract 'environmental value' (also called non-fossil value) from the electricity generated from 'non-fossil power sources' (meaning power sources that do not use fossil fuels) such as oil and coal, and to turn the value into certificates and trade them. Non-fossil certificates are managed under Japan Electric Power Exchange (JEPX)'s non-fossil certificate trading system. Initially when this system was introduced, the attribute information (such as the type of power source and the location of the power plant) of the power source from which the non-fossil certificates were derived was not given. Thus, to enable non-fossil certificates to be utilised for the reporting obligation under 'Renewable Energy 100 per cent' (RE100), in November 2021, procedures for providing the attribute information of the power source from which the non-fossil certificates were derived (tracking system) were introduced.

Carbon credits

The major carbon credit schemes implemented in Japan are the Joint Crediting Mechanism and J-Credit Scheme. The latter (J-Credit Scheme) is a scheme developed by integrating the domestic credit scheme and the Offsetting Credit (J-VER) Scheme, and is operated by the state.

In addition to these schemes, in 2023, the GX League and GX-ETS have been launched. Under the GX League, it is expected that full-scale CO2 emissions trading will be conducted in the future. (Until 2025, CO2 emissions trading will be implemented experimentally.)

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

General remarks

Wind power generation is subject to the application of the FIT scheme and the FIP scheme.

Since wind power generating facilities may cause damage such as noise and bird strikes, conducting environmental impact assessments under the Environmental Impact Assessment Act is compulsory. Examination is conducted on the noises heard during construction and after commencement of the operation of the facility, in addition to the facility's impact on animal ecosystem and on landscapes.

To address the issues surrounding wind power generation, a zoning method is effective. Under the zoning method, environmental information is compiled, and the area where the introduction of wind power generation may be promoted through coordination among persons concerned and relevant organisations and the area where environmental conservation is prioritised are designated in advance. Zoning also has the characteristic of a strategic environmental assessment (SEA: Strategic Environmental Assessment) and could also be evaluated as being a measure for avoiding significant environmental impact from the early stage of the plan. From 2016, the Ministry of the Environment has been conducting model projects of this zoning and organised the zoning methods based on the findings from the model projects. Then, in 2018, the Ministry compiled and released the 'Local Governments' Zoning Manual on Wind Power Generation'. The Manual is targeted at local governments

and systematically describes the methods of preparation, consensus building and utilisation of zoning maps.

With regard to the safety of windmills, confirmation used to be conducted by the Ministry of Land, Infrastructure, Transport and Tourism in accordance with the Building Standards Act and by the Ministry of Economy, Trade and Industry in accordance with the Electricity Business Act. The matters confirmed by the two ministries were summarised, and in April 2014, the procedures were unified into those under the Electricity Business Act. Currently, wind power generation facilities are designated facilities excluded from the application of the Building Standards Act.

In addition, there is a regulation that a wind power generating facility that fulfils the requirements specified in the Civil Aeronautics Act must have obstacle lights and obstacle markings installed.

Offshore wind power

Toward the high goal of '2050 Carbon Neutrality', Japan has announced the Green Growth Strategy (Green Growth Strategy Through Achieving Carbon Neutrality in 2050), as a measure for transforming the industry structure and significantly developing a society and economy while protecting the environment by encouraging private enterprises to make bold innovations and actively introducing and expanding 'green energy'. Offshore wind power generation is one of the 'next-generation renewable energies' which is a priority area under Green Growth Strategy.

In April 2019, the Act on Promoting the Utilisation of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities (Renewable Energy Sea Area Utilisation Act) came into force. As a result, rules with respect to the exclusive occupancy in general sea areas and a framework for coordination with existing users were prepared, and it was decided that unified rules will be established with respect to the installation of offshore wind power generation facilities in general sea areas.

Under the Renewable Energy Sea Area Utilisation Act, a mechanism is incorporated whereby the Minister of Economy, Trade and Industry and the Minister of Land, Infrastructure, Transport and Tourism firstly designate certain sea areas as 'promotion zones for the development of marine renewable energy power generation facilities' (Promotion Zones) for conducting offshore wind power generation. The ministers also appoint through a public tender system the business operators that exclusively occupy these zones to conduct electricity generation and determine the FIT price. The maximum period of occupancy permission for appointed business operators is 30 years. Furthermore, in consideration of the fact that the useful life of the parts of offshore wind power plants is about 30 to 35 years, there is a discussion on presenting the basic idea as to in what cases the permission for exclusive occupancy under the Renewable Energy Sea Area Utilisation Act is renewed.

As for offshore wind power generation business in general sea areas, there are descriptions in the 'Guidelines for Promotion Zones for the Development of Marine Renewable Energy Power Generation Facilities'. The guidelines expressly state that the appropriate way to implement offshore wind power generation businesses in zones of a certain size where power generation facilities can be installed and in zones that may be designated as

Promotion Zones in the future is, in principle, for the state and municipalities to collaboratively implement according to the Renewable Energy Sea Area Utilisation Act, rather than to implement the businesses under the permission for exclusive occupancy in accordance with prefectural ordinances.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar power generation is subject to the application of the FIT scheme and the FIP scheme.

Solar power generation facilities were not subject to the Environmental Impact Assessment Act until 2020. However, it was pointed out that, if land development is not appropriately designed upon installation of solar panels, there is a risk that disasters such as sediment discharge may be triggered. Then, the Environmental Impact Assessment Act was revised. As a result, it became compulsory for solar power generation operators generating electricity of not less than 30MW to conduct environmental impact assessments. At present, the 'Environmental Consideration Guidelines for Solar Power Generation' released by the Ministry of the Environment point out that it is desirable that solar power generation facilities for business use generating electricity of not less than 10kM give consideration to residents of neighbouring communities and the environment. After the introduction of the FIT scheme, entries into solar power generation business through use of this scheme have increased sharply.

The procurement period under the Renewable Energy Special Measures Act of solar power generation facilities generating electricity of not less than 10 kilowatts is 20 years, and this affects the right to use the site. In consideration of the fact that it takes several years to prepare, including installation of solar panels, unless the owner of the land for installation of the solar panels conducts the business, it is desirable to acquire a right of use which enables use for 20 years or more. Thus, operators of such facilities will either execute a lease agreement with the owner of the land or have a superficies right established on the land. When installing solar panels, land development is required in most cases. If land development is not designed appropriately, there is a risk that disasters such as rainwater outflow to surrounding areas, sediment discharge, and landslides may be triggered, which may make it difficult to continue business. The Regulations for Enforcement of the Renewable Energy Special Measures Act provide that land development must be designed in accordance with the provisions of relevant laws and regulations and local ordinances.

Since the FIT scheme commenced, the introduction of renewable energy was promoted with a focus on solar power generation. Meanwhile, it is expected that the disposal of solar panels will reach its peak in the late 2030s, and it is required to take measures systematically to adequately address this situation. In light of these circumstances, by revising the Renewable Energy Special Measures Act in April 2022, a system for accumulating funds for the disposal of solar panels was set up. At present, the obligation for accumulating funds is imposed on all solar power generation facilities generating electricity of not less than 10 kilowatts. In addition, for waste disposal operators to be aware of information on the hazardous substances contained in solar panels and to be able to conduct disposal in an appropriate manner, the Waste Management and Public Cleansing Act (Waste Management Act) provides that industrial waste generating business operators must provide waste

disposal operators with information necessary for the appropriate treatment of the properties of wastes.

In addition, with regard to the designing of power generation facilities, a technical standards conformity obligation is imposed on solar power generation operators under the Electricity Business Act (and the Building Standards Act). Thus, if solar power generation operators request a third party to conduct the design operations, solar power generation operators are required to confirm on their own responsibility whether the power generation facilities conform to technical standards. In 2021, in consideration of the increase in solar power generation facilities and the diversification of their forms of installation, the Ministry of Economy, Trade and Industry enacted the 'Ministerial Order to Provide Technical Standards for Solar Power Generation Facilities' as the new technical standard focused on solar power generation facilities so that solar power generation operators can flexibly and swiftly align with private standards and certification systems.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Hydroelectric power generation

Hydroelectric power generation accounts for approximately 8 per cent of the power sources in Japan. Prior to the oil crisis (1973), development proceeded with a focus on large-scale hydroelectric power generation (larger facilities have power generation capacity exceeding 1 million kilowatts) to meet the rapidly increasing electricity demand. Now in the 21st century, the focus is on the development of small and medium-sized power plants (with average power output of approximately 4,500 kilowatts).

To introduce small and medium-sized hydroelectric dams, the construction of small and medium-sized hydroelectric power plants that utilise existing dams should be promoted. However, if power generation facilities will be installed in multipurpose dams operated by the State by newly acquiring the right of use of these dams, an appropriate amount of the expenses required for the construction of the dams must be paid to the state (article 27 of the Act on Specified Multipurpose Dams). On the other hand, in the case of power generation facilities installed in dams operated by a person other than the state (such as prefectures), the River Act provides that the sharing of expenses for the construction of the dams will be determined by mutual consultations among the persons concerned.

To install hydroelectric power generation facilities (mainly small-sized hydroelectric power generation facilities with power output of less than 1,000 kilowatts) utilising river water, it is necessary to obtain permission from the river administrator. In the case where permission to use river water as agricultural water and tap water has been obtained from the river administrator prior to the installation of power generation facilities and where the river water will also be used for hydroelectric power generation, a registration system is adopted, instead of a licensing system.

At present, the application of the FIT scheme is limited to hydroelectric power generating facilities with power output of less than 1,000 kilowatts that fulfil the requirements for

utilisation in local communities. Thus, hydroelectric power generation facilities with power output of not less than 1,000 kilowatts can only use the FIP scheme. Requirements for utilisation in local communities are requirements for obtaining FIT certification and are imposed for the purpose of promoting utilisation of self-consumption or utilisation by the local community as a whole.

Geothermal power generation

Geothermal power generation is one of the 'next-generation renewable energies' which is a priority area under the Green Growth Strategy. Geothermal power generation is also subject to the application of the FIT scheme and the FIP scheme. The application of the FIT scheme is limited to geothermal power generating facilities that fulfil requirements for utilisation in local communities with power output of less than 1,000 kilowatts. Thus, geothermal power generation facilities with power output of not less than 1,000 kilowatts can only use the FIP scheme.

Among the new business operators that started after the fixed price purchase system was established, some do not always have a good understanding of the spread of underground geothermal resources when conducting development, which raises concerns that such development affects existing geothermal power plants and neighbouring hot springs. For such concerns, local governments can effectively avoid such circumstances by also utilising local ordinances and councils. In this regard, the Agency for Natural Resources and Energy has disclosed the judgment criteria, which may be used as the baseline for confirming the appropriateness of the development plan.

In addition, underground resources (hot springs) will be utilised when carrying out excavation. This means that the excavation will be subject to restrictions under the Hot Springs Act, and it is necessary to obtain permissions or authorisations from prefectural governors.

In addition, in Japan, it is often the case that geothermal resources are in national parks, quasi-national parks, or natural parks, and there are cases where permission must be obtained from the Minister of the Environment or prefectural governors as provided in the Natural Parks Act.

Tidal power generation

While efforts toward practical use are made in Japan, tidal power generation has not reached commercialisation at present since in practice, it is difficult to construct power plants that are cost-effective. This is because the cost for tidal power generation depends to a large extent on the topography and it is considered that suitable lands are concentrated mostly in western Japan, which means that the places where large turbines can be installed will be even more limited, if they are to be installed on such land.

To install tidal power generation facilities in fisheries zones, it is necessary that various laws such as the Fishery Act and the Act on the Protection of Marine Resources are complied with. Under the Fishery Act, if fishery rights are restricted by constructions for public works projects such as landfilling, it is necessary to compensate fishery operators. Thus, expenses other than the costs for installation and operation need to be discussed.

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Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

While there are several types of waste power generation, the basic structure of most waste power generation methods is that electricity is generated by spinning turbines driven by steam generated from the heat generated by the incineration of wastes. As a result of full liberalisation of electricity retailing under the revised Electricity Business Act starting from April 2016, the types of electricity businesses were reviewed, and facilities that transmit electricity utilising electrical systems came to be treated as 'power plants' even if they are waste incineration plants. Furthermore, as a result of this revision, such facilities, in principle, became subject to the system of balancing with the planned value (*keikakuchi doji doryo seido*), whereby electricity generation and transmission is conducted in accordance with the planned transmission amount. In addition, these facilities came to be positioned as 'electricity generation utilities' under laws and regulations, subject to the fulfilment of certain requirements. Therefore, a business operator operating a waste incineration plant that falls under the definition of an electricity generation utility is required to file a notification with the Minister of Economy, Trade and Industry under the Electricity Business Act and must submit a supply plan. Furthermore, the business operator is obliged to follow the orders of the Minister of Economy, Trade and Industry, such as in cases where transmission line end power cannot be secured and it is impossible to follow supply orders for reasons such as periodic inspections or the small amount of waste.

With regard to waste biomass power generation, if waste biomass falls under the definition of 'wastes' as stipulated under the Waste Management Act, strict regulations under the Waste Management Act will be imposed.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

In 2009, the Basic Act on the Advancement of Utilising Biomass came into force, under which the state has developed the 'Basic Plan for Advancement of Biomass Utilisation'. The plan requires each prefecture to endeavour to develop its own 'biomass utilisation advancement plan'.

Biomass power generation is subject to application of the FIT scheme and the FIP scheme. In order to use the FIT scheme and the FIP scheme, it will usually suffice to obtain certification from the Minister of Economy, Trade and Industry. However, in the case where electricity generation subject to the scheme is biomass power generation, the Minister of Economy, Trade and Industry must consult with the Minister of Agriculture, Forestry and Fisheries, the Minister of Land, Infrastructure, Transport and Tourism or the Minister of the Environment in advance (article 9, paragraph 5). Furthermore, under the Regulations for the Enforcement of the Renewable Energy Special Measures Act, additional requirements are imposed on the certification of biomass power generation business plans, as well as the requirements for the certification of ordinary electricity generation business plans. For example, to obtain certification, it is a requirement to periodically calculate the ratio of biomass for the relevant

generation more than once a month and to enter the ratio of biomass and the basis of calculation thereof in the books (article 5, paragraph 1, Item 11, sub-item (a) of the Regulations for Enforcement of the Renewable Energy Special Measures Act).

As to biomass fuel, FIT certification utilising imported wood is on the rise. Under the FIT scheme and the FIP scheme, only wood logged in accordance with laws is certified as fuel. Thus, upon making an application for certification, it is necessary to certify that wood and wood products whose sustainability (legality) is proven are used in the system concerning fuels procurement. Specifically, certification through the forest certification system (a system for an independent third-party organisation to conduct certification based on certain standards of woods or management organisations where or by which appropriate or sustainable forest management is conducted) or CoC (Chain of Custody) certification system (a system for a third-party organisation to evaluate and certify business operators that deal in wood and wood products in terms of the appropriate separated management of wood and wood products made from wood logged from certified forests so that they will not be mingled with those made from wood logged from forests without certification) is required. As to the details of the certification, the Forestry Agency has published the 'Guidelines for Verification on Legality and Sustainability of Wood and Wood Products'.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

The storage of carbon dioxide under the seabed is restricted by the '1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972' (also known as the London Protocol). Since Japan is a party to the London Protocol, it is required to comply with the same. The 'Act on the Prevention of Marine Pollution and Maritime Disaster' (Marine Pollution Prevention Act) was revised in 2007, which regulates compliance with the London Protocol under domestic law. Under the provisions of the said Act, a person intending to dispose of CO2 on the seabed must obtain permission from the Minister of the Environment and must monitor the marine environment when disposing of CO2 on the seabed after obtaining permission.

