Electronics:

The Next Big Challenge and Opportunity for Utility Efficiency Programs

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Utility Energy Forum

Emerging Technologies Panel

Granlibakken Conference Center, Tahoe City, CA

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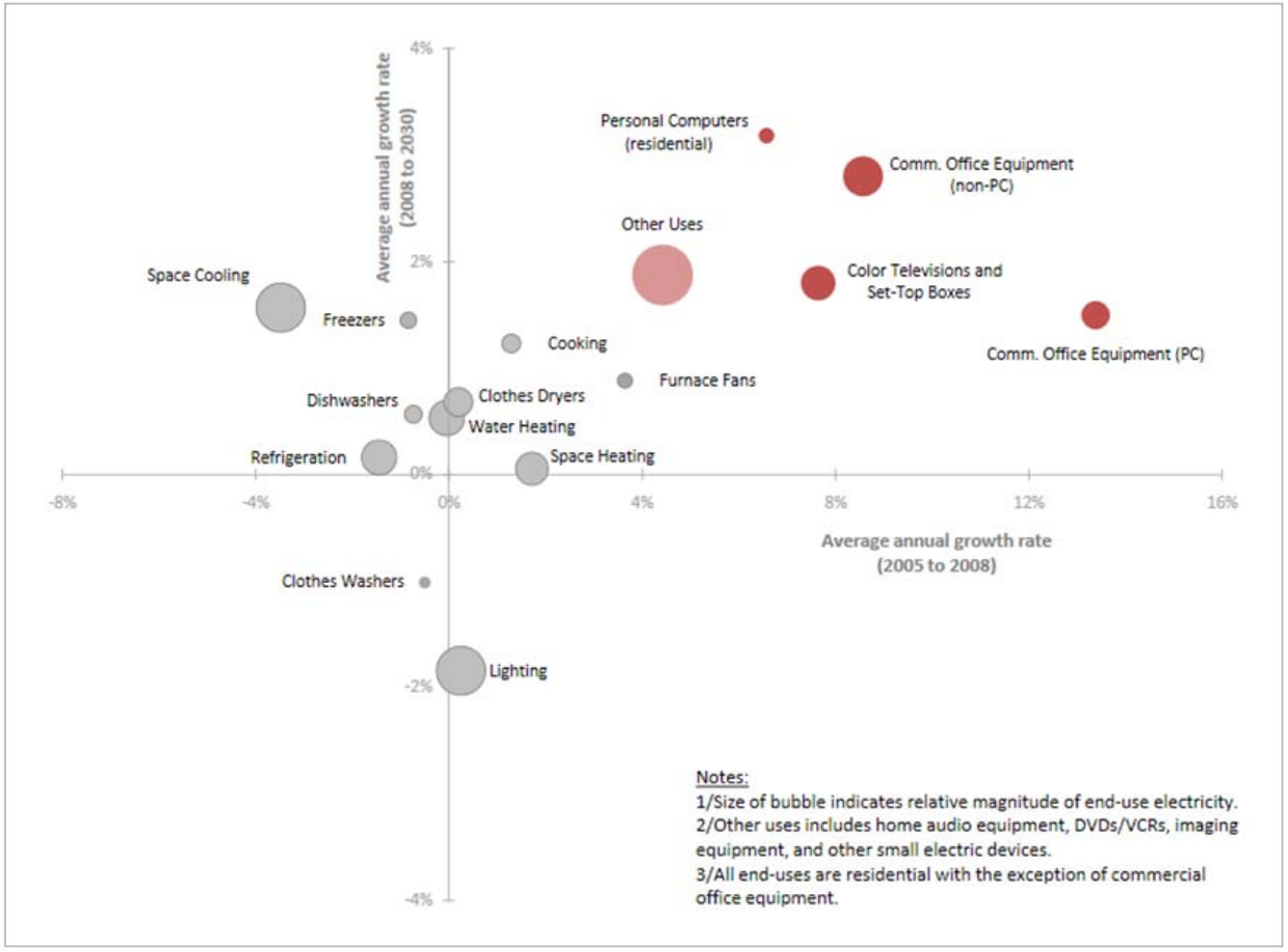
Electronics: The Challenge

