Computers Energy Efficiency - the California Debate Industry Perspective

CalPlug Workshop, May 12, 2015

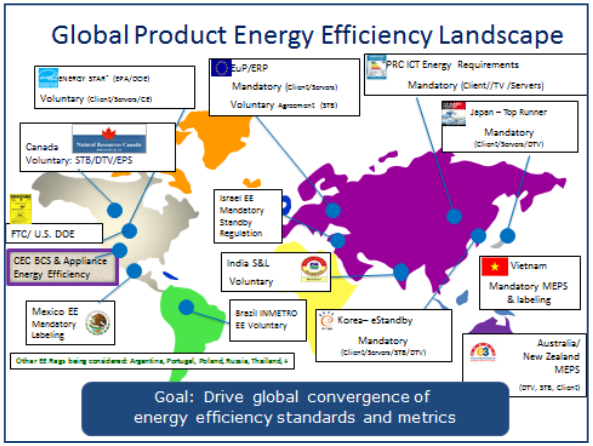
Shahid Sheikh (Intel)

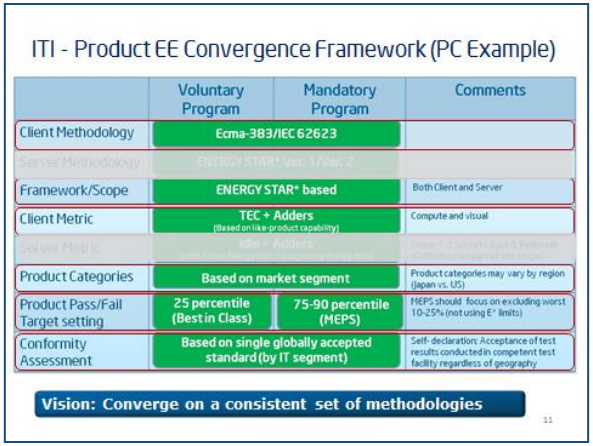
Gabriele Peterschmidt (HP)

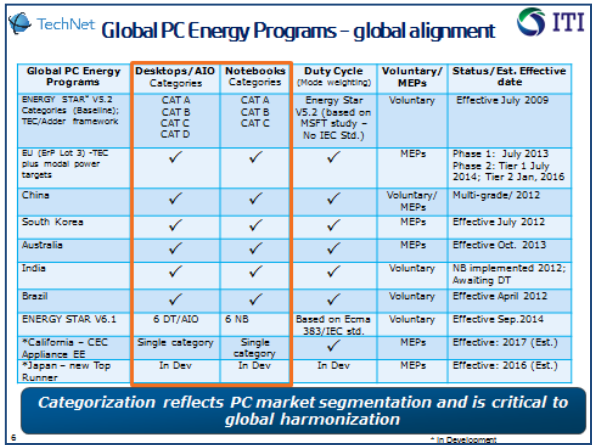
Agenda

- Industry principles on Computers MEPs standards (global perspective)
- CEC staff proposal concerns/our commitment to finding solutions
- Additional recommendations (beyond current pre-rulemaking)
- Wrap/Q&A

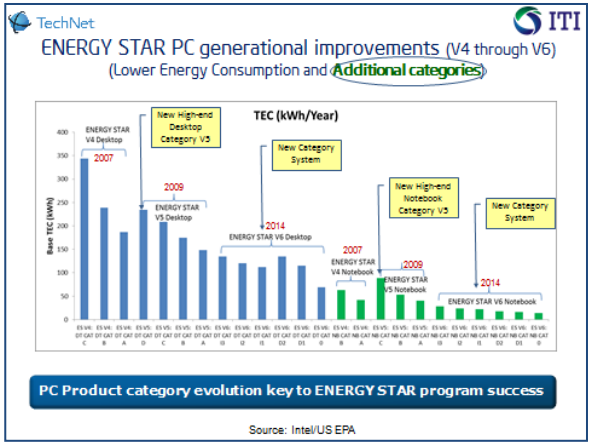
Industry perspective on MEPs standards







- Industry designs and manufactures computers for global markets (key focus on innovation, energy efficiency, and customer choice)
- PCs are complex – with hundreds of configurations across many consumer and corporate segments (different applications, capabilities and power profiles)
- Industry works with global regulators to drive convergence on voluntary and mandatory programs.
- **MEPs Focus**: Data collection, categorization, TEC framework, Int'l standards, targets/adders, exemptions
- **Key considerations**: Technical/cost barriers, lead-time, regulatory impact (energy savings, innovation, cost, economic, product exclusions, etc.)



Goal: Driving global convergence on EE framework and standards

CEC Staff Proposal – Concerns & Opportunities

- One size-fits-all approach not reflective of international standards, and globally accepted PC category approach (comparing like products within a product category)
- CEC targets not based on all shipping system data; it's based on cost effectiveness and technical feasibility. Key issues:
  - Cost effectiveness and technical feasibility assessment data not available; outcome not reflective of PC technical barriers, industry economics and PC ecosystem impact
  - Proposed targets/adders more stringent than voluntary ENERGY STAR v6.1 (~50% reduction in idle power for all Desktop/AIO PCs) – 88% of desktops PCs and 70% of AIO PCs that are ENERGY STAR qualified, fail CEC targets
  - Disproportionate impact on higher-end desktops and notebooks PCs
- Industry is committed to finding solutions working with CEC and other stakeholders.
  - Industry has requested specific data CEC used in drafting the staff proposal for computers and displays
  - Agreed on technical deep dive/demo meetings between industry, CEC staff and other stakeholders. Industry hosting a 2-day event early June. Such engagements should help build a fact-based technical foundation for moving forward.