Under the said Act, the 'Tomakomai CCS Demonstration Business', which is the first large scale CCS demonstration project in Japan with the purpose of conducting utility-scale CCS (Carbon dioxide Capture and Storage), commenced. Then, in November 2019, the large-scale CCS demonstration in Tomakomai achieved its goal of a total CO2 injection amount of 0.3 million tons. About three years thereafter, in October 2022, the industry submitted an urgent proposal requiring the development of business regulations on CCS. Subsequently, in March 2023, the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry decided to launch a subcommittee to discuss the details of the bill to develop the environment for CCS businesses, titled the 'CCS Business Act (tentative name)', and is aiming to submit the bill at an extraordinary Diet session in autumn 2023.

From an international perspective, Japan has judged that the promotion of CCUS (Carbon dioxide Capture, Utilisation and Storage) in Asia has great significance, and the then Minister of Economy, Trade and Industry presented a proposal to launch the 'Asia CCUS Network' at the energy ministers' meeting of the 'East Asia Summit (EAS)' held in November 2020.

Based on this proposal, at the 'First Asia CCUS Network Forum' held in June 2021, the 'Asia CCUS Network' was launched as the platform for the utilisation of CCUS across Asia.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

A typical example of ESG factors is climate change. Since ESG factors have come to be used as one of the factors considered by institutional investors when making investment decisions, companies' efforts at implementing measures against climate change are now linked to their reputations.

In June 2022, the Working Group on Corporate Disclosure of the Financial System Council of the Financial Services Agency published a report on corporate disclosure which included sustainability disclosure (DWG Report). With regard to climate change, the DWG Report proposes that companies should make disclosures on their measures to combat climate change within the framework of 'governance', 'strategy', 'risk management', 'metrics and targets' if they determine that it is important to take measures for climate change.

In January 2023, the Cabinet Office Order on Disclosure of Corporate Affairs was revised. As a result, it has become compulsory for companies to disclose non-financial information that includes climate risks starting from the Annual Securities Report for the business year ending on or after 31 March 2023.

Furthermore, there has been an increase in cases where ESG due diligence (ESGDD) is conducted in the deal process of M&A. Since this makes it possible to proceed with ESG Value Creation (ie, increase in business value and shareholder value that are achieved by promoting breakthrough measures on ESG) at an early stage after the acquisition, ESGDD is an important factor to be taken into consideration.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

In October 2020, the Japanese government declared that it will achieve carbon neutrality, meaning net zero GHG emissions by 2050, and the approaches towards its realisation have been accelerated. Furthermore, the Sixth Strategic Energy Plan sets up the goal of aiming to achieve approximately 36 per cent to 38 per cent as the ratio of renewable energy in Japan's power sources, which is of an ambitious level set in consideration of the GHG emission reduction goal for the fiscal year 2030. Local governments are highly interested in carbon neutrality, and as of March 31, 2023, more than 930 local governments (the population of the

area covered by these local governments accounts for 99.7 per cent of Japan's total population) have announced that they 'aim to achieve zero carbon by 2050'.

The revision of the Renewable Energy Special Measures Act (introduction of the FIP scheme) presented above, together with the revision of the Act on Promotion of Global Warming Countermeasures (disclosure of GHG emissions of companies), can be regarded as the latest law revisions aimed at decarbonisation. In addition, the 'Act on the Improvement of Energy Consumption Performance of Buildings' (Buildings Energy Saving Act) whose purpose is to curb the consumption energy of buildings has also been revised, and it will be compulsory, in principle, for all newly constructed houses and non-residential buildings to conform to the energy-saving standards stipulated under the Buildings Energy Saving Act.

Moreover, according to an analysis conducted by the Ministry of Economy, Trade and Industry, in order to achieve 2050 Carbon Neutrality, it will require investments by the government and the private sector in Green Transformation of more than 150 trillion yen in the next 10 years. Then, in May 2023, for the purpose of promoting Green Transformation, the GX Promotion Act was enacted. The provisions of the said Act include the following:

- promotion of energy transition by making renewable energy the main power source, utilising nuclear power, and promoting introduction of hydrogen and ammonia;
- issuance of GX Economic Transition Bonds to implement support for a bold upfront investment of approximately 20 trillion yen; and
- introduction of a carbon pricing system including an 'emissions trading scheme', 'phased introduction of paid allocations through auction to electricity generation utilities', and a 'carbon levy'.

GX is positioned as part of Japan's strengthening of future industrial competitiveness and economic growth strategy. It is expected that the government and the private sector will together make further investments in the future, accompanied by an increase in business opportunities.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

Malta is a party (both directly and indirectly as a member of the European Union) to the United Nations Framework Convention on Climate Change (UNFCCC), which it ratified in March 1994. It became an Annex I party to the UNFCCC in 2010. Malta ratified the Kyoto Protocol in November 2001 and the Paris Agreement in October 2016.

As an EU member state, Malta is covered by the EU's Nationally Determined Contribution for the reduction of greenhouse gases under the Paris Agreement, which commits the EU to a 40 per cent reduction in greenhouse gases by 2030 compared to 1990 levels.

As a member of the European Union, Malta is obliged to abide by, and implement, the EU's climate-related legislative instruments, including those on renewable energy, energy efficiency and emission reduction.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

As an EU member state, Malta's regulatory policy is primarily driven by EU climate regulation. At European level there is a clear drive towards climate neutrality by 2050. The European Commission acknowledges that although Europe is currently on track to meet its 2030 emission reduction targets and goals enshrined in the Paris Agreement, reaching climate neutrality by 2050 will require more ambitious contributions of all sectors. Malta's Energy and Climate Plan mirrors the EU's objectives and sets out its contributions for 2030 and beyond.

Main national regulatory policies

3 Outline recent government policy on climate matters.

Malta's climate policy for the period up to 2030 is set out in its National Energy and Climate Plan of 2019 (NECP). The plan outlines Malta's national objectives and contributions for 2030 in the areas of decarbonisation, renewable energy and energy efficiency. It also describes the policies and measures required to be implemented to reach these objectives. The adoption of the EU's new climate framework in April 2021 led Malta to launch a public consultation for a Low Carbon Development Strategy (LCDS) which, although aligned with

the NECP, sets out a pathway for emission reduction up to 2050. The measures set out in the plans target the follow sectors: energy, transport, buildings, industry, waste, water and agriculture.

Malta has also focused on adaptation strategies and implemented the National Change Adaptation Strategy, which identifies the principal strategic climate impacts likely to affect Malta and outlines actions to be taken. Some of the actions delineate measures to be taken on the design of buildings that should be improved, if necessary, through enforcement and economic disincentives or incentives; and to maximise passive cooling supported by the education of households.

Additionally, Malta has introduced a number of fiscal instruments, mainly environmental taxes, to discourage the use of environmentally damaging activities such as the burning of fossil fuels, while promoting other alternative and more efficient energy sources. Overall, these taxes can be grouped into three categories: energy, transportation, and pollution and resources. In terms of energy, the taxes comprise:

- carbon taxes and taxes on energy products for transportation such as diesel and petrol;
- taxes on energy products for stationary use (coal, oil products, electricity, natural gas); and
- taxes on greenhouse gases.

With respect to transport, taxes comprise road usage tax, and taxes on the import, sale and registration of motor vehicles. Lastly, pollution and resource taxes comprise taxes on air and water pollution, taxes on waste management and on raw material extraction.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The Climate Action Act (Chapter 543 of the Laws of Malta) is the primary piece of legislation and sets out the guiding principles for the mitigation of GHG emissions. It sets out various obligations for Malta, including the periodical publication of national inventories on Malta's anthropogenic emissions, the regular update of climate policies, the promotion of adequate technologies, sustainable land use management, the enhancement of research cooperation and education.

The reduction of emissions is also regulated by the EU Effort Sharing Regulation (Regulation (EU) 2018/842, which commits each member state to specific reduction targets for those sectors of the economy that fall outside the scope of the EU Emissions Trading System (ETS), such as transport, agriculture and waste.

Renewable energy matters are mainly governed by the Promotion of Energy from Renewable Sources Regulations (Subsidiary Legislation 545.35) which set out the legal framework for the development of renewable energy. The Regulations establish an EU wide binding renewable energy target for 2030 of at least 32 per cent. The Regulations were revised in 2021 to reflect the revisions to the Renewable Energy Directive, and introduces new measures for various sectors of the economy, particularly on heating and cooling and transport, where progress has been notably slower.

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Other main climate-related laws and regulations include:

- the Energy Efficiency Regulations (Subsidiary Legislation 545.33), which establish a framework for the promotion of energy efficiency to ensure the achievement of the Energy Union's 2020 headline targets on energy efficiency of 20 per cent and its headline targets on energy efficiency of at least 32.5 per cent for 2030. These regulations also lay down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy;
- Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations (Subsidiary Legislation 545.37);
- the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations (Subsidiary Legislation 549.77), which provide a framework for the prevention and control of pollution arising from industrial activities;
- the European Union Greenhouse Gas Emissions Trading Scheme for Stationary Installations Regulations (Subsidiary Legislation 423.50); and
- the European Union Greenhouse Gas Emissions Trading Scheme for Aviation Regulations (Subsidiary Legislation 423.51).

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The Malta Resources Authority, a body set up within the Ministry for the Environment, Energy and Enterprise, is the entity responsible for certain climate-related matters, namely climate change reporting and the operation of the ETS, for both stationary installations and aviation.

The Energy and Water Agency, also set up within the Ministry for the Environment, Energy and Enterprise, is the entity tasked with formulating and implementing national policies in the energy and water sectors. With respect to climate action, the agency is responsible for the implementation of the legislation and the policy measures related to renewable energy and energy efficiency. The formulation and implementation of national support schemes promoting the use of renewable energy also fall within the Agency's competence.

Additionally, the Authority for Transport in Malta is responsible for implementing measures to reduce emissions in the transport sector. In 2016, the Authority adopted the Transport Master Plan, which has a horizon up to 2025 and sets out several measures aimed at achieving low-emission mobility, including the electrification of vehicles.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

As reported in Malta's 2030 National Energy and Climate Plan, the main contributors to GHG emissions are the following:

- Energy and transport: the energy industry and the transport sectors are the two main contributors of CO_2 emissions, together making up over 80 per cent of total CO_2 emissions. These sectors also contribute to nitrous oxide emissions with a combined share of approximately 11 per cent of total emissions.
- Waste and agriculture: these two sectors are the main contributors of methane emissions, with the waste sector accounting for approximately 80 per cent of the total share of methane emissions, and agriculture accounting for approximately 18 per cent. The agriculture sector is the largest contributor of nitrous oxide emissions, with a share of over 70 per cent, while the waste sector accounts for just over 12 per cent.

Malta has an obligation, under the Effort Sharing Decision, to reduce its GHG emissions by 19 per cent compared with 2005.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Major GHG reduction projects in the energy sector include replacing inefficient conventional electricity production infrastructure and introducing liquefied natural gas (LNG) as fuel for power generation. To this end, Malta closed its inefficient Marsa Power Station, completed and placed in operation the 200MW interconnector with the European grid, and commissioned a new 205MW gas-fired, high-efficiency combined cycle gas turbine power plant as well as an LNG facility for the provision of natural gas. In addition, the 149MW power plant, which comprises eight diesel engines, has been converted to run on natural gas instead of heavy fuel oil.

In the waste sector, Malta has commissioned a waste to energy facility for treatment of non-recyclable waste which will be diverted away from landfills and converted into green energy.

Additionally, Malta participates in the EU ETS, which applies to emissions from power generation, aviation and as certain energy-intensive industrial sectors. The EU is currently seeking to extend the application of the ETS to road transport and buildings.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Solar energy has attracted substantial investment in the last decade and continues to develop. This is mainly due to the national support schemes implemented by the government. The objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic (PV) systems, enabling it to reach its renewable energy targets. Policy measures to achieve this goal are already in place, the main one being the financial support for PV installations. Unlike other EU member states, Malta has continued to apply feed-in tariff schemes for small PV installations. Additionally, competitive processes are launched on a regular basis for the allocation of support for PV systems of at least 1MW peak.

Malta is now exploring the potential for offshore wind.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Obligations to reduce GHG emissions mainly arise out of the emissions trading system (ETS) regulations, the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations (the IPPC Regulations), and the Effort Sharing Regulations, which commit Malta to a 19 per cent reduction In GHG emissions compared to 2005.

The ETS works by putting a limit on overall emissions from certain installations and aircraft, which limit is reduced each year. Within this limit, companies can buy and sell emission allowances as needed. This 'cap-and-trade' approach gives companies flexibility to cut their emissions in the most cost-effective way. The ETS covers certain stationary installations and aircraft operating with a valid licence granted by the civil aviation authorities of Malta, or aircraft that, although not licensed by the civil aviation authorities of Malta, have Malta identified as the being the state with the greatest attributed emissions from flights performed by that aircraft in the base year.

The IPPC Regulations are the main instrument regulating pollutant emissions from 'high-risk' industrial installations, such as energy plants and certain waste management activities. In terms of these regulations, installation operators are required to operate within the emission limit values set out in the permit for the particular activities carried out by the installation. They are also required to operate the installation in accordance with the best available techniques. Installation operators must monitor, record and report annual emissions to the competent authority in accordance with the conditions laid down in the permit.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Operators of certain installations must obtain a permit, prior to commencement of operations, under both the emissions trading regulations and the IPPC Regulations. The operator must submit an application containing information about the operator and the installation activities, the raw materials to be used that are likely to lead to emissions of GHG gases, the sources of the emissions and any other information that the competent authority may require. To be granted a permit under the former regulations, the competent authority must be satisfied that the operator is capable of complying with the requirements of the regulations and the conditions of the permit.

The requirements for obtaining a permit under the IPPC Regulations are similar to those under the ETS. The operator must provide the competent authority with information on the operator, the installation and its activities, raw and auxiliary materials to be used, sources of emissions, and the proposed technology and techniques for preventing or, where not possible, reducing emissions. The operator may also be required to place a financial guarantee in favour of the competent authority to secure its obligations under the permit. The competent authority shall take into account the applicant's suitability to undertake the proposed activity, having regard to the operator's qualifications, experience and technical competence, and its financial capacity to comply with its obligations under the permit.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

Under the ETS, installation and aircraft operators must submit a monitoring plan describing the measures by which annual emissions from the installation will be monitored and reported. The monitoring plan must be approved by the competent authority and will serve as the accepted methodology for monitoring in that installation. On an annual basis, the operator of the installation must submit verified emissions reports to the competent authority. The reports must first be verified by a competent, independent accredited verifier before being submitted to the competent authority. A verification report issued by the verifier must accompany the emissions report when this is submitted to the authority.

In terms of the regulations governing industrial emissions, operators must include in the permit application measures for monitoring emissions. The competent authority shall ensure that the permit conditions contain detailed monitoring requirements, including the methodology, frequency and evaluation procedure for monitoring emissions. At least once annually, the operator must provide the competent authority with information and results obtained from emission monitoring.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

As a member of the EU, Malta has implemented the emission trading system (ETS), which regulates GHG emissions for certain stationary installations and aircraft. The ETS works by putting a limit on overall emissions from certain installations, which is reduced each year. Within this limit, companies can buy and sell emission allowances as needed.