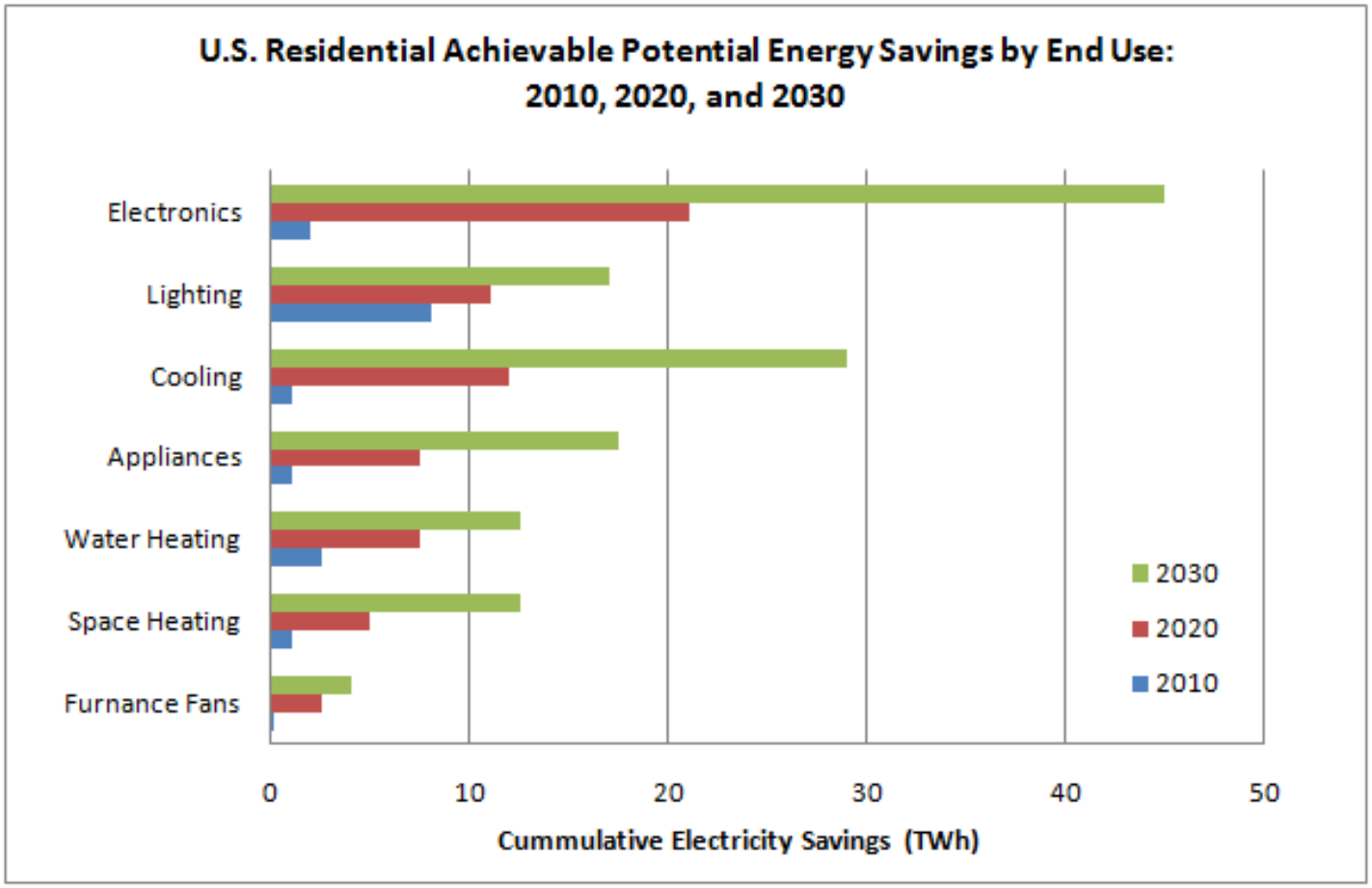
Greatest End-Use Growth Over Next Two Decades



Source: Analysis of "Year-by-Year Reference Case Tables" in EIA 2008. Includes the estimated impact of H.R.6, "Energy Independence and Security Act of 2007" that was enacted in late December, 2007.

Electronics: The Opportunity

Greatest Savings Opportunity Over Next Two Decades



Source: Values approximated from Figure 4-6 in *Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the U.S.: (2010–2030). EPRI, Palo Alto, CA: 2009. 1016987.*

Electronics: Utility Program Solutions

Business and Consumer Electronics Incentive Program

Initial CA Utilities

Pacific Gas and Electric Company®

SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.®

Utility Expansion:

NEEA (2009) and

NV Energy (2010 tentative)

NORTHWEST ENERGY EFFICIENCY ALLIANCE

NVEnergy.

