



Discussion Slides on Wide Color Gamut Issues in LCD TVs

Peter May-Ostendorp, Ecos Consulting,
postendorp@ecosconsulting.com

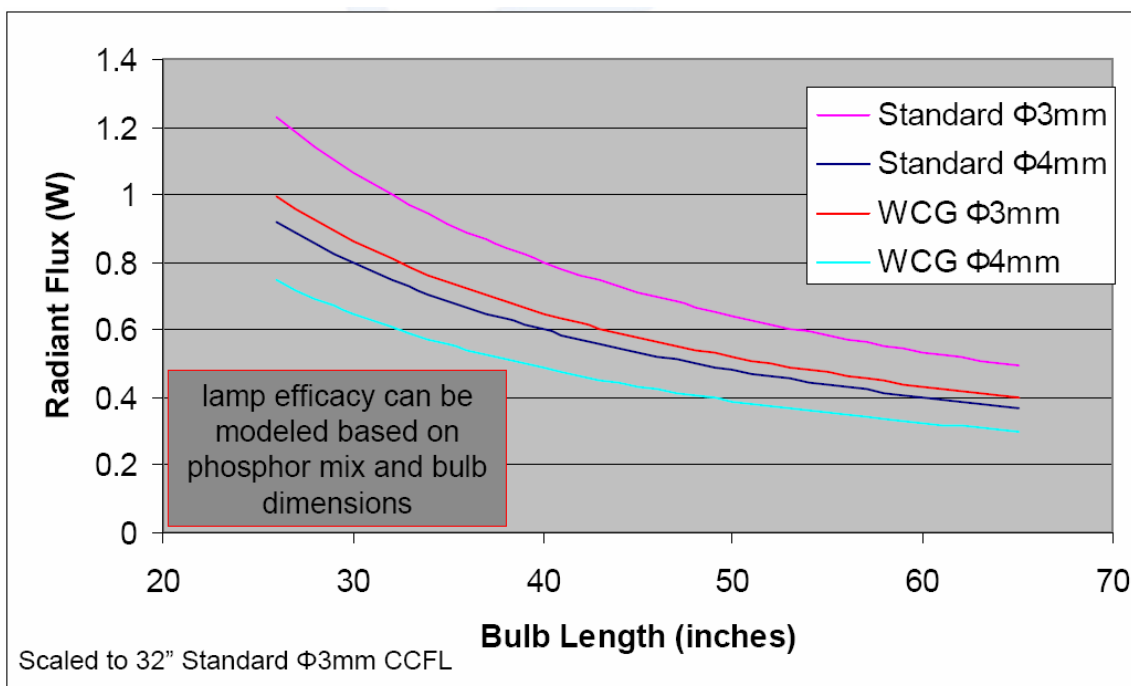
LCD Picture Quality Features



Stakeholder comment summary:

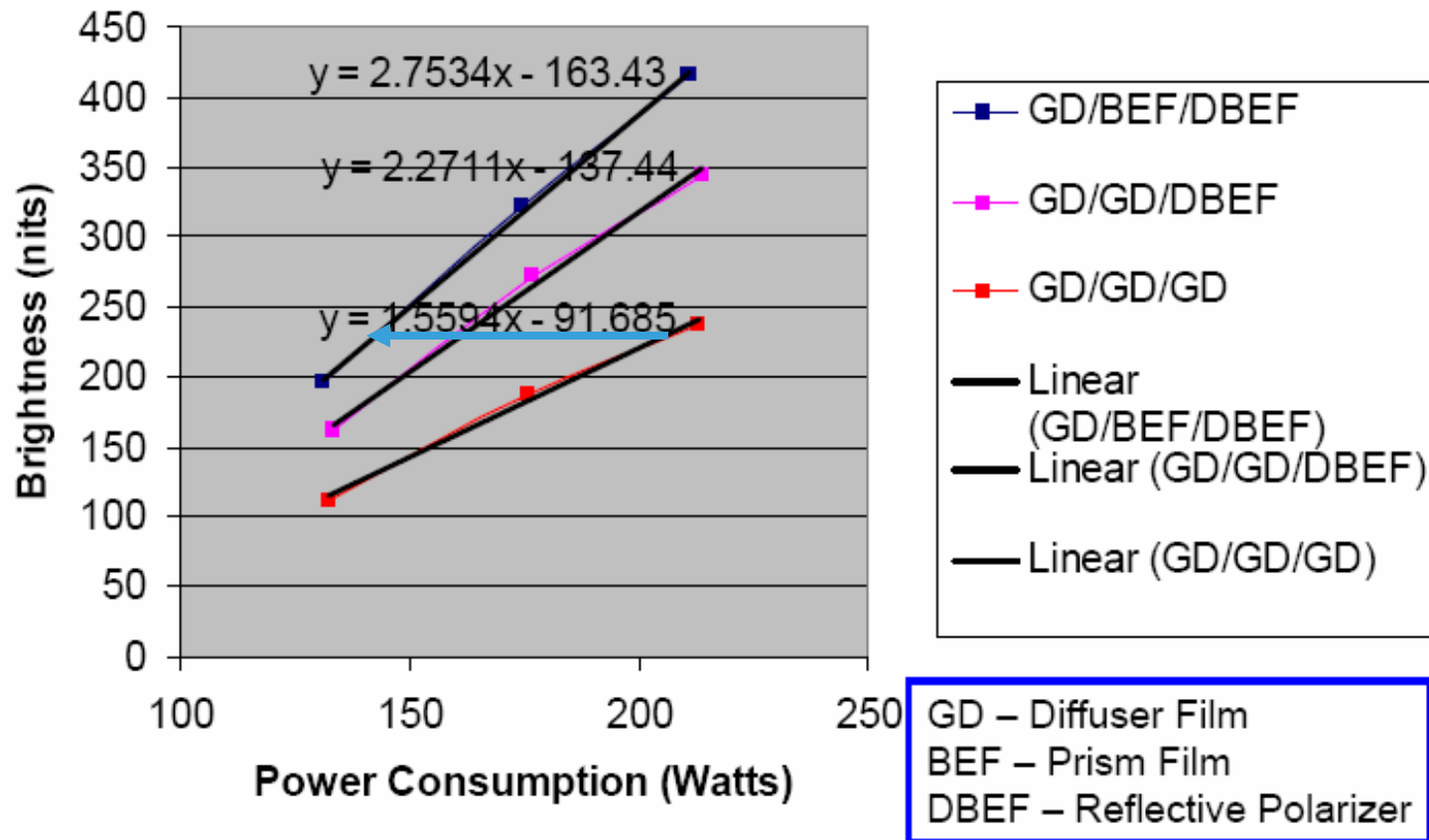
- Features such as wide color gamut backlighting and motion blur reduction result in higher On Mode power consumption in LCD TVs
- The ENERGY STAR team should consider On Mode adders for these features that provide additional functionality to the consumer while consuming more power

Wide Color Gamut in LCDs



- Wide color gamut CCLFs ~20% less efficient than similarly sized standard CCFL bulbs
- However, wider diameter WCG bulbs are *more* efficient than some of today's standard CCFLs (see chart)
- Stakeholder feedback indicates manufacturers shifting to wider diameter bulbs to lower power
- Wide color gamut expected to be available in 40% of LCD TVs >30" in 2008 (DisplaySearch data) and cannot be considered a premium feature