To achieve the 2030 goals and the commitments undertaken in the Paris Agreement, the sectors covered by the ETS must reduce their emissions by 43 per cent compared to 2005 levels. This will require an annual decrease in emission allowances of 2.2 per cent for the period between 2021 and 2030.

Additionally, under the IPPC regime, installation operators are required to operate within the emission limit values set out in the permit for the particular activities carried out by the installation.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

Directive 2003/87/EC, which establishes the scheme for greenhouse gas emission allowance trading within the EU, requires that all allowances be held in the Union registry. The registry system provides for the electronic recording of issuance of allowances and of all transactions involving allowances or units derived from Kyoto Protocol project-based mechanisms performed by operators participating in the EU Emissions Trading System. The registry system records the following elements:

- allowances and units that are issued to and held in installation or aircraft operator accounts;
- annual verified reported emissions for installations or aircraft operators;
- transfers of allowances and units into or out of accounts and surrendering, cancellation and replacement of allowances; and
- annual compliance statements of emissions.

In Malta, the role of national registry administrator is held by the Malta Resources Authority. Accounts of aircraft and operators of installations in Malta are opened and administered by the national registry administrator.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Operators of installations and aircraft subject to the compliance requirements of the EU ETS must have a holding account opened in the Union registry and are required to purchase allowances. In order to increase the pace of emissions cuts, the overall number of emission allowances in the current ETS phase will decline at an annual rate of 2.2 per cent, compared to the previous 1.74 per cent.

Operators must account for reported emissions by surrendering an amount of allowances equivalent to the quantity of actual emissions reported in the previous year's annual emission report. This function is carried out through the registry account.

An operator holding in their account a quantity of allowances that is less than the actual emissions to be covered by surrendered allowances must acquire additional allowances or use units derived from Kyoto Protocol project-based mechanisms. An operator with a quantity of allowances greater than the amount of emissions to be covered by surrendered allowances can either hold on to excess allowances or sell them. An operator may also borrow allowances from the subsequent year to cover any shortfall in allowances during a particular year; however, no borrowing of allowances can take place between trading periods.

The administrator shall cancel allowances at any time at the request of an operator of an installation holding those allowances.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

In Malta, the EU emission trading system (ETS) is applied and covers both stationary installations and aircraft.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No standard agreements on GHG emissions trading are used in Malta.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

As reported in the National Energy and Climate Plan of 2019 (NECP), the provisional average final energy consumption for the period 2016–2018 amounted to 622.7ktoe. The National Statistics Office recently reported that during 2020, the electricity supply in Malta comprised net generation from power plants (73.6 per cent), supply from net imports (16.7 per cent) and renewable sources (9.7 per cent). In 2020, the gross production consisting of the electricity supplied from power plants and from renewables amounted to 2,143.1GWh, with the remaining 419.8GWh imported through the interconnector.

The main pieces of legislation governing GHG emissions are the emission trading system (ETS) Regulations, the IPPC Regulations and the EU's Effort Sharing Regulation, all of which contain measures to limit and reduce GHG emissions. In addition, the Energy Efficiency Regulations provide a framework for the promotion of energy efficiency and lay down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy. In terms of energy efficiency, national policy emphasises the importance of energy efficiency in buildings, which is regulated by the Energy Performance of Buildings Regulations (Subsidiary Legislation 623.01). These Regulations promote the improvement of the energy performance of buildings within the territory of Malta, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.

EU energy efficiency legislation requires member states to achieve cumulative end-use energy savings for the period 2021 to 2030, equivalent to new annual savings of at least 0.8 per cent of final energy consumption. Malta, however, in view of its specific characteristics and small size of the energy markets, is required to achieve cumulative end-use energy savings equivalent to new savings of 0.24 per cent of final energy consumption for the period 2021 to 2030.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

In the transport sector, Maltese law imposes an obligation on importers of road diesel and petrol to increase the share of biofuels in the fuel mix and reduce the greenhouse intensity. The Lifecycle Greenhouse Gas Emissions from Fuels Regulations (SL 423.48) require a reduction of the greenhouse gas intensity of transport fuels by a minimum of 6 per cent by 2020 and thereafter. Fuels intended for the use of road vehicles, non-road mobile machinery (including inland waterway vessels when not at sea) and agricultural and forestry tractors

(and recreational craft when not at sea) that are placed on the market should be reported under the Regulations and are included in the 6 per cent reduction obligation. These fuel types include petrol, diesel and biofuels used in road transport, and the different gasoils intended for use by non-road mobile machinery and agricultural and forestry tractors.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

The production of renewable energy in Malta, as a share of electricity supply, has increased significantly over recent years. While it stood at 4.4 per cent in 2015, it rose to 8.2 per cent by 2019 and increased further to 12.2 per cent in 2021. This increase results from the adoption of solar energy, which accounted for more than 97 per cent of total renewable energy production in Malta in 2019. Solar energy has, so far, been the predominant viable renewable energy source in Malta and is likely to continue to be for the next decade. Other renewable technologies, such as offshore wind are, however, being explored as potential sources of electricity in the period between 2030 and 2050.

The objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic (PV) systems. This will enable Malta to maintain, and even exceed, its 11.5 per cent renewable energy share (RES) target in gross final energy consumption by 2030. Policy measures to achieve this goal are already in place, the main one being the financial support for PV installations. Unlike other EU member states, Malta has continued to apply feed-in tariff schemes for small PV installations. Additionally, competitive processes are launched on a regular basis for the allocation of support for PV systems of at least 1MW peak. These ongoing schemes have ensured that Malta remained on track towards the achievement of its RES target for 2030.

Generation of electricity from renewable sources in primarily governed by the Promotion of Energy from Renewable Sources Regulations. The regulations aim to stimulate investment in renewable energy and drive cost reductions in technologies. They also govern the uptake of renewables in the transport sector as well as in heating and cooling and set out common principles and rules for renewable energy support schemes, the rights of consumers to produce and consume renewable energy and to establish renewable energy communities.

Wind energy

20 Describe, in general terms, any regulation of wind energy.

Malta has no specific regulation on wind energy. However, to construct and operate a wind energy plant, a development permit from the Planning Authority is required. An EIA or AA

may also be required depending on the location of the plant. The operator must also obtain a generation licence from the Regulator for Energy and Water Services.

Solar energy

21 Describe, in general terms, any regulation of solar energy.

Solar energy is regulated through the Promotion of Energy from Renewable Sources Regulations (SL545.35), which require support schemes to be put in place to incentivise renewable energy generators. The success of PV deployment in Malta has largely been due to the incentives offered through various schemes, such as feed-in tariff schemes for small PV installations, and financial grants for solar water heaters. Additionally, competitive processes are launched on a regular basis for the allocation of support for PV systems of at least 1MW peak.

The application of feed-in-tariffs is regulated by the Feed-In Tariff Scheme (Electricity Generated from Solar Photovoltaic Installations Regulations (SL545.27), while the competitive processes for the allocation of support for PV systems are regulated by the Competitive Bidding Rules for Renewable Sources of Energy Installations Regulations (SL545.39).

The installation of a PV system may require both a development planning permit from the Planning Authority and a generating licence from the Regulator for Energy and Water Services.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Malta does not specifically regulate hydropower, geothermal, wave and tidal energy.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

At present there is no specific regulation on the production of energy based on waste; however, the government is currently commissioning a waste-to-energy plant to enable increased diversion of residual waste from landfill.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Biofuel for transport is regulated through both the Promotion of Energy from Renewable Sources Regulations (SL545.35), and Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations (SL545.37). Additionally, the Lifecycle Greenhouse Gas Emissions from

Fuels Regulations (SL423.48) apply specifically to petrol, diesel and biofuels used in road transport.

Malta is committed to achieving a share of renewable energy within the final consumption of energy in the transport sector of at least 14 per cent by 2030. This target is expected to be achieved through means of a legal obligation on importers of petrol and diesel to blend an increasing share of biofuels in their mix.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Malta has no specific regulation on carbon capture and storage. However, studies on carbon capture are contemplated in the Low Carbon Development Strategy (LCDS).

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Climate matters are not typically considered in M&A transactions.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

As an EU member state, Malta is committed to becoming climate neutral by 2050. To this end, in June 2021, Malta launched for public consultation its Low Carbon Development Strategy (LCDS), which identifies the most cost-effective pathways to mitigating emissions and increasing renewable energy generation.

Malta's objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic systems. It is furthermore seeking to join with other Mediterranean countries to create a green energy hub, to accelerate the EU's drive for a decarbonised, energy-independent future. The aim is to create within the Mediterranean a centre of renewable energy investment, with a focus on offshore renewables and new energy interconnections between EU and non-EU Mediterranean countries, to facilitate European investment in green energy.

In the transport sector, the LCDS explores a number of measures to encourage a shift away from private car use in Malta and to support a quick transition to electric vehicles. To this

end, the LCDS considers various measures, including the enhancement of the financial grant scheme currently in place to incentivise the purchase of electric vehicles and the electrification of scheduled public transport buses.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

Taiwan is not a contracting party to international agreements or regulations on climate matters. However, with an effort to incorporate the greenhouse gas (GHG) emission reduction goals and principles of international climate agreement and regulations, explicit references are made to the Paris Agreement (2015) and the United Nations Framework Convention on Climate Change (1994) (UNFCCC) in key climate-related domestic legislations and policies. While reference to international agreements or regulations does not entail their legally binding effect, it reflects the eagerness of the Taiwanese government to actively adopt measures that promote compliance and implementation.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

While Taiwan is not specifically obligated to reduce GHG emissions under any international agreements or regulations, the government has proactively taken the initiative in devising policies and promulgating legislations aimed at climate mitigation and adaptation. The Greenhouse Gases Reduction and Management Act (2015) (GGRMA) was promulgated in light of the Kyoto Protocol (1997) UNFCCC and last amended and renamed the Climate Change Response Act (CCRA) on 15 February 2023 to reflect the 2050 net zero commitment in line with the Paris Agreement.

Main national regulatory policies

3 Outline recent government policy on climate matters.

The National Development Council published Taiwan's Pathways to Net-Zero Emissions in 2050 (Pathways) on 30 March 2022, with a target to reach the island's net-zero GHG emissions by 2050. The Pathways focus on four main strategies in energy, industry, lifestyle and social transition and intend to implement a series of measures in pursuit of the net zero emissions goal. As part of the climate-related actions envisaged under the Pathways, the GGRMA underwent a major overhaul to incorporate the principles of the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), UNFCCC and Paris Agreement. Essentially, the GGRMA was renamed the CCRA, which denotes a shift in focus from GHG emissions to climate change as a whole. The newly amended CCRA took effect on 15 February 2023. The

CCRA codified the long-term goal to attain net-zero GHG emissions by 2050 and includes a series of enhanced and new GHG reduction measures as well as adaptation measures.

The Financial Supervisory Commission (FSC) announced the Corporate Governance 3.0: Sustainable Development Roadmap in 2020, and then the Sustainable Development Roadmap for Listed Companies in January 2022 with an aim to strengthen the reporting of ESG information and enhance the listed companies' GHG emission disclosure disciplines. Green Action Plan 3.0 was announced by the FSC in September 2022 to promote the effective operation of green and sustainable financial markets.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The main national laws and regulations on GHG emission reduction are:

- Climate Change Response Act (previously, Greenhouse Gases Reduction and Management Act) (effective as of 1 July 2015; last amended on 15 February 2023) and its ancillary regulations under enactment;
- Management Regulations of Greenhouse Gases Emission Reporting (effective as of 5 January 2016);
- Directions for the Review of Greenhouse Gases Emission Accounting (as announced in May 2022); and
- Businesses Subject to Accounting, Registration and Verification of Greenhouse Gas Emission Sources (effective as of 7 January 2016; amended on 31 May 2023).

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The competent authority for climate regulation is the Environmental Protection Administration (EPA). Under the CCRA, the EPA is mainly in charge of overseeing the reporting of businesses subject to mandatory accounting of GHG emission records each year. With a view to implement the Pathways, the newly amended CCRA confers power and impose an obligation on the National Council for Sustainable Development to coordinate, delegate functions and consolidate guiding policies and climate change-related affairs across agencies. Additionally, the Ministry of Economic Affairs, through its Bureau of Energy, is responsible for devising energy-related laws, regulations and policies, which are critical to facilitating Taiwan's climate change policies and have lasting effect on climate change.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Based on Taiwan's GHG National Inventory Report (2022), the total amount of net GHG emissions in Taiwan was approximately 263.226 million tons (CO_2 equivalent) in 2020 (latest available data), which is 0.82 per cent lower than the previous year. The main sources of GHG emissions in Taiwan (million tons (CO_2 equivalent) include energy (259.385), industrial processes and product use (19.794), agriculture (3.345), land use, land-use change and forestry (-21.905) and waste (2.607).

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Currently, the development of renewable energy is integral to Taiwan's GHG emission reduction policy. In 2016, the Taiwan government adopted a new energy policy to embark on nationwide energy transition. The Energy Transition White Paper (2020) sets out details of policy implementation with energy security and GHG emission reduction as the primary policy goals. The implementation of Taiwan renewable energy policy is evident in the booming development of offshore wind farms and solar projects.

Pursuant to the GHG Emission Offset Programme under the Greenhouse Gases Reduction and Management Act (GGRMA), so far 91 offset projects from various sectors have been registered on the government-run portal, and 24 of them have been granted carbon credits.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

While Taiwan does not currently have a carbon trading scheme, a renewable energy certificate (T-REC) scheme has been adopted along with the policy to achieve the goal of generating 15.1 per cent of electricity through renewable energy by 2025. So far (as of July 2023), a total of 2,961,860 T-RECs have been issued, and a total of 2,691,812 T-RECs (by a total of 11,990 transactions) have been traded via the T-REC Trading Platform.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Taiwanese law does not impose obligations for GHG emission limitation, reduction or removal. Aside from Taiwan's policy towards net-zero emissions, businesses are offered incentives under laws and regulations to voluntarily adopt measure to reduce GHG emissions or comply with GHG emission performance standard. The incentives may include granting or awarding credits to offset the GHG emissions, subsidies, monetary award, and government-certified labels.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

The Climate Change Response Act (CCRA) does not require specific permits or approvals for GHG emission. Based on the newly amended CCRA, businesses may be required to obtain approval for emissions of GHGs with high global warming potential or for the emission of such GHGs in product manufacturing, export, import and sale.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

Under the CCRA, businesses in specific fields are required to conduct accounting, reporting and verification of their GHG emission records. Businesses Subject to Accounting, Registration and Verification of Greenhouse Gasses Emission Sources is a regulation that sets forth a list of industry-specific businesses that are major GHG emission sources subject to mandatory accounting, reporting, and verification of GHG emissions. In addition, any business whose GHG emission reaches 25,000 tons or more per year are required to report each year its GHG emission in the previous year. Businesses are to report their accounting results to the Environmental Protection Administration's online GHG Emissions Registry each year and be subject to the verification by government-approved institutes each year.

For listed companies, the Taiwan Stock Exchange has amended the relevant rules by adding ESG performance indicators to be disclosed in the ESG reports of all listed companies, including their Scope 1 and Scope 2 emissions.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

The Climate Change Response Act (CCRA) provides for a GHG emission cap and trade scheme where GHG emission allowances may be allocated, auctioned and traded. However, such a scheme has not yet been devised and hence, businesses have not been allocated a GHG emission allowance.

