Data Centers and Servers

Defining “Comprehensive” Data Center Programs, Basis and Collective Program Needs

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Today's Agenda

- Introductions
- Background
- Presentations
- Discussion

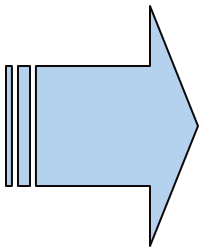
Session Objectives

- To understand how program administrators are defining “comprehensive” data center program approaches and share the underlying basis to inform the program design and implementation strategies.
- To identify common data center program challenges and needs and bi-national platforms, infrastructure or resources that would address these challenges.

CEE Data Centers Initiative

Challenges

- Need for definitions, performance metrics and test procedures
- Many, sometimes competing messages to end users
- Split incentives between IT & facility managers
- Balancing risk and business considerations – reliability, uptime, performance, etc.
- Dynamic nature of market and software and hardware operations



CEE Objectives

- Develop & support consensus-based definitions and performance specs
- Facilitate EE program industry's collective understanding of opportunity, market players & industry motivations
- Identify recommended program strategies to help move more of the market to a preferred outcome

Committee Work Progress

Data center program guidance: Support Efficiency Program Administrators to identify e-savings opportunities, inform program approaches and be a central resource for program methods, results, considerations and lessons learned.

- Definitions
- General
  - National e-trends, market and savings potential, metrics
- Data Center EE Approaches
  - Air flow management
- E-savings principles, potential
- Program approaches
  - Objectives, strategies, applicability, approach, e-baseline and EM&V methods
- Program considerations, lessons learned
- Program results

2011 Proposed Committee Objectives

- Centralize member program intelligence on air flow management (CEE Forum)
- CEE-DOE coordinated assessment opportunity
- ENERGY STAR – inform meaningful specs
- Common member challenge set and national level program infrastructure needs

“Comprehensive”?

Enabling Platforms, Processes, Technologies

- Corporate environmental, energy goals
- Energy benchmarking (e.g., DCiE, output/W)
- Financial and procurement policies (e.g., TCO, buy ENERGY STAR)
- Data center thermal assessments
- Continuous monitoring, commissioning systems
- Asset management, accounting systems
- Integrated design process

Physical Space Optic

IT Systems

- More e-efficient servers, storage, network devices (e.g., E-STAR servers, SPEC benchmark)
- PC and server power management
- Virtualization (servers)
- Data de-duplication (storage)

Facility Systems

- Environmental conditions
- Air management
- Right sizing cooling, central plant optimization
- Free cooling
- Improve power chain, UPS efficiency
- Liquid cooling

Presenters

- Francois Rongere, Pacific Gas & Electric
- Nick O’Neil, Energy Trust of OR

Discussion

- How is “comprehensive” defined? Where are the commonalities across the program described? What other dimensions or elements should be added and why?
- Are the considerations, assumptions, and logic described similar to those in your service territory? Are there additional considerations or assumptions that you would like to add to the mix?
- What are the program challenges? Needs? How have you addressed these challenges or needs? How common are they across the CEE membership?
- Priority areas of bi-national focus – platforms, consensus program design, specifications, etc. – that would address identified challenges that constrain the effectiveness of data center efficiency programs?

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