Industry is committed to working with CEC and other stakeholders 4

Additional Recommendations

- Follow-up on key findings from Computer Power Management Survey and a limited monitoring study (119 Office Desktop PCs).
  - Industry's focus has been on computers system innovation and energy efficiency improvements (including total system power reductions via lower power consuming modes, power management enabling as shipped) from silicon to sub-system to system level (Figures 1-5)
  - However, user behavior matters in traditional power management enabling. Further research warranted into user behavior (including IT management practices).
  - ITI and TechNet are ready to work with CEC and UCI teams to further understand the user behavior issues
- Partner on Intelligent Efficiency (IE)
  - Key opportunity for increased CA energy savings and emission reductions
  - Need help in establishing protocols for measuring the benefits of specific IE applications

BACK-UP

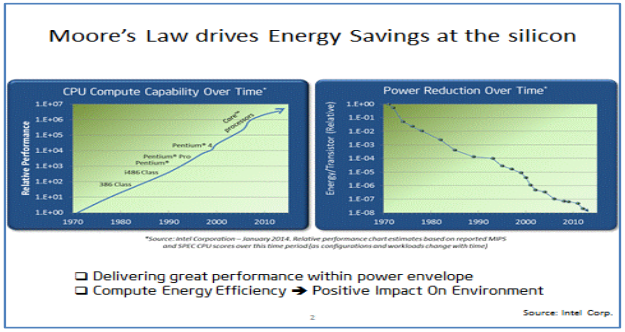


Figure 1

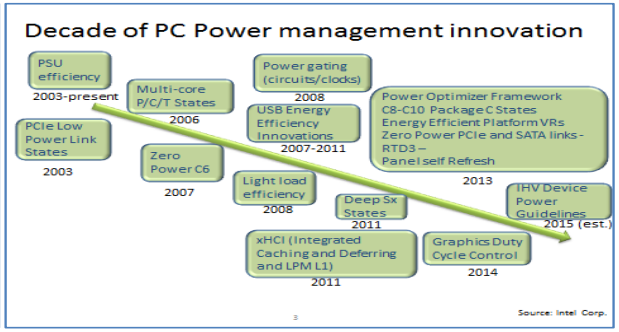


Figure 2

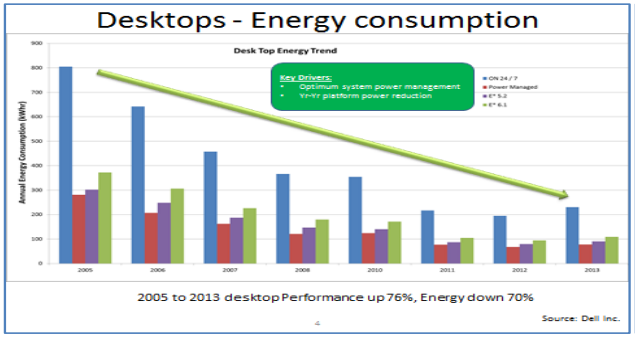


Figure 3

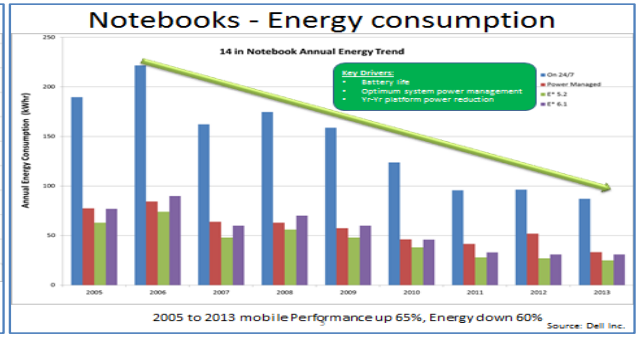


Figure 4

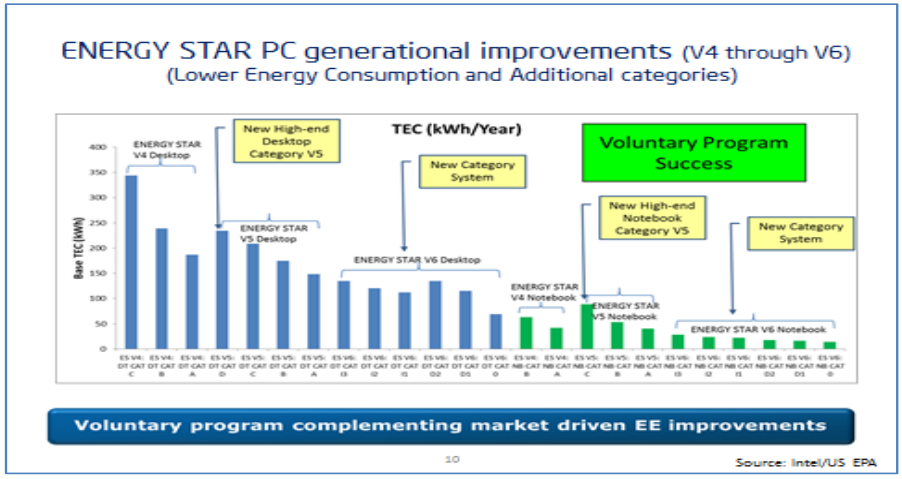


Figure 5