Nonetheless, businesses may participate in a GHG emission offset project by registering with the Environmental Protection Administration (EPA) and applying for emission credits. The EPA maintains voluntary participation in offset projects under the Regulations on the Offset Project for GHG Emission (last amended on 27 December 2018). An applicant is required to adopt a reduction method approved by the UNFCCC Clean Development Mechanism or the EPA. The report for the offset project must be validated by a verification institute. The applicant is required to submit a validated project report for registration with the EPA. The applicant must implement said project report in accordance with its description, including all physical features, then complete a monitoring report for the application of reward credit with the EPA. The newly amended CCRA includes an offset regime that provides a mandatory offset project for designated businesses. The specifics of the mandatory offset regime has yet to be devised by the EPA.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

According to the CCRA, businesses that receive allowances are required to apply for an account at a designated online platform of the EPA for transfers and transactions of allowances. Currently, Taiwan does not have registries specifically set up for GHG emission allowances.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

According to the CCRA, businesses listed as sources of GHG emissions may be allocated a GHG emission allowance. The government has not yet promulgated regulations pertaining to the details of the requirements and implementation of GHG emission allowances.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

According to the Climate Change Response Act, the trading of GHG emission allowances is only permitted under the regulatory cap-and-trade scheme, which has not yet been implemented and will be carried out until all relevant supporting measures are in place.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

Currently, there are no standard agreements on GHG emissions trading used in Taiwan.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

According to the Bureau of Energy statistics of 2022, the total energy production in Taiwan is 140.24 million kilolitres of oil equivalent in 2022. Of this total, coal and coal products contributed 29.7 per cent, crude oil and petroleum products constituted 43.7 per cent, natural gas shared 19.1 per cent, and nuclear provided 4.9 per cent. The total energy consumption in Taiwan is 83.13 million kilolitres in 2022. Of this total, coal and coal products contributed 7.9 per cent, petroleum products provided 49.5 per cent and natural gas shared 7 per cent. With respect to the related GHG emissions, the total CO2 emissions in 2021 (latest statistics available) were 265.7 million metric tons. Of this total, coal and coal products accounted for 159.83 million metric tons, crude oil and petroleum products contributed 45.19 million metric tons and natural gas constituted 54.56 million metric tons.

In Taiwan, obligations relating to energy minimisation and energy efficiency improvement are governed under various laws and regulations, including, without limitation, the following:

- Energy Administration Act;
- Renewable Energy Development Act;
- Regulations on the Management of Electricity Users with Certain Contracted Capacity and the Obligations to Install Renewable Energy Generation Facilities;
- Energy Saving Requirements for Designated Energy Users;

- Energy Saving and Energy Efficiency Requirements for Textile Industry (similar regulations have been promulgated for the electronic, petrochemical, paper manufacturing and other industries);
- Operating Directions for Prohibition of Use of Halogen Bulbs and Incandescent Bulbs;
- Operating Directions for Indoor Air Conditioning Temperature On-site Inspection;
- Operating Directions for Air-Conditioner On-site Inspection; and
- Energy Saving Design Standards for New Buildings.

Companies may apply for the use of energy-saving labels for their products if the products meet the requirements set forth under the law. Factories that have passed the standard promulgated by the Industrial Development Bureau may apply for the green factory label for their factory buildings. Except for the trading scheme of GHG emission allowances under the Climate Change Response Act (CCRA), there is currently no scheme for the trade of accounting units or credits with respect to energy savings.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

In Taiwan, energy is consumed to meet the demands of power generation, industrial, transportation, agriculture, forestry and fishery, services and residential sectors. Except for the CCRA, there is no general law or regulation covering GHG emissions in all the aforesaid sectors. The public and private persons are required to comply with the applicable laws and regulations based on the sector they belong to.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

According to the Bureau of Energy's statistics of 2022, the total energy production in Taiwan was 140.24 million kilolitres of oil equivalent in 2022. Of this total, biomass and waste accounted for 1.21 per cent, hydro provided 0.4 per cent, and geothermal, solar PV and wind shared 0.99 per cent. The total energy consumption in Taiwan was 83.13 million kilolitres in 2022. Of this total, biomass and waste accounted for 0.57 per cent, electricity constituted 32.12 per cent and heat shared 2.86 per cent. Currently, Taiwan is undergoing a major energy transition, primarily based on 'promote green energy, increase natural gas, reduce coal-fired, achieve nuclear-free' to ensure a stable power supply and to reduce air pollution and carbon emissions.

With respect to the obligations for renewable energy production or use, any electricity user entering into an electricity consumption agreement with Taiwan Power Company (Taipower)

with a contracted capacity of 5,000kW or above is obligated to install on its own or provide space to instal renewable energy generation facilities or energy storage systems with a certain installed capacity, or purchase a certain amount of renewable energy and the associated Taiwan Renewable Energy Certificate (T-REC), as stipulated under the Regulations on the Management of Electricity Users with Certain Contracted Capacity and the Obligations to Install Renewable Energy Generation Facilities.

Renewable energy producers may register the volume of renewable energy generated with National Renewable Energy Certification Center under the renewable energy certificate mechanism (ie, T-REC). One T-REC represents 1,000kWh of renewable energy generated. T-RECs are bundled with the electricity sold, which means renewable energy producers can only transfer the associated T-RECs to the same private offtaker that had purchased the electricity.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Generally, special permits and approvals issued by the Ministry of Economic Affairs (MOEA) in accordance with the Electricity Business Act and Renewable Energy Development Act and their ancillary regulations are required for a renewal energy business' incorporation, construction and operation. For renewable energy projects with an installed capacity of 2MW or more, an electricity business licence is required.

Wind energy projects may be subject to environmental impact assessment (EIA) in accordance with the Environmental Impact Assessment Act if certain conditions are met. For wind energy projects located in the areas delineated under the Coastal Zone Management Act, relevant coastal development approvals are required. Wind energy projects may also be subject to the permitting requirements under the Wildlife Conservation Act, Fisheries Act, Noise Control Act or Underwater Cultural Heritage Preservation Act, etc, depending on siting.

For renewable energy, the feed-in tariff (FiT) scheme is adopted by the Taiwanese government in accordance with the Renewable Energy Development Act with a view to promote renewable energy production and consumption. Note, however, that for offshore wind projects, an auction mechanism has been introduced such that the applicable FiT for auction projects would be lower than the announced FiT. According to the 2023 FiT of Renewable Energy announced by the MOEA, the FiT rates for wind energy in 2023 are as follows:

Renewable Energy Type	Category	Capacity	2023 FiT (NTD/kWh)		
Wind	Onshore	1kW and above but under 30kW	7.4110		
		30kW and above	Installed LVRT		2.1286
			Non-installed LVRT		2.0949
	Offshore	1kW and above	Fixed 20-year tariff (upper limit on the tariff)		4.5085
			Phased Tariffs	1st 10 Years	5.1438
				2nd 10 Years	3.4026

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Solar energy

21 | Describe, in general terms, any regulation of solar energy.

In addition to the electricity business-related permits and approvals, if located in any important wetland area, solar projects must conduct an EIA as well. For solar projects located in designated areas under the Coastal Zone Management Act, relevant coastal development approval is required.

Solar project developers are also required to comply with the laws and regulations relating to land utilisation, such as the Regional Plan Act and Regulations Governing the Use of Non-Urban Land. Specifically, for solar projects that utilise agricultural land, developers should obtain the relevant permits and approvals following the Agricultural Development Act and its operational rules. If the project site is located on land designated as reserved land for indigenous people, developers are obliged to consult and obtain the consent of the local indigenous tribes in accordance with the Indigenous Peoples Basic Law.

The FiT rates for Solar PV energy in 2023 are as follows:

Renewable energy type	Category	Capacity		2023 FiT		2023 FiT & roof-top system grid-connection fee	
				Maximum first phase rate (NTD/kWh)	Maximum second phase rate (NTD/kWh)	First phase (NTD/kWh)	Second phase (NTD/kWh)
Solar PV	Roof-top system	1kW and above but under 20kW		5.8952	5.7848	5.8952	5.7848
		20kW and above but under 100kW	Without grid-connection fee	4.5549	4.4538	4.5549	4.4538
			With grid-connection fee	4.4861	4.3864	4.5549 (50kW and above but under 100kW)	4.4552 (50kW and above but under 100kW)
		100kW and above but under 500kW		4.0970	3.9666	4.1934	4.0630
		500kW and above		4.1122	3.9727	4.1535 (500kW and above but under 2000kW)	4.0140 (500kW and above but under 2000kW)
	Ground-mounted system	1kW and above		4.0031	3.8680	–	–
	Floating system	1kW and above		4.3960	4.2612	–	–

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Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Similar to other renewable energy projects, hydropower, geothermal, wave and tidal energy projects are subject to the electricity generation business-related permits and approvals, EIA, coastal development approvals, land utilisation-related permits and approvals, and the consultation process under the Indigenous Peoples Basic Law. Hydropower energy projects are additionally subject to the Water Act, and geothermal energy projects are subject to the Mining Act. For wave and tidal energy projects, given their potential impact on marine life, developers should comply with the permitting requirements under the relevant laws and regulations, such as the Wildlife Conservation Act, Fisheries Act, Noise Control Act and Underwater Cultural Heritage Preservation Act.

The FiT rates for hydropower, geothermal and marine energy in 2022 are as follows:

Renewable energy type	Category	Capacity	2022 FiT (NTD/kWh)		
Hydropower	–	1kW and above but under 2,000kW	4.1539		
Geothermal	–	1kW and above but under 2,000kW	Fixed 20-year tariff		5.7736
			Phased tariffs	1st 10 Years	7.0731
				2nd 10 Years	3.6012
		2,000kW and above	Fixed 20-year tariff		5.1956
			Phased tariffs	1st 10 Years	6.1710
				2nd 10 Years	3.5685
Marine	–	1kW and above	7.3200		

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

In addition to the electricity business related permits and approvals, EIA, coastal development approvals, land utilisation-related permits and approvals, and the consultation process under the Indigenous Peoples Basic Law, waste-to-energy project developers are required to comply with the permitting requirements under the Waste Disposal Act and its ancillary regulations, as well as the permitting requirements under the pollution control-related laws and regulations, such as the Air Pollution Control Act and Stationary Pollution Source Installation, Operating and Fuel Use Permit Management Regulations.

The FiT rates for waste energy in 2023 are as follows:

Renewable energy type	Category	Capacity	2023 FIT (NTD/KWH)
Waste	General and general industrial wastes	1kW and above	3.9482
	Agricultural waste	1kW and above	5.1407

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Similar to other renewable energy projects, biofuel and biomass energy projects are subject to the electricity generation business related permits and approvals, EIA, coastal development approvals, land utilisation related permits and approvals, and the consultation process under the Indigenous Peoples Basic Law.

Specifically, when applying for the Recordation Approval under the Regulations Governing the Installation of Renewable Energy Power Generation Equipment, biofuels and biomass energy project developers are required to issue an undertaking that the fuel used for the power generation is 100 per cent agricultural and forestry plants, biogas or processed domestic organic waste.

In terms of waste management and control, biofuel and biomass project developers should comply with the permitting requirements under the Waste Disposal Act and its ancillary regulations, and pollution control-related laws and regulations, such as the Air Pollution Control Act and Stationary Pollution Source Installation, Operating and Fuel Use Permit Management Regulations.

The FiT rates for biomass energy in 2023 are as follows:

Renewable energy type	Category	Capacity	2023 FiT (NTD/kWh)
Biomass	Non-anaerobic digestion facilities	1kW and above	2.8066
	Anaerobic digestion facilities	1kW and above	7.0089
	Agricultural and forestry plants	1kW and above	3.1187

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Currently, there is no policy on or regulation for carbon capture and storage in Taiwan. Given that the International Energy Agency (IEA) considers carbon capture and storage a crucial part of reducing GHG emissions, the amended CCRA seeks to extend the GHG emission reduction regime by regulating carbon capture, utilisation and storage to keep in line with the IEA's net-zero emissions roadmap.

For carbon storage, the proposed amendment stipulates that enterprises are required to apply to the central competent authority for approval by submitting an action plan or implementation plan. Enterprises approved for carbon storage shall conduct carbon storage in accordance with the approved content, continuously carry out environmental monitoring and regularly report the monitoring records to the competent authority.

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CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

On regulatory compliance, when conducting legal due diligence in M&A transactions, it is advisable to check whether the target company is subject to the applicable laws governing greenhouse gas emissions (such as the Climate Change Response Act), and, if yes, whether the target company has duly performed its obligations. For example, if the target company's emission source is subject to the accounting and registration requirements under the law, the target company would be required to perform its reporting obligations accordingly.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

The amended Climate Change Response Act has a carbon fee regime in place against sources of GHG emissions for direct and indirect emissions, the regime of which is closely connected to the carbon border adjustment measures such as EU's proposed Carbon Border Adjustment Mechanism. Merchandise imported into Taiwan may be subject to certain carbon border measures in line with the carbon charges regime. The details of the carbon fee regime is being reviewed by the EPA, which intends to start collecting carbon fees in the second half of 2024.

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Summary

MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

The United States is a party to the Paris Agreement. The United States signed the Paris Agreement in April 2016 and later ratified it, committing, alongside nearly 200 other countries, to limit global warming to 1.5°C above pre-industrial levels. In June 2017, the Trump administration announced that the United States would pull out of the Paris Agreement, and the United States did briefly withdraw from the Paris Agreement on 4 November 2020; however, following the election of President Joe Biden, the United States announced that it would re-join the Paris Agreement. President Biden used executive authority to re-enter the Agreement, which took effect on 19 February 2021. In April 2021, the United States submitted a new 'Intended Nationally Determined Contribution' (NDC), committing to reduce economy-wide greenhouse gas (GHG) emissions by 50–52 per cent below 2005 levels in 2030.

The United States is also a party to the Vienna Convention for the Protection of the Ozone Layer and a protocol to that treaty, the Montreal Protocol on Substances that Deplete the Ozone Layer, since its finalisation in 1987. Under the Montreal Protocol and Title VI of the US Clean Air Act (CAA), some ozone-depleting substances (ODS), such as chlorofluorocarbons, have now been phased out except for a small quantity for uses agreed upon as 'essential'. Hydrochlorofluorocarbons (HCFCs) are currently being phased down through incremental decreases in consumption and production, with a complete phase-out planned by 2030. On 15 October 2016, at the 28th Meeting of the Parties in Kigali, the parties agreed to amend the Montreal Protocol, expanding its scope to include certain hydrofluorocarbons (HFCs). The US has now adopted the agreement. With a strong bipartisan alliance and support from both environmental groups and industry, the US Senate voted 69-27 to ratify the Kigali Amendment on 21 September 2022.

The Environmental Protection Agency (EPA) and the Federal Aviation Administration (FAA) traditionally have worked with the International Civil Aviation Organization (ICAO) to establish aircraft emissions standards. The United States participates in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), to which the US is committed under Annex 16, Volume IV of the Convention on International Civil Aviation, more commonly known as the Chicago Convention. Under CORSIA, all ICAO member states whose aircraft operators undertake international flights must develop a monitoring, reporting, and verification system for CO2 emissions from international flights subject to CORSIA. CORSIA eventually requires offsetting new emissions (above the baseline year of 2019) from covered international flights beginning in 2024, with a pilot phase from 2021–2023. In January 2021, EPA finalised CAA emission standards with domestic limits that mirror the ICAO's standards (86 Fed Reg 2,136 (11 January 2021)). EPA explained that aligning domestic standards with

international standards would bring 'substantial benefits for future international cooperation' on aircraft emissions, which the agency deemed 'key for achieving worldwide emission reductions' (86 Fed Reg 2,144–45). Now that EPA has promulgated this rule, CAA section 232 requires the FAA to issue regulations enforcing and applying these standards when certifying engines for US aircraft manufacturers (87 Fed Reg 36,076 (June 15, 2022)).

