

Energy Efficiency Procurement Considerations:



Jim Laros, SNL

Chung-Hsing Hsu, ORNL

Daniel Hackenberg, University of Dresden

Steve Martin, Cray

Agenda

- Introduction (~10 min)
 - Steven Martin, Cray

- Panelist presentations (~10 min each)
 - Jim Laros, SNL
 - Chung-Hsing Hsu, ORNL
 - Daniel Hackenberg, TU Dresden

- Q/A session (~20 min)

Panel Discussion: Goal

- ❑ Raise awareness
- ❑ Encourage dialogue
 - ❑ System Users
 - ❑ System Owners
 - ❑ System Vendors
- ❑ Talk about real world usage (use cases)
 - ❑ Today
 - ❑ Next generation

Process

- ❑ Initial team mostly DOE/government agencies, no vendors
- ❑ Collect & analyze existing RFP documents for best practices
- ❑ Draw upon content experts on HPC energy efficiency to modify and supplement best practices
- ❑ Share with vendor community and solicit feedback
 - ❑ sites.google.com/a/lbl.gov/eehpcwg/documents/procurement-considerations-presentations
 - ❑ First presentation by EEHPC working group
 - ❑ Response presentations by Cray, Intel, IBM, and AMD
- ❑ Promote and encourage use in procurement
- ❑ Raise the bar over time!

Measurements (Summary)

- System, Platform and Cabinet
 - (mandatory) 1 per second
 - (important) 50 per second
 - (enhancing) 250 per second
- Nodes
 - (mandatory) 1 per second
 - (important) 50 per second
 - (enhancing) 250 per second
- Components
 - (mandatory) 10 samples per second
 - (important) 100 samples per second
 - (enhancing) 1000 samples per second

Other Consideration

- ❑ Benchmarks
- ❑ Energy Related Total Cost of Ownership (TCO)
- ❑ Power Usage Effectiveness (PUE)
- ❑ Total Usage Effectiveness (TUE)
- ❑ Energy Re-Use Effectiveness (ERE)
- ❑ Power Distribution

Next

- Panelist presentations (~10 min each)
 - Jim Laros, SNL
 - Chung-Hsing Hsu, ORNL
 - Daniel Hackenberg, TU Dresden
- Q/A session (~20 min)
- Thank you for attending!