Electronics: Retailer and OEM Engagement

Business and Consumer Electronics Incentive Program

Under Agreement

BEST BUY

WAL★MART

Sam's CLUB

DELL

Sears

kmart

lenovo

nationwide marketing group
APPLIANCES • AUDIO/VIDEO • FURNITURE

Under Discussion

COSTCO WHOLESALE

hp invent

TARGET

ELECTRONICS Fry's

BRAND SOURCE

Electronics: The Growing Product List

- **Televisions**
- **Computers**
- **Set Top Boxes**
- **Laptops**
- **Smart Meters**
- Computer Monitors
- Power Management Software
- Thin Clients
- Servers
- Multifunction devices
- Cell Phones
- Audio Devices
- Battery Chargers
- Professional Displays
- Smartstrips
- DVD Players
- Game Consoles
- Wireless Hubs/Routers
- Internet Providing Modems
- Energy Management Systems
- Digital Picture Frames

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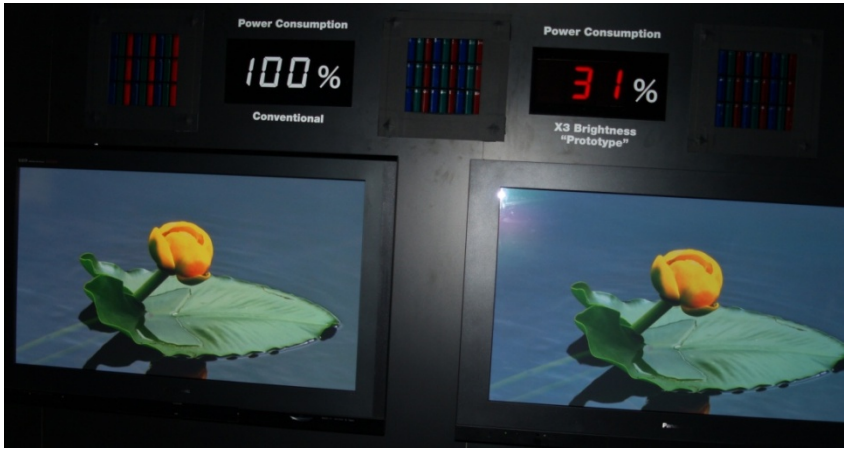
Next Generation TVs:
Samsung's New LED TVs

55" LED model uses same power as typical 32" LCD model.

(Photo from 2009 Consumer Electronics Show)

Next Generation TVs:
Panasonic's New Plasma TVs



Panasonic announced "triple efficiency" plasma TVs at the 2009 Consumer Electronics Show (see photos and press release below).

The "double efficiency" models were showcased at the 2008 CES. Some are available now and others will be introduced throughout 2009.

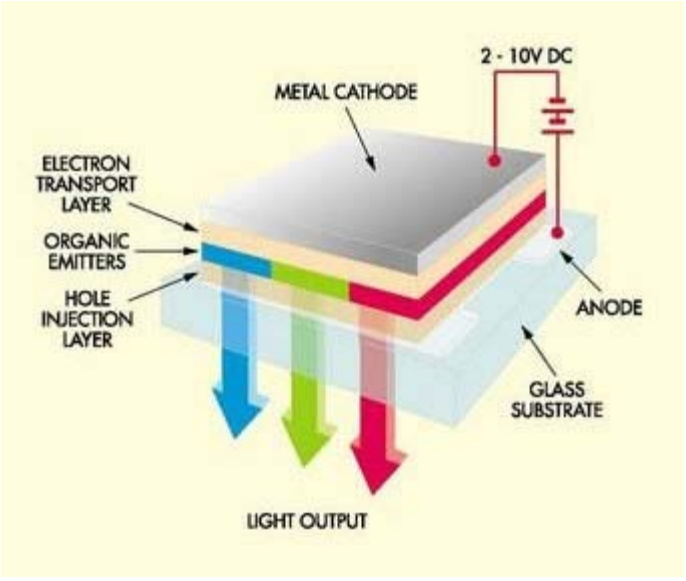
"The newly developed NeoPDP technology has been incorporated into two types of PDPs. The first is a super high-efficiency 42-inch PDP that **achieves triple luminance efficiency, while reducing the power consumption to 1/3 of the 2007 models yet achieving the same brightness**." –Panasonic 2009 CEA Press Release

Full Press Release: http://panasonic.co.jp/corp/news/official.data/data.dir/en090108-8/en090108-8.html

Next Generation TVs:
OLEDs – Will They Make It?