On 11 November 2014, the United States struck a bilateral agreement with China, under which both nations seek to significantly reduce GHG emissions. On 17 April 2021, the Special Envoys from the US and China released a joint statement after meeting to discuss the climate crisis. The US-China Joint Statement Addressing the Climate Crisis details the two countries' commitment to cooperate in multilateral processes. The US-China relationship, however, is in a constant state of flux. Special Envoy John Kerry travelled to China for four days of climate talks in July 2023. The Biden Administration seems hopeful that new discussions with China will engender productive results, though the precise implications of such talks remain unclear.

In June 2016, the United States, Mexico, and Canada announced a joint goal of achieving 50 per cent 'clean power' generation across all three countries and reducing methane emissions from the oil and gas sector by 40 per cent to 45 per cent by 2025. On 23 February 2021, the Biden administration released the Roadmap for a Renewed US-Canada Partnership, a statement in which the Biden administration and Canadian Prime Minister Trudeau set forth goals to accelerate climate ambitions. On 10 June 2022, the Biden administration released a joint statement on US, Mexico, and Canada cooperation, reaffirming their collective commitment to take action regarding the climate crisis. The 10th North American Leaders' Summit, held on 9-10 January 2023, further reaffirmed this goal: the Declaration of North America commits the three countries to both achieving their respective 2030 NDCs under the Paris Agreement and continuing to implement their 2021 joint commitments. The three countries also pledged to protect biodiversity in partnership with Indigenous Peoples, meeting the '30 by 30' target adopted at the UN Biodiversity Conference under the Convention on Biological Diversity (CBD) at COP 15. Note, however, that the US is not a party to the CBD, although it actively participated in the COP 15 discussions.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

Although the United States lacks a binding comprehensive policy to regulate GHG emissions at the national level, the Biden administration has expressed its alignment with the Paris Agreement and committed to both achieving a 50–52 per cent reduction in GHG emissions by 2030 and reaching net-zero emissions by 2050. In January 2021, President Biden signed Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad, which reaffirmed US commitment to a wide range of international groups and treaties addressing the climate crisis. These executive actions are currently leading to both regulatory changes and new legislative proposals aimed at further regulation of GHG emissions in the US as well as the creation of incentives for voluntary GHG emissions reductions and carbon sequestration. Additional regulation and legislation are focused on high-potency GHG emissions, transportation, and the energy sector in the short-term, while incentive programmes are generally focused on the transportation sector, renewable energy, and carbon sequestration.

Separately, financial regulators in the United States are considering additional regulations related to GHG risks and disclosures and may take into account parallel regulatory processes in the EU and elsewhere as they develop new US standards.

In addition, the EU's newly approved Carbon Border Adjustment Mechanism (CBAM), taking effect in October 2023, has triggered trade discussions between the US and the EU. The CBAM will impose a fee on certain goods imported into the EU, based on carbon intensity. In response, the US has requested an exemption for its steel and aluminium exports; however, the EU is unlikely to agree to the American request given such a move would violate WTO rules. The EU CBAM already is spurring efforts in the US to better quantify emissions from covered sectors, and also may spur further regulation under existing frameworks (such as the CAA).

Main national regulatory policies

3 | Outline recent government policy on climate matters.

Within hours of his inauguration on 20 January 2021, President Biden acted to bring the United States back into the Paris Agreement and signed Executive Order 13990, 'Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis'. Among other things, that order requires a review of actions taken under the prior Trump administration. Several states challenged Order 13990, including provisions aimed at reinstating use of the 'social cost of carbon' metrics in calculating the costs and benefits of federal agency decisions. The federal government now refers to the 'social cost of carbon' as encompassing three different metrics, collectively referred to as the 'social cost of greenhouse gases' or 'SC-GHG'. Following a flurry of litigation, on 5 April 2023, the US Court of Appeals for the Fifth Circuit dismissed challenges to the Biden administration's continued use of SC-GHG estimates. In September 2022, in the context of a rule targeting methane emissions from the oil and gas sector, EPA issued a proposal that would sharply increase SCC metrics and continues to weigh public comment on adjustments to the SC-GHG figures.

One week after gaining office, the Biden administration hosted 'climate day' at the White House, where President Biden described a 'government-wide' focus on climate change issues and signed Executive Order 14008, 'Tackling the Climate Crisis at Home and Abroad'. Louisiana and other states promptly challenged aspects of the Executive Order . Despite various challenges, the Biden Administration's executive orders aimed at climate change generally remain in effect and continue to guide the administration's aggressive actions on climate change.

President Biden has taken other actions on climate change, such as assembling a team at the White House and at EPA with deep experience of climate change and GHG policy. In May 2021, President Biden issued an Executive Order on Climate-Related Financial Risk, which called for the development of a US government-wide climate risk strategy, published in October 2021. In addition to setting a 2030 GHG emissions reduction target under the Paris Agreement, President Biden has announced the objective of achieving net-zero GHG emissions for the United States by 2050, both of which are driving additional legislative proposals and regulatory actions under the Biden administration.

On 21 April 2023, President Biden also issued Executive Order 14096, 'Revitalizing Our Nation's Commitment to Environmental Justice for All', in which climate justice considerations feature prominently. The order expressly orders federal agencies to consider all impacts of their actions, 'including those related to climate change', and to identify opportunities for 'climate mitigation, adaptation, and resilience.'

In the absence of national legislation broadly regulating GHG emissions, individual US states and federal agencies have historically implemented climate policy under pre-existing regulatory authority, primarily by promulgating regulations and implementing sector-based actions under the CAA and parallel state authorities. For example, EPA has promulgated regulations aimed at GHG reductions from various larger sources of GHG emissions, including: motor vehicles and other mobile sources, such as heavy-duty vehicles, aircraft, and locomotives; large stationary sources under the Prevention of Significant Deterioration (PSD) and Title V operating permit programmes; methane emissions from the oil and gas sector and certain solid waste landfills; high-potency GHGs; and other sectors or emissions sources.

In recent years, EPA began to regulate HFCs through two CAA Title VI programmes: the refrigerant management programme under section 608 of the CAA and the Significant New Alternatives Policy (SNAP) programme under section 612 of the CAA. The refrigerant management programme was extended to HFCs pursuant to a 2016 rule by EPA. Since that time, SNAP rules have seen various permutations and challenges, ultimately resulting in the vacature of some requirements. Several states promulgated replacement regulations in light of these developments, with California leading the charge to replace or bolster SNAP rules and impose even more stringent requirements.

In December 2020, Congress passed the American Innovation and Manufacturing Act (AIM Act), a law that impacts the regulation of HFCs in the United States in three significant ways:

- requiring EPA to promulgate a rule by September 2021 initiating an incremental phasedown on the production and import of HFCs by 85 per cent over the next 15 years;
- authorising EPA to promulgate new refrigerant management and leak repair regulations for HFCs; and
- authorising EPA to promulgate new technology transition regulations that restrict the use of HFCs in various applications to potentially replace and expand the vacated SNAP rules.

In May 2021, EPA published its first rule pursuant to the AIM Act to begin the phasedown of the manufacture and import of HFCs in 2022 through an allowance-based trading programme. Industry challenged the rule in court; however, on 20 June 2023, the Court of Appeals for the District of Columbia unanimously upheld EPA's authority to regulate HFC blends as part of its phasedown programme. At the same time, this decision vacated EPA's prohibition on single-use canisters, as well as certain cylinder tracking measures, which EPA claimed it had adopted in an effort to address smuggling activity. But while those provisions were vacated, EPA's broader authority to regulate HFC blends remains intact following the Fifth Circuit decision.

EPA has also received petitions from various environmental groups, states, and industry groups to promulgate refrigerant management and technology transition rules under the

AIM Act. The agency granted some of these petitions and is currently reviewing others. On 15 December 2022, EPA published a proposed rule to address the AIM Act's technology transition requirements (87 Fed Reg 76738). The rule would phase out the use of certain HFCs under the AIM Act while addressing issues raised by the petitions the EPA granted. The comment period ended on 30 January 2023, and the rule is now under EPA review with the goal of finalising a rule by the AIM Act deadline of October 2023.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

In November 2021, Congress passed a trillion-dollar infrastructure bill that includes numerous provisions aimed at climate change, including additional funding for electric vehicles (EVs) and EV infrastructure, improvements to electricity grids, and other infrastructure improvements aimed at reducing GHG emissions. EPA has also pushed forward major climate rules, including a proposal for new GHG emissions standards on passenger and commercial vehicles for which the EPA is reviewing a barrage of comments as of July 2023.

In addition, a large spending package, the Inflation Reduction Act (IRA), was enacted on 16 August 2022 and contains numerous climate change provisions. The IRA represents one of the most significant actions by the federal government on climate change. In particular, IRA programmes include: new or expanded funding to reduce GHG emissions, including methane and HFCs; encourage a domestic supply chain for electric vehicles and energy storage systems; promote carbon sequestration and climate resiliency in agricultural practices; expand offshore energy production, for both wind and fossil energy; and expand federal support for biofuels. The IRA also creates and expands upon dozens of tax credits for renewable energy, electric vehicles, and electric transmission.

The IRA is a US$370 billion climate and tax package that includes additional incentives for renewable energy, carbon capture, electric vehicles, and other climate measures. The measure will enable the United States to cut GHG emissions by 40 per cent below 2005 levels by 2030, a significant step towards achieving the US NDC of a 50 per cent reduction from 2005 by 2030. Among other things, the IRA contains the following measures aimed at bolstering GHG reductions in the United States:

- expansion of offshore leasing for wind energy, although with parallel provisions requiring oil and gas leases to be offered over large tracts of the outer continental shelf as a condition of making wind leases available;
- air emissions: the IRA includes major provisions aimed at reducing GHG emissions, such as HFC refrigerants;
- methane: the IRA substantially increases support for EPA's existing efforts to address methane emissions and also creates a new system of fees that would impose charges on owners of oil and gas infrastructure if methane emitted from that infrastructure exceeds specified thresholds;
- agriculture and forestry: the IRA includes several programmes aimed at reducing GHGs from agriculture, promoting soil and forestry-based carbon sequestration, and improving the climate resiliency of farms and forests;
- alternative fuels: the IRA contains substantially expanded federal support for biofuels, sustainable fuels, hydrogen as a fuel and sustainable aviation fuels; and

- manufacturing: the IRA provides support for decarbonisation of GHG-intensive industries through measures like energy efficiency, transition to low-carbon inputs and use of materials that capture large volumes of carbon during manufacturing.

The IRA also includes major revisions to the nation's system of tax credits for renewable energy production, carbon capture and sequestration, and advanced manufacturing. It will extend the existing system of Investment Tax Credits and Production Tax Credits, and it will maintain or increase tax credits available for projects that are built using labour that is paid prevailing wages with qualifying apprenticeship programmes. The IRA also creates several new tax credits, such as for renewable aviation fuels and clean hydrogen. Finally, after 2025, the IRA will phase out the existing system of credits in favour of a new technology-neutral system that would award credits for any technology that produces carbon-free energy and keep that system in place until the nation's electricity sector reduces its GHG emissions to 25 per cent of 2022 levels.

On 14 June 2023, the US Department of the Treasury and the IRS released guidance on provisions of the IRA to expand the reach of these clean energy tax credits and help build projects more quickly and affordably. This guidance will allow non-profits and others with low tax liability to obtain cash rather than tax credits they might not otherwise we able to fully utilise through a system known as 'direct pay.' Direct pay mechanisms may accelerate deployment of related tax credits, particularly to municipalities, schools, tribes, non-profits, and other institutions seeking to deploy renewable energy.

The IRA represents a major expansion of US climate policy. While some of the provisions within the IRA will become effective immediately, many will require implementation through agency rulemaking and other actions. As a result, it may be several years before the full impact of the IRA is apparent.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

EPA is the primary national regulatory authority with responsibility for the regulation of GHG emissions. EPA's authority includes the promulgation and enforcement of CAA standards for GHG emissions for both mobile and stationary sources, GHG reporting programmes, adaptation to a changing climate, and protection of drinking water aquifers under the federal Safe Drinking Water Act with respect to underground injection of CO2 and other materials.

The Council on Environmental Quality (CEQ) is charged with ensuring federal agencies comply with the National Environmental Policy Act (NEPA) in assessing the potential environmental impacts of major federal actions. Consideration of climate change impacts in NEPA analyses continues to be primarily guided by court decisions on agency rulemaking processes, land use planning documents, leasing decisions, and individual project permitting decisions, most often in the energy or transportation contexts. These litigation outcomes have not been uniform, but generally trend toward requiring greater consideration of GHG emission impacts, including downstream effects further removed from the immediate federal action. In July 2020, CEQ amended the nearly 40-year-old regulations implementing NEPA applicable across the federal government. Those regulations were

challenged in litigation, including allegations that CEQ limited the scope of cumulative impacts analysis including climate change. However, most of these lawsuits have been stayed due to President Biden's regulatory freeze, which directed federal agencies to review rules promulgated under the Trump administration. In February 2021, CEQ issued a notice rescinding the 2019 draft guidance document that gave federal agencies significant discretion over how they should consider GHG emissions under NEPA. The Biden administration is reconsidering the 2020 regulatory amendments in a two-step process. In April 2022, CEQ restored some of the provisions modified in 2020, including changes to streamline the NEPA review process. CEQ intends to make 'broader changes' to NEPA in Phase 2, including in environmental justice and public participation. The Biden administration also rescinded the 26 June 2019 CEQ draft guidance to address how agencies should consider GHG emissions in the NEPA process and released new interim guidance in January 2023 that builds upon CEQ's 2016 guidance on GHG emissions and climate change. While nonbinding, the 2023 guidance encourages agencies to consider and disclose both direct and indirect impacts of their actions on GHG emissions and climate change and to consider climate-friendly alternatives and mitigation measures.

The CEQ also regulates and maintains the Climate and Economic Justice Screening Tool, which helps track communities in the US considered disadvantaged because they live in areas that experience significant burdens, including ones related to climate change.

In addition, President Biden established a President's Council of Advisors on Science and Technology and a Task Force on Scientific Integrity. The Environmental Justice Subcommittee of the National Science and Technology Council, created by President Biden's April 2023 Executive Order 14096, works with the CEQ and develops biennial research plans to promote environmental and climate justice, including cumulative impacts and anticipated climate change impacts.

Additional federal agencies are also responsible for programmes and regulations related to climate change: the Department of the Treasury and the Internal Revenue Service play an increasingly important role due to the proliferation of GHG tax incentives, such as 45Q for carbon sequestration; meanwhile, the Securities and Exchange Commission (SEC) has proposed a rule to standardise GHG disclosures for investors in March 2022 as part of its emphasis on ESGs. Other relevant agencies include the Department of Energy; Department of Agriculture (USDA); Department of the Interior; Department of State; Department of Commerce; and National Aeronautics and Space Administration (NASA).

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

The most recent comprehensive GHG emissions data for the United States is EPA's 'Inventory of US Greenhouse Gas Emissions and Sinks', which covers the period from 1990 to 2021.

Mandatory GHG reporting began in 2011 for certain industries and in 2012 for others. As a result, the Environmental Protection Agency (EPA)'s 2023 report includes robust GHG emissions data from various sectors of the US economy. In 2021, total gross US GHG emissions were 5,586 million metric tons of carbon dioxide equivalent (MMT CO2 Eq) after accounting for sequestration from the land sector. The main sources of GHG emissions include the electricity generation, transportation, industrial, agricultural and commercial sectors. Complete figures by sector are available in EPA's 2023 GHG Inventory.

