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ITI/Technet Computer Displays 2 presentation

Additional submitted attachment is included below.

Displays Cost Effectiveness/Technical Barriers

Cost Effectiveness

- CEC has provided no data or analysis to support technological feasibility or cost effectiveness of the proposed limits
  - Analysis performed to get from studies to CEC's limits has not been disclosed
  - Average selling price of passing 20in displays is $20.50 above that of failing displays with estimated 5 year savings $3.60
- CEC analysis states only about 14 percent of the current models meet the staff's proposed standards. However, monitors would only need to reduce their power consumption by 3 to 5 watts to comply
  - No cost analysis provided to show how 3-5W power reduction could be achieved cost effectively

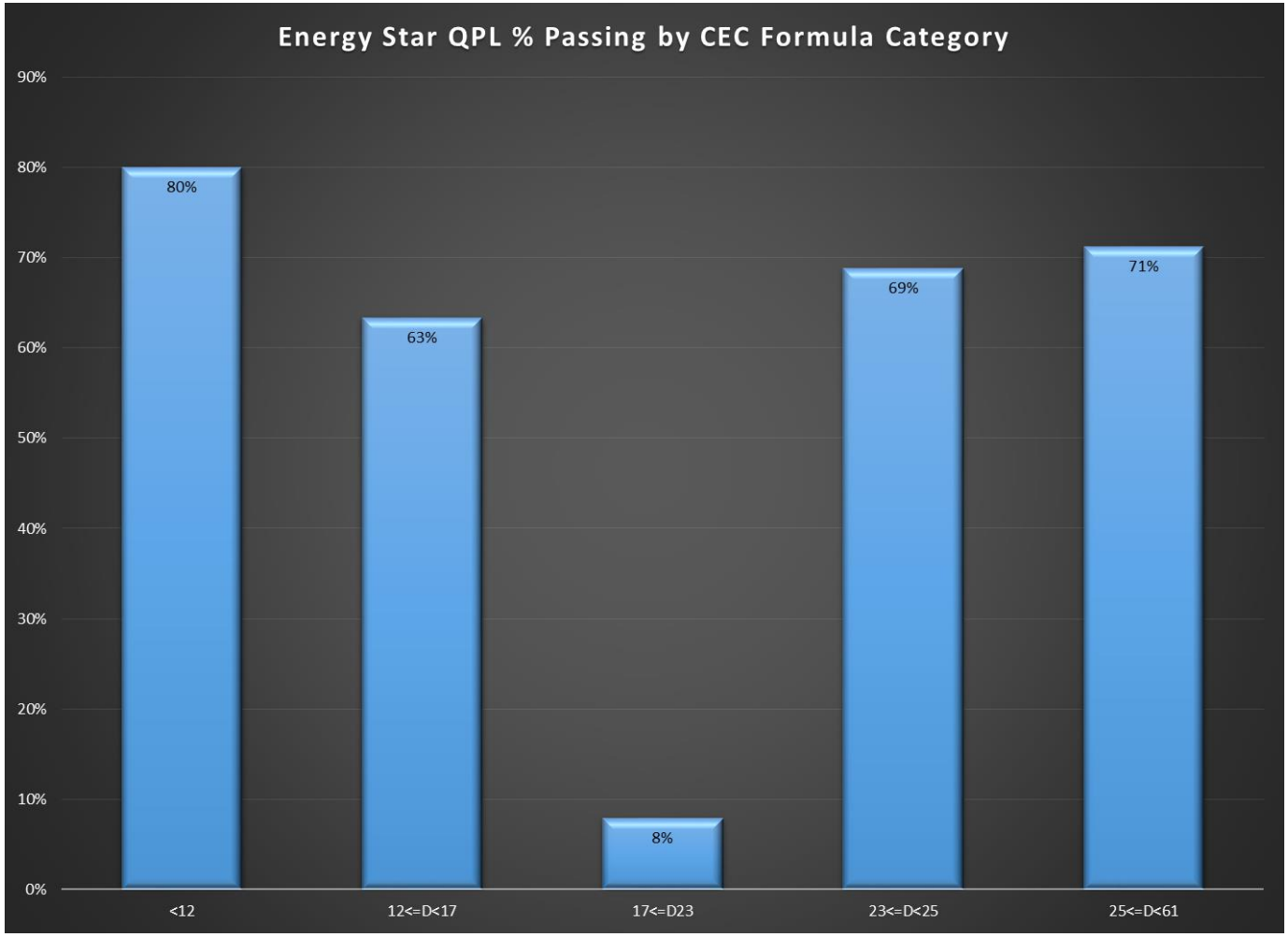
Cost Effectiveness Cont.

- CEC states use of higher Efficiency LED's will allow Displays to meet the more stringent requirements in the allotted time frame
  - No cost data or volume data or reference to a study is provided to validate the assumption
    - Use of higher efficiency LED's assumes ability to use fewer LED's
      - Not validated. (May require redesign of optical systems to prevent/eliminate hot spots)
    - Supply and demand for LED's not factored into analysis
      - Is there sufficient supply of the higher efficiency LED's
      - How will the price of these LED's change if significant volume shifted to more efficient ones?
    - Do the higher efficiency LED's meet all other design requirements of the system
  - New technology/components with advanced performance capabilities come at a cost premium to existing parts and have limited production capabilities.
    - Significant shift of volume to these parts will drive up prices

