ENERGY STAR®

Version 8.0
Desktop Categorization Discussion

July 12, 2018

Webinar Agenda

1. Introductions and Recap of ENERGY STAR Process
2. Timeline
3. Categorization Systems
   - Summary from March 12 Meeting
   - Simplified Expandability Score
   - P-Score
     - *Benefits*
     - *Drawbacks*
   - CEC Expandability Score
     - *Amendments*
     - *Drawbacks*
   - Summary of Feedback & Open Discussion
4. What's Next?

Introductions

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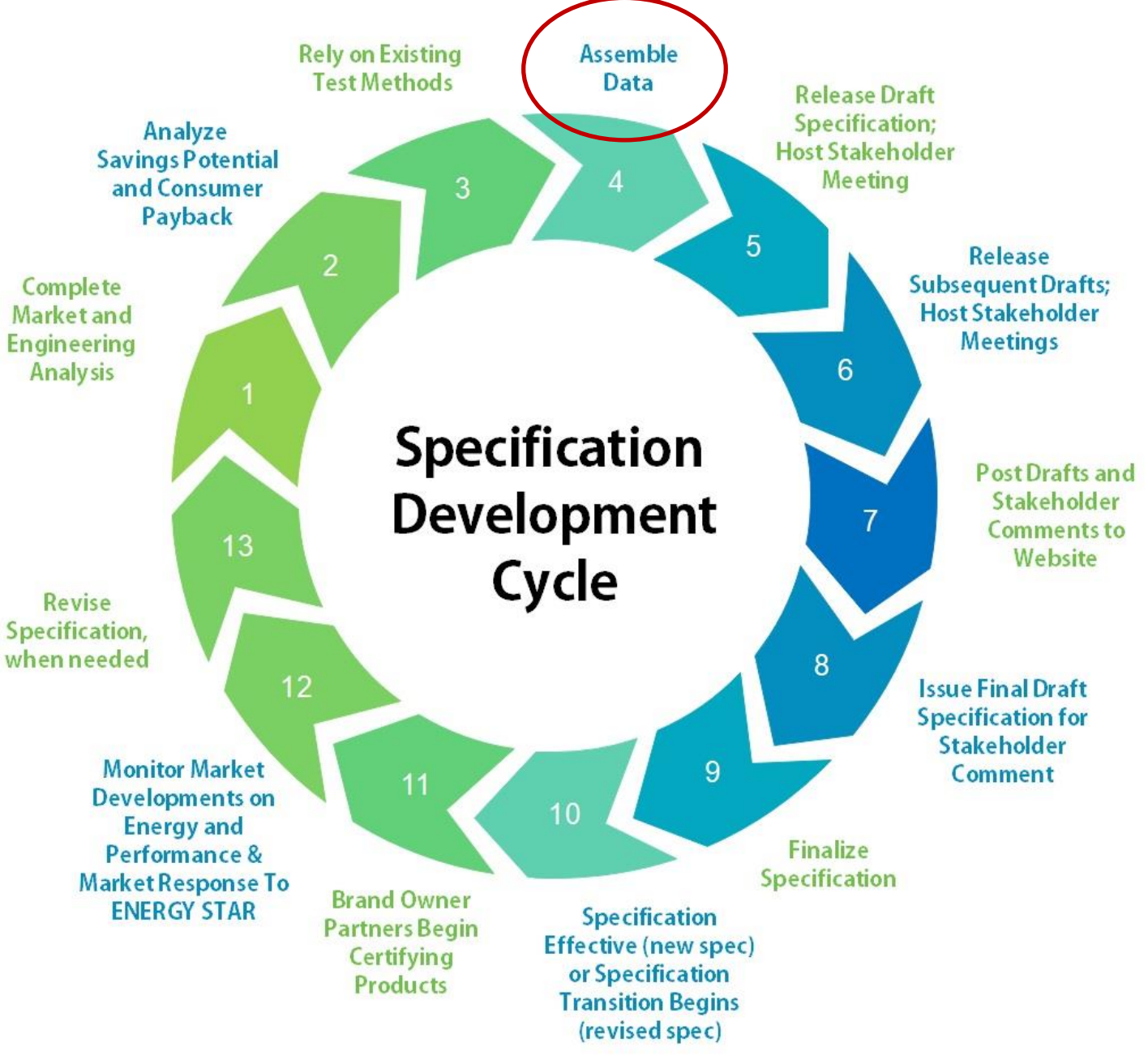
Specification Development Cycle
1
Complete Market and Engineering Analysis
2
Analyze Savings Potential and Consumer Payback
3
Rely on Existing Test Methods
4
Assemble Data
5
Release Draft Specification; Host Stakeholder Meeting
6
Release Subsequent Drafts; Host Stakeholder Meetings
7
Post Drafts and Stakeholder Comments to Website
8
Issue Final Draft Specification for Stakeholder Comment
9
Finalize Specification
10
Specification Effective (new spec) or Specification Transition Begins (revised spec)
11
Brand Owner Partners Begin Certifying Products
12
Monitor Market Developments on Energy and Performance & Market Response To ENERGY STAR
13
Revise Specification, when needed

Timeline for Version 8.0 Development

- Q4 2018: Discussion Document, Collection of Data
- Q1 2019: Draft 1 specification and webinar
- Q2 2019: Draft 2 specification and webinar
- Q3 2019: Final Draft specification and webinar, Final Draft specification
- Q2 2020: Version 8.0 effective

Summary of March 12 Meeting

- Stakeholders presented three options to consider for desktops:
  - P-Score (existing metric)
  - CEC Expandability Score
  - Simplified Expandability Score
- No clear winner identified.
- Stakeholders indicated they would ideally like to see a metric that is currently in use vs. something new.