WCG Power Adders Can Be Overcome by Altering Optical Film Stack

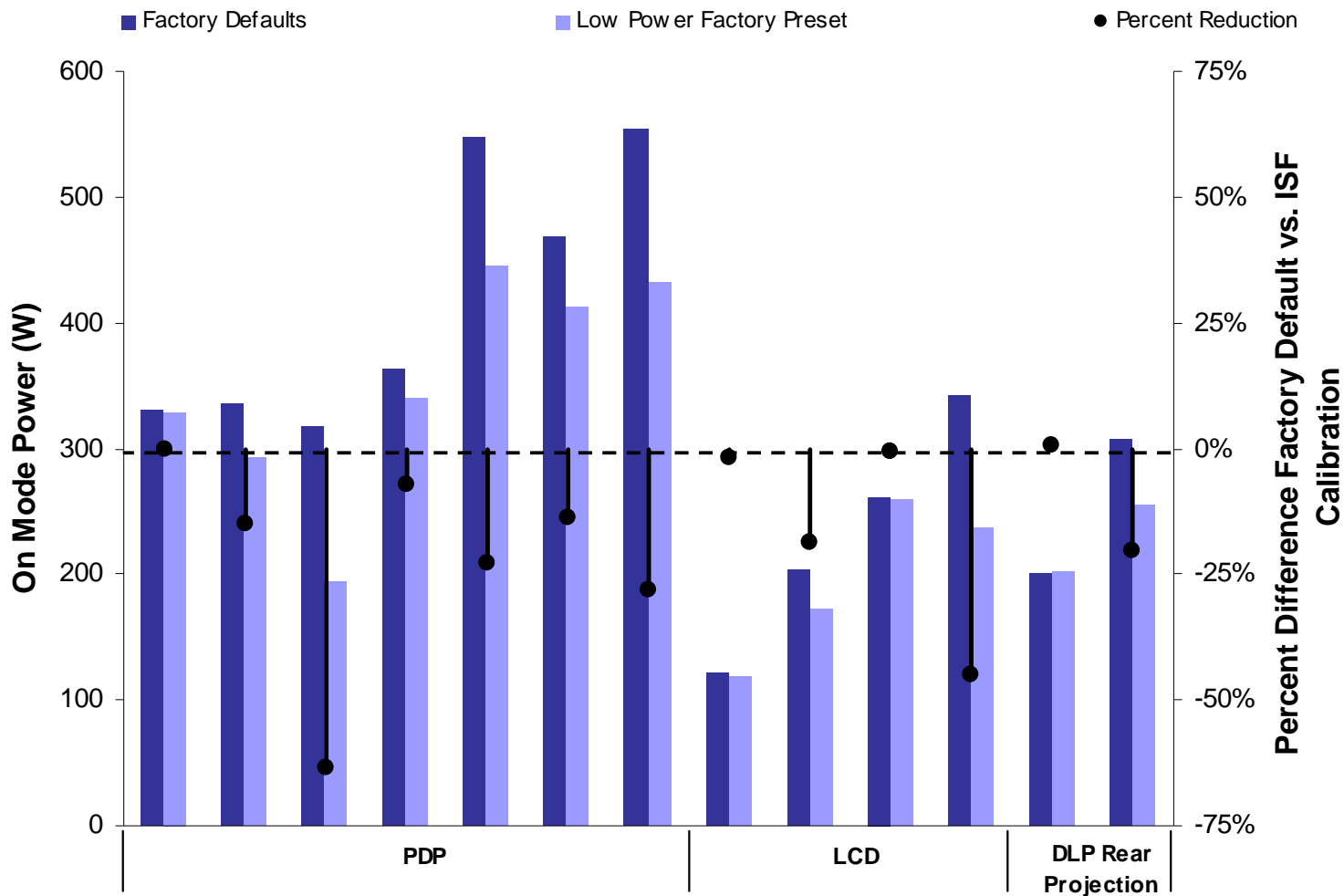


- Improved optics, film materials in LCD TVs can improve On Mode efficiency 20% to 30%
- Example: Moving from red line to blue line (light blue arrow above) yields effectively the same light output with more than a 30% reduction in power consumption

Low-Power Screen Settings Provide Easy, Instant Energy Savings Mechanism for LCDs