- First OLED TV has entered market today (Sony 11" XEL – 1)
- Could be 50% more efficient than traditional LCD flat panels
- Many others working on OLED development
- DisplaySearch estimates a 167% compound annual growth rate through to 2015
- Cost is major barrier

Sony's XEL-1



OLED panels, use organic, or carbon-containing, compounds that emit light when electricity is applied and unlike liquid crystal displays, OLED panels do not need backlighting, making them slimmer and more energy efficient.

Source: http://www.smarthouse.com.au/TVs_And_Large_Display/OLED_TV/B6P6M6D4

Next Generation Desktop PCs:
Dell's Studio Hybrid

- Dell's "greenest consumer desktop PC"
- Power management features place PC in sleep mode during inactivity
- 87% efficient power supply.
- Uses about 70% less power than a typical desktop

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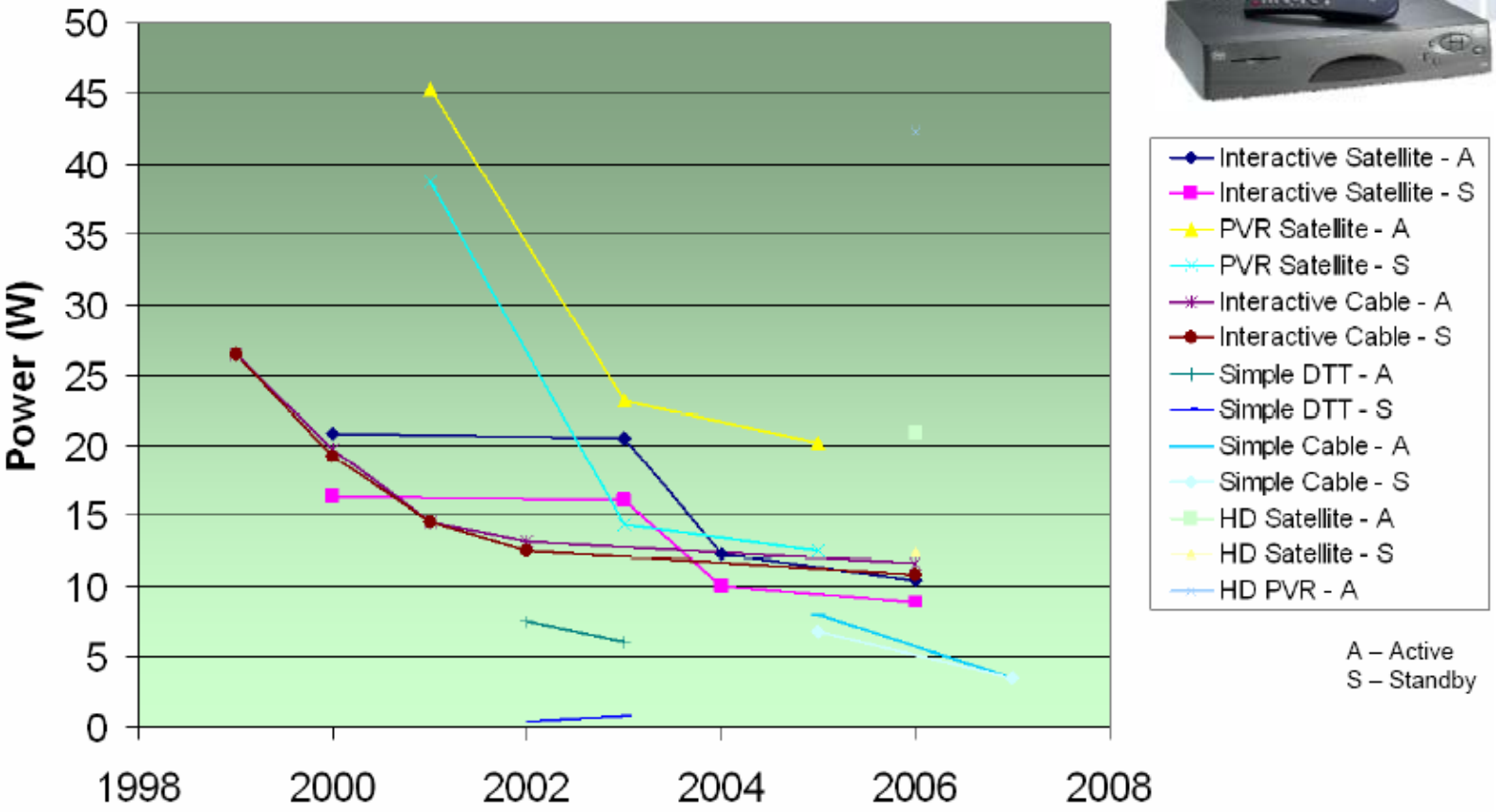
Source: http://www.apple.com/macbook/environment.html