Simplified Expandability Score

- **Concept**: Use combination of PSU size and expandability attributes to differentiate
- ***Pros***: Approximates CEC expandability score with simpler inputs
- ***Cons***: Provides less differentiation within individual product families, creates an additional unique desktop category system in the marketplace

Remaining Categorization Approaches

- Updating existing p-score approach vs. CEC expandability score approach
  - P-score: Used in Version 6.0/6.1 and V7.0(notebooks). Uses a combination of processor and graphics capability to determine appropriate performance category of product.
  - CEC Expandability Score: Used in CEC computer regulation. Correlates with the power supply sizing necessary for a system to be able to power the core system plus potential expansions through externally and internally available ports and interfaces.

Advantages of Updated P-score

- Adjusts to current generation hardware through the tuning of the performance boundaries in a given product type.
- Reliably scales within a product family when the family includes a range of performance configurations. (A higher p-score correlates with a higher performing product and typically greater energy consumption).
- Design-neutral approach is independent of form factor and product type.

Disadvantages of Updated P-score

- Scalability in performance vs. energy may continue to decrease across p-values in some product categories due to improvement in newer CPU and GPU technologies, lending support to a reduction of p-score categories.
- Chipset architecture differs across product types (e.g. desktops vs. notebooks vs. tablets/slates) that requires vigilance as new product subcategories and form factors emerge.
- Processor technology improvements necessitate periodic specification revision.

Question #1

- Would consumers be negatively impacted by continued use of the p-score approach to identify the top quartile of the desktop market in Version 8.0, and if so how?

Advantages of CEC Expandability Score

- Introduces opportunity to simplify to a single configuration, creating clear expectations for TEC.
- Consensus that expandability generally scales well with the size of power supply used in desktop products.
- Provides potential longevity for efficiency requirements.

Disadvantages of CEC Expandability Score

- Introduces additional adders, which may allow for increased energy use in products.
- Scope is limited to desktops and integrated desktops.
- Inability to differentiate across a range of configurations covered within an ENERGY STAR product family.
- Sensitive to number and type of IO ports and/or memory configuration in a product that may or may not be used. Such adders (i.e., ports with high expandability adders such as USB-C and Thunderbolt 3.0) may place products in energy categories not reflective of actual use.
- May introduce incentive to upsize power supplies in higher end products to reach exclusion category and meet easier workstation requirements instead.

Question #2

- At what point, would amending the CEC approach to fit within the ENERGY STAR program trigger significant additional testing and certification burden?
  - Potential areas for modification include:
    - Simplification and/or reduction of various port adders
    - Focusing on features/ports on the motherboard rather than external ports
    - Ensuring high end desktops are not treated as workstations

Question #3

- Aside from harmonization with CEC, are there any additional benefits that have not been shared which give CEC expandability an advantage over p-score for identifying the top quartile of the market?

Summary of Latest Feedback and Thoughts

- There is no clear preference from major desktop OEMs on CEC expandability score vs. p-score for ENERGY STAR desktops
  - Some find the simplicity and familiarity of p-score appealing
  - Most mentioned that there is a larger learning curve for adopting CEC expandability score, and that ENERGY STAR modifying the existing approach in any meaningful way introduces additional complexity in educating CBs and test labs.

Summary of Latest Feedback and Thoughts

- There is a clear preference from major desktop OEMs to not use the proposed simplified expandability score approach
  - A third unique approach complicates the market, creating significant burden on partners
  - Unclear that simplified approach more effectively differentiates products vs. CEC expandability when more desktop data becomes available for review

Summary of Latest Feedback and Thoughts

- To this point, EPA has not found a compelling reason to significantly alter the existing desktop category system, but remains open to the idea depending on supporting information
  - Both p-score and CEC expandability (with a few minor tweaks) differentiate the top quartile of systems in the current EPA desktop data set
  - Continuing with p-score can lead to a shorter development timeline for Version 8.0

Question #4

- Do partners have access to any upcoming data that suggests a change in the current p-score vs. CEC expandability dynamic?

What's Next?

- Additional expandability data coming in through desktop recertifications to Version 7.0
  - This could provide additional insight on whether p-score or CEC expandability makes more sense
  - EPA also requested non-certified product data to consider for level setting purposes.
- EPA encourages stakeholders to reach out with any additional feedback. Will utilize the feedback from this call and any feedback received to inform a Discussion Guide at the end of the year.
- Send feedback to computers@energystar.gov

Final Questions or Comments

Thank You!

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