Cost Effectiveness

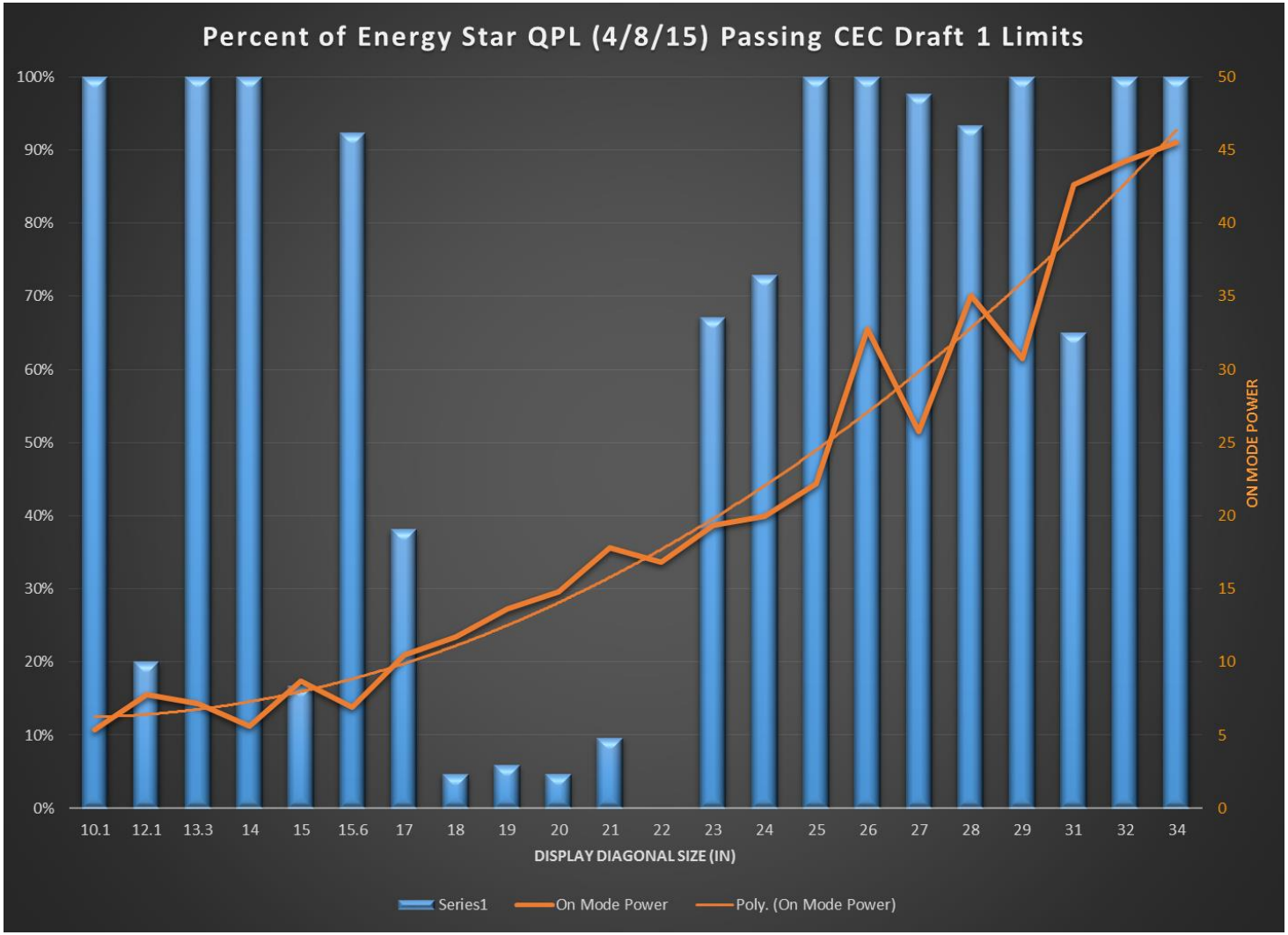
- Automatic Brightness Control (ABC) cost analysis of $0.50 is not applicable to all products since it ignores implementation requirements
  - Need clear window in plastics to get light to the sensor and or a light pipe
  - Must have circuit board in the appropriate area for the sensor or need new PCB and cabling
  - Users much less likely to operate PC than watch TV in low light environment
  - If CEC believes ABC will save energy then PC's TEC analysis should change to allow for PC power management
    - Users can always turn it off or just increase the brightness to 100%
      - Cost remains savings eliminated and Industry later penalized

Energy Star QPL % Passing by CEC formula segmentation



- 17-23 in displays much more severely impacted by CEC proposed limits
  - Same technologies and suppliers used across most size ranges
- What Technology gap or design inefficiency identified in this size range by the studies justify more aggressive requirements

View of CEC proposal affect on Energy Star QPL



- Inequitable application of limits incentivizes end user moving to higher power larger displays

Technical Feasibility

- Key Customer requirements are completely un accounted for in CEC limits
  - Color Gamut large driver of Power consumption but not in analysis
  - CEC regulation will eliminated high color gamut displays from the California market
    - Video editing among industries where color Gamut is essential
- Many of the Higher efficiency technologies described in the study Are not ready for mass production or do not have volume production capabilities.
  - Quantum Dots have yet to be validated for high volume production
    - Cost estimated may not be accurate
- Power Modeling for resolution differences in study questionable
  - Many variables left unaccounted for in this analysis and not held equal
    - Power supply efficiency
    - Other system capabilities / features unaccounted for
  - Cannot project onto entire industry what is measured on couple of systems from a single manufacturer.
    - Correlation to other manufacturers and or sizes in missing

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THANK YOU