Next Generation Set-Top Boxes:
Pace's Efficiency Developments



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Source: http://www.dtg.org.uk/dtg/summit/summit08_presentations/DTG%20Summit%20Simon%20Forrest.pdf

Next Generation Laptops:
Apple's 13" MacBook

- Hard drive spins down automatically when inactive.
- Processor even throttles down to save power between keystrokes as you type.
- The LED-backlit display consumes 30 percent less power than conventional LCD displays.
- Display is designed to dim when you enter a darkened room.
- Consumes only 14W in idle with the display on, less than a quarter of the consumption of a typical household 60W light bulb.

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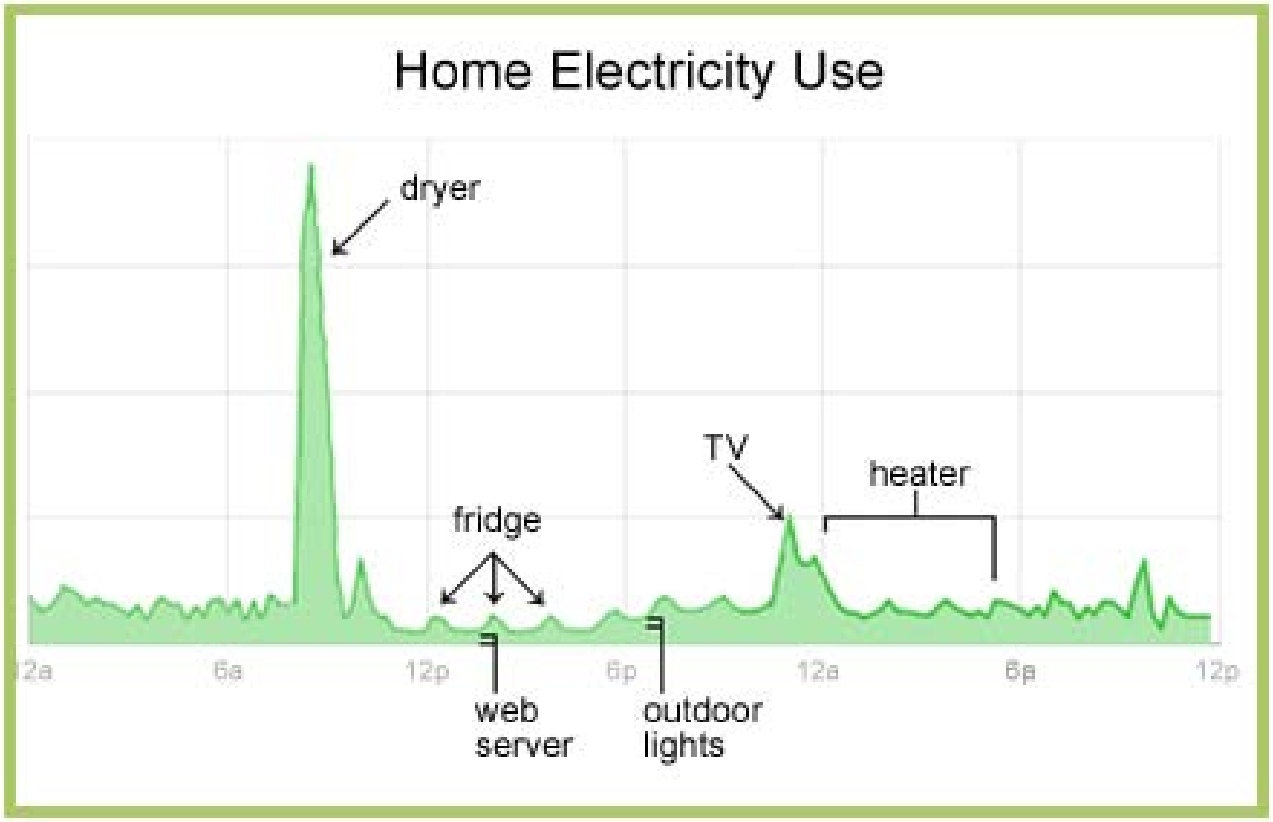
Source: http://www.apple.com/macbook/environment.html

Next Generation Meters:

What if Every Household Knew How Much it Cost to Leave The TV On?