Another valuable resource is the US Energy Information Administration, which provides detailed analyses of CO2 emissions by state, by fuel, and by sector. Numbers are updated annually, with the next update anticipated for October 2023.

GHG emissions standards apply to private commercial entities to the extent that the entity is subject to regulation by the relevant national or state authority. As noted above, there is no national GHG emissions legislation or regulation; rather, sources currently are regulated under the US Clean Air Act (CAA) and other federal laws, and by state laws.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

At the federal level, GHG emission reductions are primarily driven by US CAA regulation, which does not currently contemplate GHG emissions reduction projects or carbon offsets as compliance mechanisms. Certain other programmes provide incentives for carbon sequestration and other GHG removals. EPA also implements strategies to help organisations reduce their GHG emissions, including the ENERGY STAR programme and Green Power Partnership. At the state level, GHG emissions reductions are driven by a range of policies, including state and regional cap and trade programmes, renewable power requirements, low carbon fuel programmes, energy efficiency programmes, and a range of other sector-specific measures adopted under state law.

Section 45Q of the Tax Code provides tax credits for capturing and sequestering carbon oxides that would otherwise escape to the atmosphere, and the Department of Agriculture (USDA) also implements various programmes to support and incentivise carbon sequestration and production of 'Climate-Smart Commodities' in the agricultural and forestry sectors. The 45Q tax credit programme and USDA incentive programmes have spurred innovation and the development of various GHG removal or sequestration actions in the United States. In 2022, the US Congress expanded 45Q, reducing capacity requirements for eligible projects. 45Q now provides up to US$ 85 per tonne of CO2 permanently stored and increased credit amounts for direct air capture projects to US$ 180 per tonne of CO2. Private carbon offset markets have also spurred development of a wide array of carbon sequestration projects and programmes in the forestry and agriculture sectors, among others. The Inflation Reduction Act will substantially expand tax credits for carbon sequestration.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Commercial climate business in the United States is fragmented, largely owing to the lack of comprehensive national climate change regulation and the lack of a single registry or exchange for the trading of GHG allowances, offsets, and other instruments. Carbon offset project development is rapidly accelerating, and the generation of GHG offset or reduction credits has increased significantly as entities seek to comply with California's cap-and-trade programme and to fulfil voluntary GHG reduction commitments. At the same time, US financial regulators, including the Commodity Futures Trading Commission and the SEC, are revisiting their regulation and oversight of environmental commodities markets, including carbon offsets. In parallel with efforts to increase regulatory scrutiny, a range of voluntary efforts are presently aimed at increasing transparency and quality in the global carbon markets (such as the Integrity Council for the Voluntary Carbon Market (ICVCM), and US carbon projects and carbon buyers are reacting with a trend towards higher-quality carbon reduction projects and procurement of high quality carbon reduction assets.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Various national, regional, and state programmes exist in the United States to regulate GHG emissions. The main programmes are regulations issued under the US Clean Air Act (CAA), federal motor vehicle fuel economy standards, and cap-and-trade programmes in California, Washington, and the Regional Greenhouse Gas Initiative (RGGI) between the Northeast states. California and Oregon also have Low Carbon Fuel Programs (LFCS), which govern the carbon intensity of certain fuels, while Washington has adopted a similar Clean Fuel Standard.

In April 2023, California also obtained two waivers from the Environmental Protection Agency (EPA) to establish stricter air quality standards for motor vehicles, specifically heavy-duty vehicles and engine emission standards, under CAA section 209. The EPA is still reviewing a third requested waiver as of this writing. Historically, California's waivers have allowed the state to set stricter standards for motor vehicle emissions, which other states may then adopt instead of the federal ones. In fact, DC, California, and 14 other states signed a memorandum of understanding in 2020, ledging a pathway to zero-emission vehicles by 2050. These most recent waivers have, however, experienced some pushback: in June 2023, 19 Republican-led states challenged EPA's waiver grant to California's Advanced Clean Trucks Rule.

The Biden administration's 'whole-of-government' approach to climate change is having an enormous impact on US GHG policy, as is the Biden administration's goal of net-zero GHG emissions for the United States by 2050. Individual states are also driving significant changes in US climate policy. At present, 14 states have binding net-zero GHG emissions targets (typically by 2045 or 2050) and another 11 have similar non-binding targets. Another eight states have binding GHG emissions reduction requirements in the 80–95 per cent range. Collectively, these state and federal policy pronouncements are beginning to lead to significant changes in both voluntary and mandatory GHG reduction and regulation programmes around the country across numerous sectors.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Certain stationary sources are required to obtain CAA Title V operating permits and prevention of significant deterioration (PSD) permits for GHG emissions. Under the CAA's 'cooperative federalism' approach, most states manage GHG permitting in conjunction with any applicable state laws or programmes. Typically, any applicable New Source Performance Standards GHG emissions limits will be incorporated into a facility's Title V operating permit. When obtaining permits under the PSD programme, sources must evaluate available emissions reduction options to determine the 'best available control technology' for that facility, which are made on a case-by-case basis considering energy, environmental and economic impacts, and other costs. Over time, technological advancements increase the degree of attainable emissions reductions. GHG considerations also become relevant in certain permitting actions, including those under NEPA and analogous state laws, which may require permit applicants to take into account GHG emissions related to a specific project.

Several market-based permit systems also exist: California and Washington now have state-level cap-and-trade programmes requiring major emitters to obtain permits to release GHGs, and 11 states participating in the RGGI have a cap-and-trade programme covering the electricity sector. New York and Oregon also are developing cap-and-trade programmes.

Oversight of GHG emissions

11 How are GHG emissions monitored, reported and verified?

EPA's mandatory GHG Reporting Rule requires reporting of GHG data and other relevant information for facilities in 41 source categories. EPA compiles reported GHG emissions to create its annual GHG inventory for the United States. Compliance for covered sources is mandatory and administrative. Civil or criminal penalties may apply for violations. Several states have also implemented GHG reporting rules, and the reporting thresholds differ by state. Entities must comply with both federal and state GHG reporting requirements, if applicable. According to EPA, the GHG Reporting Rule covers over 8,000 US facilities.

In 2010, the SEC issued interpretive guidance regarding required disclosures by companies of their climate change-related risks. On 4 March 2021, the SEC announced the creation of a Climate and ESG Task Force within the Division of Enforcement. Although the 'materiality' standard still currently provides the threshold for required disclosures in the United States,

in 2021, the SEC also issued a specific request for comments regarding whether changes are needed to its GHG disclosure rules. In May 2022, the SEC proposed new disclosure and reporting requirements for public companies that would significantly expand current climate risk reporting requirements while also imposing new requirements related to GHG and ESG disclosures.

New requirements would be phased in over several years, with large companies required to begin disclosure in 2023 and other firms starting in 2024. The most controversial aspects of the proposed rule are the requirements of Scope 3 emissions disclosure and the financial statement disclosures. The proposal did integrate some flexibility around Scope 3 emissions, including an exemption for smaller reporting companies. As of this writing, this SEC proposed rule may not be finalised until fall 2023, or later. Even if the SEC final rule is challenged in court, however, some US companies will likely still have to comply with certain Scope 3 emission disclosures because similar regulations are being promulgated in the EU and at the state level.

Environmental groups, investors, and shareholders also are increasingly driving changes to climate risk reporting by companies in the United States. Companies may now face dozens or even hundreds of requests for data and information on how they assess and disclose climate-related risks, and there has been increased adoption of third-party disclosure standards, including those published by the Task Force for Climate-Related Financial Disclosures and the Sustainability Accounting Standards Board.

The US Federal Trade Commission (FTC) appears poised to significantly refresh its guidelines for the Use of Environmental Marketing Claims (Green Guides). On 2 July 2021, the FTC published its 10-year regulatory review schedule, announcing an agency review of the Green Guides in 2022. The FTC then published a proposed rule revising the Green Guides on 20 December 2022 and accepted public comments until spring 2023. This action is in line with the global trend toward more scrutiny of claims and substantiation, including actions within the European Union requiring enhanced substantiation for environmental claims.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

There is no mandatory GHG allowance regime at the federal level. The Regional Greenhouse Gas Initiative (RGGI), California and Washington operate cap-and-trade programmes with associated emissions allowance regimes.

RGGI, the first market-based GHG reduction scheme in the US, currently encompasses the eastern states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia (although Virginia is poised to exit the programme). RGGI lowered its GHG emissions cap beginning in 2014 to 91 million short tonnes, with annual follow-on decreases of 2.5 per cent from 2015 to 2020. In August 2017, RGGI members approved measures to extend RGGI to 2030, with a further 30

per cent reduction in GHG emissions during that time. Membership in RGGI is voluntary and subject to change. North Carolina considered joining, but that now seems unlikely following the defeat of a related measure by the North Carolina Legislature.

RGGI is limited to the power sector and uses an allowance system for compliance; electric power generators subject to RGGI are required to hold CO2 allowances equal to the amount of CO2 they emit in a given compliance year. Each RGGI state issues allowances in an amount defined by each state's applicable law or regulation implementing RGGI. Collectively, these allowances comprise the annual RGGI cap and are distributed through quarterly auctions. RGGI also utilises a cost containment reserve system to allocate and auction additional allowances when needed to limit price volatility that, combined with periodic over-supply, has kept prices low but has also frustrated efforts to create a market for carbon offsets in RGGI states. An Emissions Containment Reserve, which allows states to withhold allowances from auction if reduction costs are lower than projected, will allow more dynamic response to market conditions and may have the effect of stabilising or raising slightly the cost of RGGI allowances. RGGI is currently in the midst of its Third Program Review, during which the member states consider impacts and potential changes to their CO2 budget trading programmes. This review will include modelling the electricity sector, reviewing programme elements, and considering environmental justice and equity principles. An updated RGGI Model Rule is anticipated for fall 2023.

California's Global Warming Solutions Act (AB 32), signed into law on 27 September 2006, established a mandate to reduce GHG emissions to 1990 levels by 2020 and granted broad authority to the California Air Resources Board (CARB) to develop and implement a broad strategy to achieve that goal. In September 2016, a new bill (SB 32) extended and expanded the state's commitment to reducing GHG emissions, establishing a new reduction target of 40 per cent below 1990 levels by 2030. CARB's strategy to achieve these emission reduction goals is set forth in its Scoping Plan and includes programmes in nearly every sector of the economy. CARB's updated 2022 Scoping Plan outlines a concrete plan for the state to achieve carbon neutrality by 2045. The Plan builds on the 2017 update evaluating emissions reductions needed in the electricity, transportation, industrial and building sectors. The 2022 update went beyond the 2017 plan to detail strategies for reductions in short-lived climate pollutants and carbon dioxide removal. It also reduced the role that the multi-sector cap-and-trade GHG emissions programme, first implemented in 2013, will play. As proposed in 2017, the programme governed 80 per cent of GHG emissions in the state and is one of the largest carbon markets in the world. However, according to the 2022 plan, to meet its goal, the state needs 27 per cent lower emission reductions from cap-and-trade than what was planned for in 2017. The cap-and-trade programme will be revised in 2023. On top of these mandates, the Clean Energy and Pollution Reduction Act of 2015 establishes state-wide goals in California for 2030 of 50 per cent electricity generation from renewable resources and doubling energy efficiency in electricity and natural gas usage.

CARB sets an annual cap on GHGs and issues a limited number of emission allowances, each of which authorises its holder to emit one MtCO2e. The number of available allowances is limited by the cap and declines by approximately 3 per cent each year. Entities that emit 25,000 MtCO2e annually are obliged to surrender a certain number of compliance instruments to CARB, consistent with each entity's reported emissions. Compliance instruments consist primarily of allowances, which can be purchased from CARB at quarterly auctions. In addition, at present up to 4 per cent of a covered entity's obligation can be met with

CARB-certified offsets, increasing to 6 per cent in 2026. Both allowances and offsets may also be bought and sold on the secondary market, subject to certain restrictions. Covered entities are required to disclose substantial information to CARB, including information about corporate ownership and affiliates, directors and officers, high-level employees, and legal and market-strategy advisers.

On 17 May 2021, Washington Governor Jay Inslee signed into law the Washington Climate Commitment Act, which creates a state-wide cap on GHG emissions that will decline over time, and a limited trading system for carbon credits that can be sold to entities requiring credits to meet their individual GHG emission limits. Beginning on 1 January 2023, all sources emitting more than 25,000 MtCO2e will be subject to the cap and will be required to purchase credits sufficient to meet their emissions. Allowed permits will decline over time until a 90 per cent reduction in GHGs over 1990 emissions levels is achieved in 2050. An annual auction of GHG permits will be conducted by the Washington Department of Ecology, with revenues dedicated to programmes for the reduction of carbon emissions, climate resiliency, support of renewable energy and reduction of GHGs in agriculture. Trading linkages will be established to carbon markets in other jurisdictions to permit the purchase of allowances from those markets, which could then be applied to Washington's GHG limits. The programme started in January 2023, after Ecology sought public comment and published the final Climate Commitment Act Program Rule (Chapter 173-446 WAC). As of 2023, Ecology is also exploring options for linking Washington's efforts with similar programmes in California and Quebec. It also includes a focus on environmental justice and populations disproportionately impacted by climate change. The proposal would adopt specific administrative rules governing the operation of Washington's 'cap-and-invest' programme.

In 2023, New York Governor Kathy Hochul also adopted a cap-and-invest programme to reduce GHG emissions. The programme establishes a declining cap on GHG emissions while investing in programmes that drive emissions reductions in an equitable manner and limit costs to vulnerable households. Begun in January 2023, the programme sets an annual cap on New York pollution emissions, aiming to meet a 40 per cent emission decrease by 2030 and at least 85 per cent reduction from 1990 levels by 2050. Governor Hochul also proposed legislation to create a Climate Action Rebate which, if adopted, is expected to drive over US$1 billion in future cap-and-invest proceeds to New Yorkers.

Similarly, Oregon's 2022 cap-and-trade programme, the Climate Protection Programme, aims to reduce GHG emissions by at least 80 percent from 1990 levels by 2050. Implemented as a result of Oregon governor Kate Brown's 2020 administrative order, the programme imposes a cap on GHG emissions attributable to fuel suppliers that will decrease annually. The rule covers GHG emissions from fuel and natural gas combustion but excludes emissions from biofuels and biomass fuels. Certain large stationary sources, emitting at least 25,000 MtCO2e, must also implement a best available emissions reduction approach.

Registration

13 Are there any GHG emission allowance registries in your country? How are they administered?

There is no GHG allowance regime at the federal level. The registry for RGGI allowances is called the 'CO2 Allowance Tracking System.' Each RGGI allowance has a unique serial number, which then tracks initial ownership, transfer, and retirement of allowances. California and other linked jurisdictions utilise the Compliance Instrument Tracking System Service (CITSS) as an allowance registry, which tracks the issuance, initial ownership, transfer, and retirement of allowances and offsets within the Western Climate Initiative (WCI), which encompasses the CA programme. WCI conducts financial audit reports and RGGI periodically assesses the presence of any anticompetitive effects. New York and Oregon may develop similar regimes as well.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

There is no GHG allowance regime administered by the federal government. California (and its CITSS platform) and RGGI each maintain rules and systems for the issuance, auction, trading, banking, transfer and retirement of emissions allowances. Any qualified party can participate in RGGI allowance auctions; auction rules limit the number of allowances that associated entities may purchase in a single auction to 25 per cent of the total allowances offered for auction. California conducts quarterly auctions of GHG emission allowances. Both entities that are covered by California's cap-and-trade programme, and others opting into the programme, can participate in the auctions. Washington will follow a model similar to California's.

