Greening the Cloud:
New Energy and Green Procurement Initiatives

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Agenda

Survey of regulatory initiatives and trends

Facility-based approaches to improving energy efficiency

Role of renewable energy sourcing

Equipment-based approaches to improving energy efficiency
What is Driving Data Center Efficiency Efforts?

**The “Positives”**
- Growth industries tend to receive greater scrutiny
- Public perception associating ICT industry with innovation and efficiency
- Efficiency = Opportunity

**The “Negatives”**
- What is the proper baseline to measure efficiency of the new cloud economy?
- Energy costs, GHG emissions, under-utilization/mismanagement
- Absence of comprehensive energy efficiency legislation
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The Blueprint for Regulation

  - “It is difficult to define energy efficiency for a complex system such as a data center.”
  - “Equipment performance standards are also not the most appropriate way to address products whose energy performance is strongly determined by their in-field installation and configuration. These situations are best addressed by building energy codes and other types of whole-building policies.”

- Industry Collaboration on Development of Metrics and Test Methods
  - Role of The Green Grid
  - Agreement on measurement protocols for PUE, GEC, ERF, and CUE
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Approaches to Regulation

Voluntary Vs. Mandatory

Equipment-based Standards Vs. Facility-wide Performance Measures

and

Promoting and Incentivizing Use of Renewables
## ENERGY EFFICIENCY in a Data Center

### Equipment/Components Based Approach

- **Voluntary**
  - ENERGY STAR
    - Servers
    - Data Center Storage
    - External Power Supplies
    - Battery Chargers
    - Uninterruptible Power Supplies
    - Large Network Equipment
  - FEMP
  - EPEAT/Green Procurement
    - Computer Servers

- **Mandatory**
  - U.S. DOE Federal Performance Standards
    - Servers
  - European Commission's Energy-Related Products Directive
    - Standby/Off Mode Power
    - Computer Servers
  - China

### Facilities Based Approach

- **Energy Star**
  - Benchmarking
  - ENERGY STAR Certified Building Recognition
  - Low Carbon IT Champions
  - Federal Partnership for Green Data Centers

- **LEED**
  - New Construction
  - Existing Construction

### Data Center

- Facility-wide Performance Standards?
- Energy Performance Reporting?
ENERGY EFFICIENCY IN THE DATA CENTER

What are the BUSINESS, LEGAL and REGULATORY ISSUES YOU SHOULD BE THINKING ABOUT?
REGULATIONS

*that affect* facility-wide

PERFORMANCE
how do you
POWER
YOUR FACILITY?
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Metrics and Methodology

Introducing Q2 Data Release
Discover how eBay is tracking their productivity by clicking on the efficiency parameters to see yearly and quarterly results.
REGULATIONS that affect EQUIPMENT
Daniel Eisenberg’s practice is focused on complex environmental litigation, regulatory compliance and product stewardship. Mr. Eisenberg has worked extensively on electronic discovery and trial preparation for a series of products liability and toxic tort cases related to alleged groundwater contamination involving a gasoline additive. During his time with Beveridge & Diamond, Mr. Eisenberg has also represented individual businesses and municipalities in compliance, enforcement, and counseling matters involving NEPA, RCRA and other federal and state statutes.

Mr. Eisenberg is also well-versed in state, federal and international legislation regulating the electronics industry and has advised manufacturers and trade associations on a variety of compliance and market access issues affecting the industry. His work includes advising clients on federal and state initiatives regarding product labeling, energy efficiency, ecodesign and green procurement.
Christopher Hankin  
Senior Director, Environment and Sustainability Policy  
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Chris joined ITI in May 2010, after spending 10 years as the head of Sun Microsystems' Washington, D.C. office. Chris is primarily responsible for ITI’s policy efforts to promote government policies and practices that encourage ICT-enabled sustainable growth and clean energy innovation. This includes both staffing ITI’s Energy and Environment Committee and serving as the Executive Director of the [Digital Energy & Sustainability Solutions Campaign](http://www.digitalenergy.org). As highlighted by his grey hair, Chris has over 35 years of experience in public policy management and advocacy in DC.
Dean Nelson
Vice President of Global Foundation Services
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Dean is the VP of Global Foundation Services for eBay Inc, the world's largest online marketplace. He is responsible for Strategy, Architecture and Operational functions of eBay's Mission Critical Data Centers, Networking and Security Infrastructure Services and Global Supply Chain. Dean is also a core member of the eBay Green Team. Dean has been in the high tech industry for 22 years in technical roles ranging from Manufacturing, Engineering, Quality, IT, Real Estate and Mission Critical Operations. Dean spent 17 years at Sun Microsystems where his final position was Sr. Director of Global Lab & Datacenter Design Services responsible for managing Sun's multi-billion dollar global technical infrastructure portfolio.

Dean is a member of The Green Grid End User Advisory Council, Technical Advisory Board for Mission Critical Magazine, Founder of Data Center Pulse - an exclusive datacenter owner community, author of the Sun Microsystems Blueprint series, Energy Efficient Datacenters, featured as a Sun Microsystems Contrarian Mind, and was identified by SearchDatacenter.com as one of the top five people who changed the data center. Dean is also the recipient of Sun's prestigious Innovation Award. Dean is also an avid blogger through his Geekism blog.
Kathrin Winkler
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As CSO for the world’s leader in cloud computing, Winkler provides the vision, strategy and leadership for EMC’s global sustainability initiatives. She chairs and collaborates with a virtual cross-functional team comprising EMC’s Green Business Leadership to integrate sustainability principles into the corporate culture, the business strategy, and day-to-day operations. Winkler’s passion in such topics as Sustainability in the Cloud, Sustainability Governance Models, and Sustainability as a Cultural Norm has made her a frequent guest speaker in many forums. Winkler is a also a Director of EcoLogic Development Fund, a nonprofit organization dedicated to community-based conservation in Central America, and of the Green Grid, a non-profit open industry consortium dedicated to resource efficiency in business computing.