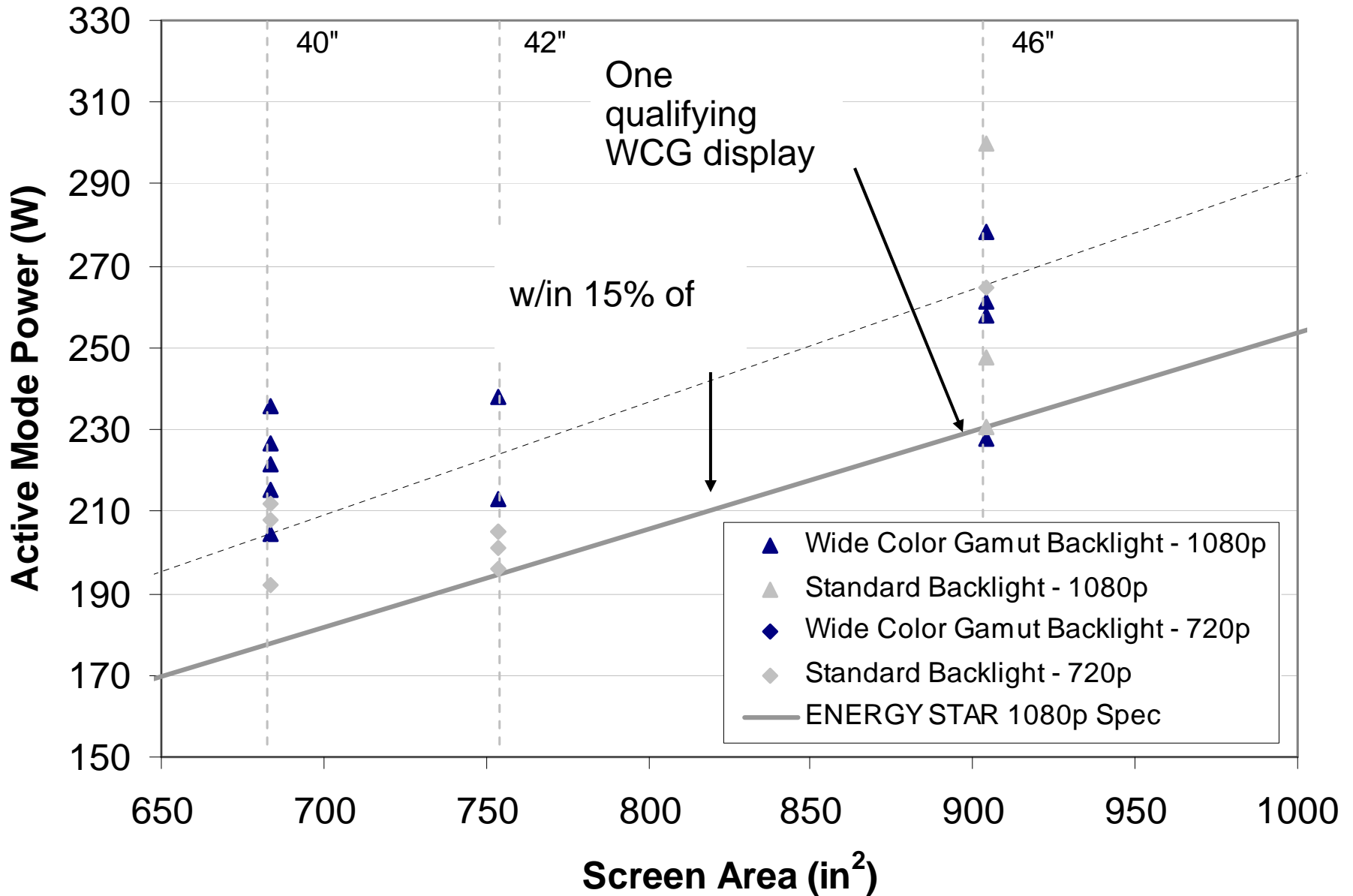


On Mode Power Consumption of HDTVs at Various Screen Settings



Easy way to cut another 25% or more of LCD power consumption for models with controllable backlights AND extend backlight bulb life

Comparison of LCD TVs: Wide Color Gamut vs. Standard Sets



LEDs Could Yield Best Color Gamut AND Power Savings



- As LED efficiency improves, has the potential to dramatically reduce LCD efficiency while improving black levels and color gamut
- Most likely an influencer for Tier II

Summary



- LCDs have a variety of technology options for reducing their active mode power consumption and offsetting power increases incurred by features like wide color gamut
- One existing LCD model with WCG qualifies, and several models are very close to passing ENERGY STAR's proposed 1080p spec line (within 8% to 15% in most cases)
- A technology neutral specification cannot include special considerations for features germane to a certain technology