While some CA allowances are allocated to entities to prevent leakage, most are auctioned. RGGI and California auctions have recently set price records, with RGGI allowances selling for US$12.73 as of June 2023 and CA allowances selling at US$30.33 as of May 2023. In general, market participants must hold instrument trading accounts and be eligible to purchase and hold such instruments. Holding caps may also apply. Compliance entities must surrender or retire a volume of instruments equal to their covered GHG emissions each reporting period; retirement is facilitated through the relevant registry system.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

There is no national GHG allowance regime or national-level emission trading system. Concerning voluntary markets, there is no consolidated registry or trading system. Each

allowance issuer or registry maintains its own trading platform, and as a result, the market is fragmented. Most transactions occur as over-the-counter bilateral transactions or through brokers. Each registry or issuer has its own rules concerning trading, banking, and retirement; but, in general, voluntary carbon offsets may be freely transacted, pledged, or securitised. The Commodity Futures Trading Commission (CFTC) regulates carbon offsets as environmental commodities, and certain transactions may be subject to CFTC rules. The CFTC held its second voluntary carbon markets convening on 19 July 2023, to discuss recent trends and initiatives related to carbon markets and how the CFTC can promote integrity for high quality carbon credits and potentially further regulate or oversee the voluntary carbon market to reduce risk.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No, although a variety of common terms are found in most emissions reduction purchase agreements and similar agreements used to facilitate such transactions. As a result, many transactions are conducted through similar Emissions Reduction Purchase Agreements. Increasingly, large companies are developing their own procurement criteria and contracts for carbon assets.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

The United States is the world's largest producer of oil and natural gas and is likely to remain so given recent approvals of new projects including the Willow Project in Alaska, the next biggest exploitation of oil and gas on public lands. In 2020, the United States produced 6,787,540,000 barrels and consumed 6,613,800,000 barrels of crude oil and petroleum products. The US Energy Information Administration (EIA) predicts that US crude oil production will increase steadily through 2024, with a forecast average of 12.4 million barrels per day (b/d) in 2023 and 12.8 million b/d in 2024, both of which represent record levels of production.

In 2020, there were 40.58 trillion cubic feet of gross withdrawals of natural gas in the United States, and the country consumed 30.41 trillion cubic feet of natural gas. In 2019, the United States produced 706,307,000 short tons of coal and consumed 588,415,000 short tons of coal. In 2019 (the latest year for which data is available), the United States produced 200,000 pounds of uranium concentrate, and nuclear power plants generated 789.9 billion kilowatt hours of electricity. According to the Environmental Protection Agency (EPA)'s 2023 report,

total US GHG emissions were 6,340 MMtCO2e in 2021, representing an increase of about 5.2 per cent from 2020 levels.

The DOE runs the Federal Energy Management Program, which focuses on reducing energy consumption and increasing the proportion of renewable energy utilised at federal agencies. The DOE also runs a 'Better Buildings' programme, intending to increase building energy efficiency by 20 per cent over the next decade across the commercial, public, industrial and residential sectors. Through these and other programmes, the federal government continues to create incentives and support energy efficiency and related technologies to reach net-zero emissions by 2050.

California, Oregon and Washington have all enacted Low-Carbon Fuel Standards requiring significant reductions in the carbon intensity of transportation fuels, joining with British Columbia to create a market for low-carbon fuels covering the entire West Coast. California's programme requires a 20 per cent reduction in the carbon intensity of motor fuels by 2030, which refiners can achieve either by blending biofuels with gasoline or diesel, or by purchasing credits, which can be generated by, for example, vehicle electrification. The other states have adopted similar mandates. As of June 2023, New York is also considering adopting a programme similar to California's, which if passed would be the first clean-fuel standard on the East Coast.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

In 2009, EPA determined that the six primary GHGs recognised by the UN reasonably may endanger public health and welfare. Concurrently, EPA determined that GHG emissions from motor vehicles contribute to pollution that endangers public health and welfare. Since then, EPA has worked to implement GHG reductions from on-road vehicles through fuel efficiency and certain vehicle efficiency requirements.

In September 2011, in coordination with the National Highway Traffic Safety Administration (NHTSA), EPA established fuel economy standards for light-duty cars and trucks and the first phase for medium and heavy-duty trucks. Under the Obama administration, NHTSA proposed aggressive Corporate Average Fuel Economy (CAFE) standards for cars and light trucks for model years 2022 to 2025. These were rolled back by the Trump administration but were re-established by the Biden administration in March 2022. The CAFE standards for model years 2024 to 2026 require fuel economy of 49 mpg by model year 2026. Under appending proposal released by the NHTSA in July 2023, the CAFE standard would increase to 58 mpg in 2032; the proposal also would require a 10 per cent annual fuel economy improvement for certain commercial vehicles (those between 8,500 and 14,001 pounds) for model years 2030-2035.

While EPA generally has nationwide authority to set emission standards, the US Clean Air Act (CAA) grants California the special ability to set its standards, which may be followed by other states, so long as California receives a waiver from EPA. California Governor Gavin Newsom declared in a September 2020 Executive Order, that all new consumer car sales in California must be zero-emission vehicles beginning in 2035, and all new medium-duty

and heavy-duty trucks and buses must be zero-emission by 2045. Many other states have adopted CAA emissions requirements for vehicles, and a few have also announced similar zero-emissions policies.

On 15 August 2016, EPA promulgated an endangerment finding under section 231(a)(2)(A) of the CAA for aircraft, which determined that GHG emissions from certain classes of aircraft engines, including those used by most large commercial aircraft, contribute to the air pollution that causes climate change and endangers public health and welfare. According to EPA, GHG emissions from aircraft represent 12 per cent of transport-related GHG emissions in the United States, and 3 per cent of total US GHG emissions. In March 2019, the Federal Aviation Administration (FAA) announced its Monitoring, Reporting, and Verification Program for CORSIA. Applying to US air carriers and commercial and general aviation operators, the FAA's programme consists of voluntary carbon emissions reporting to establish standardised practices to implement CORSIA. On 11 January 2021, the EPA finalised the first domestic GHG emission standards for aircraft. See *Final Rule, Control of Air Pollution from Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures*, 86 Fed Reg 2136. These CAA standards would apply to manufacturers of new aircraft and new aircraft engines, with compliance determined as part of the FAA's airworthiness certification process. The standards rely largely on fuel efficiency and draw heavily from the 2017 Airplane CO2 Emission Standards established by the International Civil Aviation Organization (ICAO). The EPA explained that aligning domestic standards with international standards would bring 'substantial benefits for future international cooperation' on aircraft emissions, which the agency deemed 'key for achieving worldwide emission reductions.' Id at 2,144–45. In November 2021, the FAA also published the US Aviation Climate Action Plan, which outlines strategies for moving the domestic aviation industry towards net-zero emissions by 2050. The plan relies on more efficient aircraft and engine technologies, production and use of sustainable aviation fuels, advancements in airport operations, international cooperation, and support for climate science research. At the same time, the plan notes that 'the decarbonisation of the aviation sector is extremely challenging'.

When GHGs became a 'regulated pollutant' under the CAA, EPA undertook various rulemaking processes to incorporate GHG emissions into programmes applicable to stationary sources, which include the Title V operating permit programme and the Prevention of Significant Deterioration programme, as well as New Source Performance Standards for both existing and new electric generating units. In an effort to regulate GHG emissions from existing coal-fired power plants, EPA released the Clean Power Plan (CPP) in 2015, which became mired in litigation. Then, on 21 August 2018, EPA proposed under the Trump administration to replace the CPP with the Affordable Clean Energy Rule (ACE Rule), which EPA then finalised on 9 June 2020. This rule, too, became the subject of fierce litigation, and in June 2022, the Supreme Court reviewed the DC Circuit's decision to vacate the ACE Rule. In June 2022, the Supreme Court's decision in *West Virginia v EPA* further concluded that Congress did not grant EPA the authority to devise emission caps based on an approach that could lead to a generation-shifting approach through 'outside the fence line' control measures. As a result, the court concluded, EPA exceeded its authority when enacting the CPP. Currently, there are no significant federal GHG regulations imposed on existing power plants, although the Biden administration has announced plans to adopt such rules. On May 23 2023, EPA published a new, proposed rule that would formally rescind the ACE rule and replace it with sweeping measures to govern power plant GHG emissions under Section 111 of the CAA. Among other things, the rule would impose: (1) emissions standards for

most new and reconstructed natural gas generation units based on hydrogen-cofiring and, for baseload generation, the use of carbon capture and storage (CCS); (2) classify existing coal-fired units into three categories, with those planning to operate past 2040 required to utilise CCS capturing 90 per cent of CO2 emissions and (3) impose requirements for existing natural gas plants similar to those proposed for new plants. If adopted — and if it survives the likely legal battles to follow — the proposed rule would dramatically lower US GHG emissions from the power sector.

In 2016, EPA issued new standards specific to methane emissions from new and modified oil and gas wells and related facilities. In late 2021, the Biden Administration took several new actions on methane emissions. In November 2021, EPA proposed a rule that would reduce methane and other emissions from both new and existing sources in the oil and natural gas industry. The Biden Administration also released a 'U.S. Methane Emissions Reduction Action Plan' announcing potential measures across numerous sectors, including oil and gas, landfills, abandoned mines, agriculture, and others. In November 2022, EPA also issued a supplemental proposal to further reduce methane emissions from oil and gas operations. EPA then held a public hearing to receive public comments on its proposal in January 2023. We expect continued regulatory scrutiny on methane emissions. Increasing support for the EPA's existing efforts to tackle methane emissions, the Inflation Reduction Act (IRA) further imposes a system of fees aimed at reducing certain methane emissions from pipelines, orphaned wells, and other fossil fuel infrastructure. The IRA also establishes a waste emissions charge for methane from facilities reporting more than 25,000 metric tonnes of carbon per year. On 24 July 2023, and as part of the IRA's Methane Emissions Reduction Program, EPA and the Department of Energy (DOE) released a Notice of Intent (NOI) announcing US$1.5 billion in new funding opportunities related to reducing or monitoring methane emissions from the oil and gas sector.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

The Energy Policy Act (EPAct) of 1992 was enacted to address many aspects of energy supply and demand, including alternative fuels, renewable energy, and energy efficiency. Significant amendments in 2005 further created or bolstered federal incentives for energy efficiency, biofuels, and numerous types of renewable energy. Since then, the US Congress has regularly extended tax credits for wind and solar energy production, while adopting new tax incentives for carbon sequestration. The federal government also has a programme for leasing federal lands on the outer continental shelf for offshore wind development, as well as onshore leasing of federal lands for wind, solar, and other energy development. In addition, the Federal Energy Regulatory Commission (FERC) announced in 2021 several measures aimed at expanding transmission and other infrastructure to support renewable energy development across the United States. In 2022, FERC issued a Notice of Proposed

Rulemaking as the next step in this process, gathering comments from interested parties. In addition, FERC published an interim policy statement in February 2022, describing the agency's procedures for evaluating climate impacts under NEPA and integrating climate considerations into public interest determinations under the Natural Gas Act.

At the federal level, the Department of Energy (DOE) loan guarantee programme backs investment in renewable power, energy efficiency, and commercial climate technologies. Loans backed by the DOE have supported investment in solar, wind, geothermal, nuclear and energy storage technologies, among others. In 2013, the DOE announced the availability of US$8 billion in loan guarantees for advanced energy projects that substantially reduce GHGs and other air pollution. In 2014, the DOE announced the availability of US$4.5 billion in loan guarantees available for innovative renewable energy and energy efficiency projects in the United States that reduce GHG emissions. In 2021, DOE announced it had more than US$40 billion in loan guarantee capacity available to support clean energy projects. In 2022, it announced its first loan guarantee of US$504 million for advanced Clean Energy Storage in nearly a decade. The Inflation Reduction Act (IRA) also expanded DOE's Title 17 Clean Energy Financing Programme to include facility decarbonisation and energy infrastructure reinvestment projects. The DOE also runs parallel loan programmes for nuclear energy projects and 'advanced fossil energy' projects, each with its own solicitations and funding caps.

Two federal tax credits also provide financial support for renewable energy facilities. The production tax credit provides a tax credit for each kilowatt hour produced by eligible renewable power facilities. Combined with state RPS programmes, The renewable electricity production tax credit (PTC) has been a major driver of wind power development in the United States: between 2007 and 2014, US wind capacity nearly quadrupled. The business energy investment tax credit (ITC) was also significantly expanded in 2008, which provides tax credits for capital investments in solar energy facilities, fuel cells, small wind turbines, geothermal systems, microturbines, and combined heat and power. The PTC and ITC have been scheduled to gradually step down or phase out over time, but legislation passed in December 2020 extended these tax credits. The IRA will extend and expand both tax credits, and then replace them starting in 2025 with a technology-neutral approach that provides tax credits to any technology that produces electricity on a net-zero basis, with tax credits phasing out once electricity-related GHG emissions fall to 25 per cent of 2022 levels.

The federal government is also working to facilitate renewable power generation on public lands through a variety of programmes designed to streamline permitting and leasing. For example, the Department of the Interior and Bureau of Land Management facilitate a solar energy programme in six western states. The Bureau of Ocean Energy Management (BOEM) is also working to identify and lease offshore wind energy areas for commercial wind development, announcing in 2023 an offshore wind lease sales in the Gulf of Mexico and along the Atlantic Coast. The federal government is also working to streamline permitting for renewable energy projects on federal lands, and to support the development of additional electricity transmission. BOEM has issued a proposed rule to streamline regulations for offshore wind and other clean energy developments on the Outer Continental Shelf.

A number of states have binding requirements to shift to 100 percent renewable or non-emitting resources in the electricity sector by mid-century. These include California, Hawaii, Oregon, Washington, Colorado, Nevada, New Mexico, Maine, Massachusetts, Virginia and

New York, as well as the District of Columbia and Puerto Rico. Several other states have regulatory or executive orders in place requiring the same goal, including Wisconsin, Connecticut, New Jersey, Rhode Island and Arizona.

About 30 states, plus Washington, DC, have enacted binding renewable portfolio standards (RPS). Eighteen states plus the District of Columbia and Puerto Rico have also adopted laws or policies requiring 100 per cent renewable or non-emitting electric generation by mid-century. Several other states have non-binding RPS programmes or renewable energy goals. State RPS programmes operate by setting renewable energy targets for each year and requiring electric utility companies to achieve that level of renewable power. As a result, RPS programmes are the primary drivers for renewable energy investment in the United States and are spurring significant investment in renewable energy infrastructure in many states. RPS compliance is usually managed through a system of tradeable renewable energy credits (RECs), with one REC representing one MWh of renewable power. In general, RECs are registered by state agencies and are tradeable instruments.