- **40 Million new Smart Meters targeted as part of stimulus bill**
- **Studies show that feedback leads to 5-15% energy savings**

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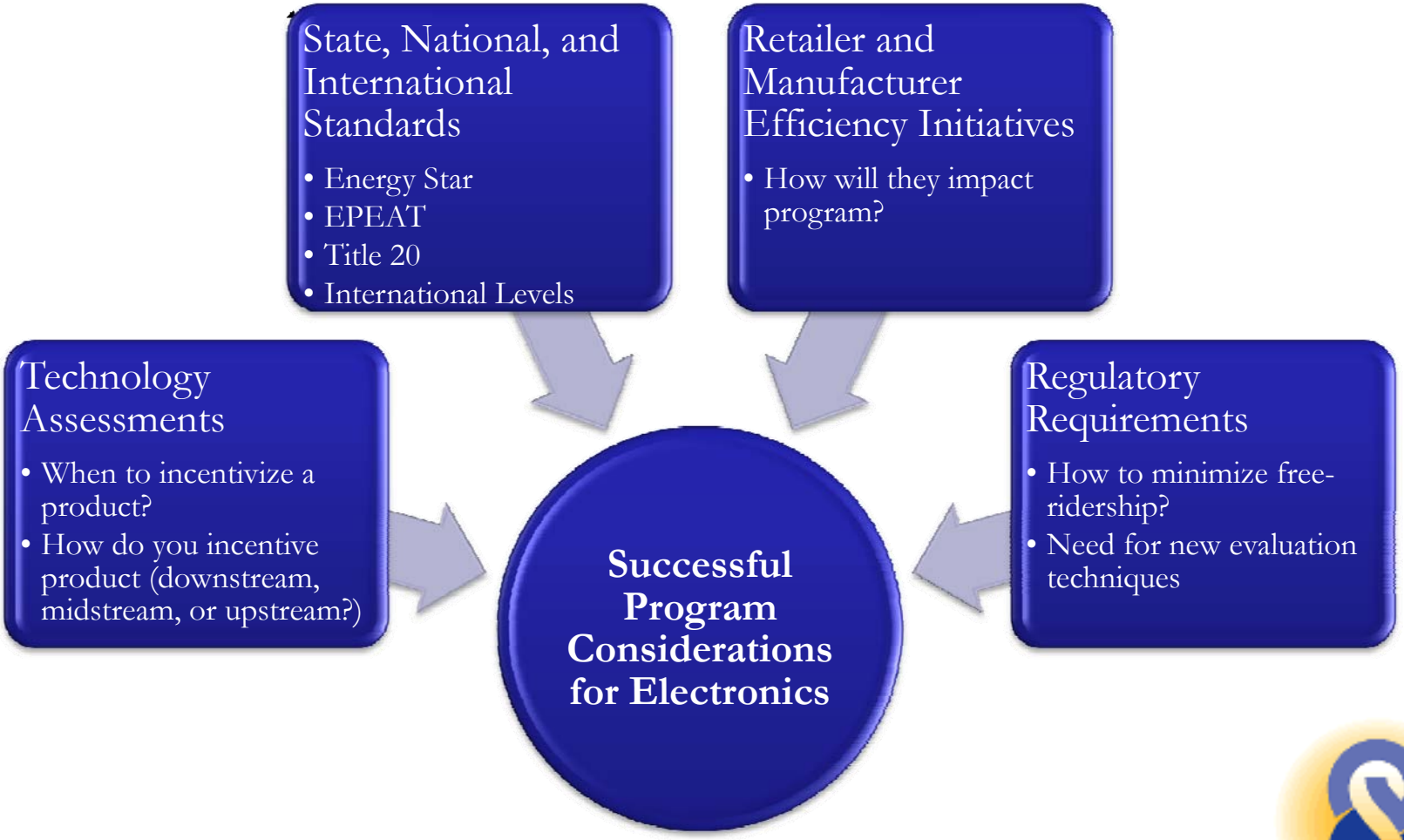
Source: http://www.google.org/powermeter/

Conclusions:

Successful Utility Program Considerations



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Thank You

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