In addition to mandatory RPS programmes, 'green power' programmes allow US energy consumers (including residential, commercial and industrial users) to purchase renewable or 'green' power from their utility company or independent power supplier. Both energy suppliers and businesses looking to offset energy consumption purchase RECs on the voluntary market to meet green power targets and demand. Voluntary REC supply is dominated by wind, though solar is increasing its market share. At least 50 per cent of retail customers in the United States now have an option to purchase 'green' or low-carbon power from their utility. Net metering programmes allow grid-connected customers with renewable energy systems installed on their property to offset their electrical usage and sell excess electricity to their utility. Several states have also implemented feed-in-tariff programmes that provide a higher price to consumers generating certain types of renewable energy. These programmes have aided the expansion of residential and commercial solar projects in the United States, but net metering programmes are not universal across the United States.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Wind energy projects are subject to a range of federal, state and local environmental, land use, and natural resources laws and regulations. A project may require multiple permits, along with consultation and coordination between multiple agencies. Access to transmission also remains a significant constraint for many wind projects since wind energy resources in the United States are not always located near demand. Developing new or expanded transmission lines can increase the complexity of the above regulatory requirements. For projects located on federal land, federal land management agencies act as the primary permitting authority. For projects on private or state land, permitting authority is vested in one or more state agencies in some states. In others, the primary permitting authority for a wind facility is the local planning commission, zoning board, city council, or county board.

BOEM administers the offshore wind leasing process on the outer continental shelf (OCS) (three nautical miles offshore) through a competitive bidding process. Offshore wind projects also must coordinate with the US Coast Guard during construction and to address any navigational hazards. BOEM has held several auctions, resulting in the sale of various leases

to develop offshore wind projects, primarily on the east coast. The timeline for developing an offshore wind project, however, is long, and the first wind turbines were only installed in US federal waters in 2020. The Biden administration has set a goal of developing 30 GW of offshore wind by 2030. In May 2021, BOEM approved an 800 MW project offshore of Martha's Vineyard, MA. And on 18 January 2022, BOEM approved the Construction and Operations Plan for the South Fork Wind Farm. Although project detractors are challenging those approvals, it represents the first federal approval of a large offshore wind facility in the United States. Several other large offshore wind projects are currently undergoing permitting and approval processes at BOEM. At present, BOEM continues the offshore wind leasing process and is reviewing several other applications to permit, develop and operate large offshore wind projects in US waters. The IRA will further open up large parts of federal lands and the OCS to wind energy leasing and production but would also condition such wind leases on first holding future federal oil and gas lease sales.

Renewable energy projects have seen significant litigation over environmental impacts and other issues. Litigation may involve local issues, such as noise, siting and site-specific impacts, or may implicate broader state or national policies. With respect to wind energy, impacts on birds are a frequent focus of litigation. The Migratory Bird Treaty Act (MBTA), the Endangered Species Act, and the Bald and Golden Eagle Protection Act all protect certain species of birds with civil and criminal penalties. Under the Trump administration, the Department of the Interior determined in 2017 that the MBTA is inapplicable to incidental injuries or killings of birds, including those caused by wind projects. The Biden administration has since withdrawn this determination: the Fish and Wildlife Service (FWS) published its final rule revising the MBTA interpretation on 4 October 2021, reinstating its position that 'incidental takes' are prohibited under the MBTA.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar energy experienced another record year in 2022, accounting for approximately 46 per cent of all new generating capacity nationally, though solar power (both small and large-scale) still generates only a small percentage of the total electricity in the United States. However, 16 states generated over 5 per cent of their electricity from solar in 2022. Overall, US solar capacity grew by 14.1 gigawatt-hours (a 34 per cent increase over 2021), despite ongoing tariffs on imported solar cells and modules and uncertainty created by supply chain problems. Predictions estimate that solar energy could represent over 20 per cent of total US electricity by 2050.

Many states and the District of Columbia continue to offer incentives, such as up-front rebates, tax credits (including exemptions from property and sales taxes), production-based incentives, and solar renewable energy credits. An anticipated increase in the need for end-of-life management of photovoltaic (PV) solar panel waste is driving states such as California to take measures in support of streamlined solutions, including through a new 2020 regulation designating PV waste as 'universal waste', alongside electronics, batteries, and other low-risk hazardous waste. A few states are experiencing some pushback as solar expands, due to both transmission issues and high costs to ratepayers. They are in the process of reaching the right balance. Net metering policies are one target of such pushback.

These trends reflect how residential solar, as well as commercial and utility-scale, projects have gained notable traction in an increasing number of jurisdictions across the country. Even so, traditional regulatory approvals and permits are required for these projects, regardless of scale. Residential solar installations, such as rooftop solar projects, generally do not require major regulatory approvals but are required to meet local and state building, zoning, land use and development regulations – including the acquisition of necessary permits. Larger commercial and utility-level solar energy projects implicate a much larger array of federal, state, and local laws – including those concerning land access, siting, water rights, transmission, and environmental review – all of which may be subject to litigation in the process of seeking regulatory approvals.

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

FERC issues licences for construction of new hydropower projects. During the permitting process, FERC and the applicant must ensure compliance with NEPA and must obtain a water quality certification from the appropriate state agency under the Clean Water Act (CWA). In recent years, with an eye toward encouraging this emissions-free resource, both Congress and FERC have enacted laws intended to reduce regulatory barriers for small hydropower projects, projects on existing dams, and projects in man-made conduits such as irrigation canals. In many cases, permittees also must obtain authorisations under various federal laws, including those protecting wildlife, such as the Endangered Species Act. In some states, additional authorisation may be required for hydropower resources to qualify for RPS or net metering programmes. With climate change an increasing concern, some states have increased focus on hydropower as a source of energy; in particular, states in the north-east are exploring ways to import more hydropower from Canada and increase capacity and production at existing hydropower facilities. In 2020, the EPA finalised a rule revising its regulations for the CWA water quality certification process intended to promote hydropower projects. In June 2022, the EPA released a new proposed rule aimed at modifying the CWA Section 401 Certification Process in response to the Trump administration's changes in 2020.

Geothermal projects are regulated by a mix of federal and state agencies, with requirements varying by state and whether the project is located on state, federal or private land. The Geothermal Steam Act of 1970 requires the Department of the Interior to establish rules and regulations for the leasing of geothermal resources on lands managed by federal agencies. These regulations are issued by the Bureau of Land Management. Existing EPA Underground Injection Control Regulations under the federal Safe Drinking Water Act define Class V injection wells to include injection wells associated with the recovery of geothermal energy.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-to-energy is defined as a renewable energy source in many states and plants are therefore eligible to sell RECs. At present, the United States has 75 waste-to-energy facilities that combust municipal solid waste. There has been little development of new waste-to-energy plants since the 1980s and the 1990s; the first new waste-to-energy plant since 1995 was built in 2015. As combustion units, waste-to-energy systems are subject to regulatory requirements similar to those regulating fossil fuel-fired power plants, but often significantly more stringent. The CAA imposes numerous requirements on waste-to-energy facilities, which also must comply with the CWA, the Resource Conservation and Recovery Act and other federal, state, and local laws. Waste-to-energy facilities and related ash landfills have come under increased legal and regulatory scrutiny in recent years and are at times the subject of lawsuits brought under environmental laws.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

In 2007, EPA established a national Renewable Fuel Standard (RFS) programme that requires transportation fuel refiners to displace certain amounts of petrol and diesel with renewable fuels such as cellulosic biofuel, biomass-based diesel, and advanced biofuel. The programme established the annual renewable fuel standards, responsibilities of refiners and other fuel producers, a trading system, compliance mechanisms, and record-keeping and reporting requirements. Companies that refine, import, or blend fossil fuels are obligated to meet certain individual RFS quotas based on the volume of fuel they introduce into the market. The production of biofuels is also subject to regulation under the CAA and other environmental laws. EPA adopted a new ethanol rule in 2019, which allows fuel blends containing up to 15 per cent ethanol to be sold year-round in 31 states. In 2023, EPA set the required minimum volume for transportation sector use at 20.94 billion gallons of renewable fuel in 2023 (up from 20.63 in 2022), with increases for 2024 and 2025 .

The Biden administration had delayed rules setting RFS volumes for 2021 due to pressure on both sides of the issue, and tension continues with respect to what level of biofuels EPA should require. Relatedly, the US Supreme Court recently issued a decision affirming the validity of 'waivers' issued to some smaller refineries that exempt those refineries from certain federal biofuels requirements. On the other hand, conservationists are repeatedly suing EPA for failing to properly consider how increased land conversion and pesticide and fertiliser use needed to meet both the 2022 and the 2023-2025 biofuel targets would impact endangered species.

In 2018, EPA issued a policy statement indicating 'EPA's policy in forthcoming regulatory actions will be to treat biogenic CO2 emissions resulting from the combustion of biomass from managed forests at stationary sources for energy production as carbon neutral'. The goal of EPA's pending actions was to 'promote the environmental and economic benefits of the use of forest biomass for energy at stationary sources, while balancing uncertainty and

administrative simplicity when making programmatic decisions', acknowledging the need for clear regulatory policy even in the face of continued debate on an accounting framework for biogenic CO2 emissions. Disagreement surrounding the potential rule stalled its progress in early 2020. The Biden administration has not indicated that it intends to finalise this rule, although EPA is facing pressure to maintain its carbon-neutral stance.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Carbon capture and storage (CCS) has substantial potential to reduce GHG emissions from industrial sources but has not been widely demonstrated on a commercial scale. On 1 December 2010, EPA published its final rule concerning an expansion of its GHG reporting rule to include facilities that inject and store CO2 for geologic sequestration or enhanced oil and gas recovery.

In January 2014, EPA issued a final rule excluding CO2 streams in CCS projects from classification as a hazardous substance under the Resource Conservation and Recovery Act, provided that the streams are injected into Class VI wells and not mixed or co-injected with any hazardous wastes. CCS projects are potentially affected by several other regulatory programmes. For instance, NEPA and state equivalents may present regulatory hurdles by requiring environmental review of project impacts. State and local agencies may also impose permitting requirements on CCS projects. High costs, complex regulatory schemes and the low price of natural gas have hindered the widespread development of CCS projects. In the future, lower technology costs and the development of multiple revenue streams from the CO2 associated with CCS projects, particularly using captured CO2 for enhanced oil recovery (EOR), may help spur CCS additional development.

President Biden has announced that his administration will support CCS activities, and recent legislation includes funding for research and development and grants to support this emerging industry. On 13 January 2021, the Treasury Department finalised rules to implement section 45Q of the Tax Code. The 45Q programme provides tax credits for capturing and sequestering carbon oxides that would otherwise escape to the atmosphere. Changes to 45Q, passed with the IRA in 2022, provide tax credits of up to US$85 per tonne of carbon captured and placed in secure geological storage, and tax credits of up to US$60 per tonne of carbon injected into oil or natural gas wells for EOR, and for carbon captured and sequestered using photosynthetic or chemosynthetic processes or 'for any other purpose for which a commercial market exists'. Among the clarifications made in the final regulations is a definition of 'commercial markets'. Further, the 2022 changes increase credit amounts for direct air capture projects to US$180 per tonne of carbon permanently stored and US$130 per tonne for used carbon. The changes also reduce the capacity requirements for eligible projects to 18 750 tonnes per year for power plants and 12 500 tonnes per year for other facilities. The DOE also intends to accelerate geological carbon storage projects, each capable of permanently storing at least 50 million metric tons of captured carbon dioxide. BOEM also plans to initiate a process to create a programme for leasing offshore federal lands on the OCS for carbon storage, which could greatly accelerate development of large-scale projects, particularly in the Gulf of Mexico.

Agriculture and forests are a hot topic in current US climate discussions due to their ability to sequester carbon. A number of actions spanning both the public and private sectors are aimed at increasing forest preservation and conservation to increase carbon sequestration and to incentivise agricultural practices that either reduce GHG emissions or increase soil carbon sequestration. In February 2022, the Department of Agriculture (USDA) announced it would invest US$1 billion on projects for farmers, ranchers, and forest landowners to facilitate practices that reduce emissions and capture and store carbon. The IRA is adding significant additional funding for carbon capture based on agricultural or silvicultural practices, promoting climate resiliency and rewarding carbon sequestration activities. The USDA also oversees several voluntary conservation programmes focused on restoring and conserving forest and agricultural lands and enhancing carbon sequestration. These programmes provide financial incentives for farmers and forest landowners to maintain and enhance carbon benefits associated with their farms and forests. With the USDA's charge to promote sustainable land management to increase sequestration, increased funding to these programmes through the IRA could translate into renewed efforts to implement these programmes.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Entities must consider a range of climate issues when undertaking M&A transactions. Risks generally fall into three categories: regulatory, economic and operational risk related to climate change impacts. Some matters also present M&A opportunities, such as incentives related to renewable energy. Matters to consider include:

- material operational or financial risk related to climate change impacts on infrastructure, facilities, supply chains and the like;
- GHG reporting and permitting obligations for certain sectors;
- existence of voluntary GHG reduction goals, attainment of those goals, and related public disclosures and messaging, including compliance with consumer protection laws and the FTC Green Guides;
- EPA or state regulation of GHG emissions and related costs for higher-emitting industries;
- regulatory uncertainty given the rapid development of climate change law in the United States and globally;
- regulatory costs associated with assuring compliance with a plethora of federal, state and local climate change, energy efficiency and renewable energy programmes;
- litigation exposure to claims based upon alleged climate impact of corporate operations or of climate changes on corporate operations;
- financial disclosure and compliance obligations under Securities and Exchange Commission rules and state laws, including emerging disclosure requirements on GHG emissions;
- adherence to the Equator Principles, if applicable, which include requirements for climate impacts;

- impacts on coastlines, ports and other infrastructure related to increased storm intensity and rising sea levels;
- impacts on natural resources and commodities related to climate change, such as water supplies, fisheries, forestry products and crops;
- global economic and security risks related to potentially destabilising impacts of climate change in certain regions; and
- market opportunities related to renewable power, renewable energy credits and offset trading, GHG mitigation and energy efficiency.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

The US is moving on multiple fronts to reduce and regulate GHG emissions. We expect these efforts to continue at both the state and federal levels. At the federal level, these efforts are focused on the development and expansion of frameworks and direct incentives for GHG reduction measures. For example, implementation of the Inflation Reduction Act (IRA) in 2023 is already showing significant efforts to: develop offshore wind production; regulate GHG emissions, including those of methane and HFCs; promote both agricultural carbon sequestration and climate resiliency of farms and forests; expand development and use of biofuels; and decarbonise GHG-intensive industries through higher energy efficiency and transition to low-carbon inputs. The IRA is also revising and expanding the American system of tax credits for renewable energy production and carbon capture. Combined with the US$1.1 trillion bipartisan infrastructure law, government procurement initiatives, permitting reforms, and agency actions to support GHG reduction across various sectors, the federal government has, over the past few years, unleashed a wide range of incentives and programmes that will lead to both significant GHG reductions and related economic realignment in certain industries.

In addition to incentives, the federal government also is focusing on further regulation of high-emitting sectors, with new GHG emissions standards either proposed or under development. And in alignment with global trends, US financial regulators and the Federal Trade Commission (FTC) are focused on new laws and guidelines governing GHG disclosures and consumer protection standards for GHG claims. President Biden also is pushing environmental justice forward in tandem with climate change. In April 2023, he issued Executive Order 14086, 'Revitalizing Our Nation's Commitment to Environmental Justice for All', in which climate justice considerations feature prominently. This effort will further promote environmental and climate justice within federal government initiatives.

Many states also have continued or increased climate regulation at the state level and through regional programmes. At present, over 20 states have net-zero GHG emissions targets, representing a sizeable majority of the US economy. California still leads the charge, but faces competition from New York, Washington, Massachusetts and other states developing aggressive GHG programmes, including increased deployment of renewable energy and a strong focus on the transportation sector, which is now the largest GHG-emitting

sector in many states. While some of these federal and state actions are being challenged or facing pushback, they are likely to lead to increased GHG regulation and action on climate change in the next one to three years.

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