

PG&E Consumer Electronics: Market Trends, Energy Consumption, and Program Recommendations 2005 - 2010

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Overview

- Energy Solutions contracted to research and report on current market trends in consumer electronics and examine program opportunities through 2010
- Covering: Home and Commercial Office Equipment, Televisions, Set-Top Boxes, Home Entertainment Systems, Smart White Goods, and Personal Electronic Chargers
- Two scenarios: Baseline and Improved Case



Product Categories

Home & Small Office

Desktop PCs
Laptop PCs
Monitors
Inkjet Printers
Laser Printers
Scanners
Copiers
Fax machines
Multi-Function Devices
Broadband Devices
Home Router
VoIP

Televisions

CRT
LCD
Plasma
Projection

Set-Top Boxes

Digital cable box
Digital satellite receiver
Digital video recorders
IPTV

Personal Electronic Chargers

Cell phones
Cordless phones
Laptop PCs
Digital camera
Portable audio
PDA's
Rechargeable batteries
Personal hygiene
Other / Misc.

Home Entertainment Systems

DVD players
Home theaters
Component Stereo
Compact Stereo
Portable Stereo

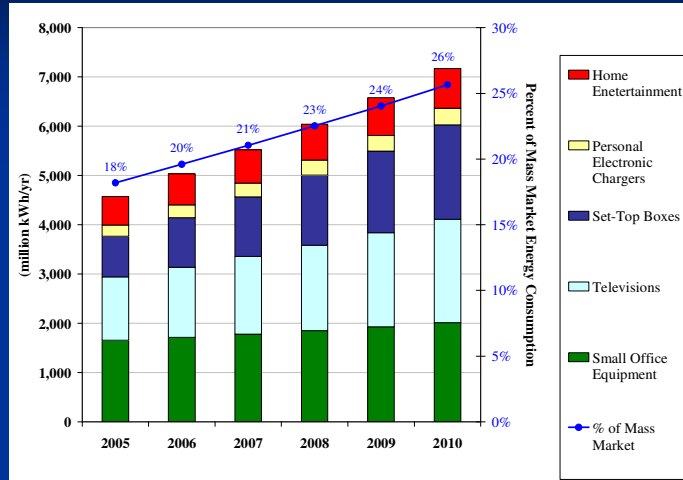


Scenarios

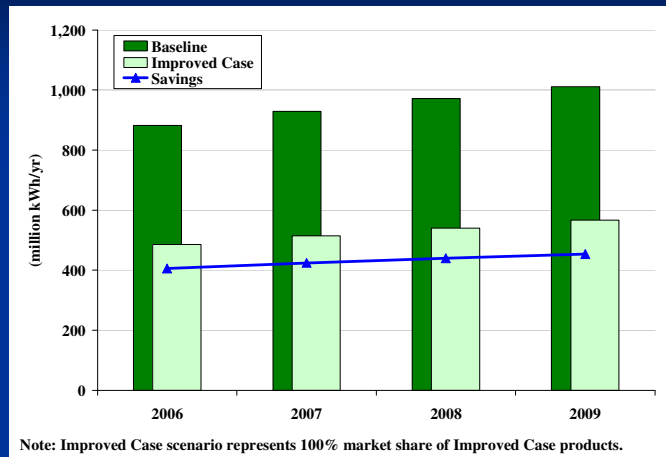
- **Baseline Scenario** – A “business-as-usual” scenario.
- **Improved Case Scenario** – reflects an increased amount of energy efficiency or conservation compared to the Baseline.
 - For each equipment category this could mean a lower average power draw and/or a shift in usage patterns (e.g., a power managed desktop PC spending more time in sleep mode). Generally reflects power levels for devices that are readily available on the market today.



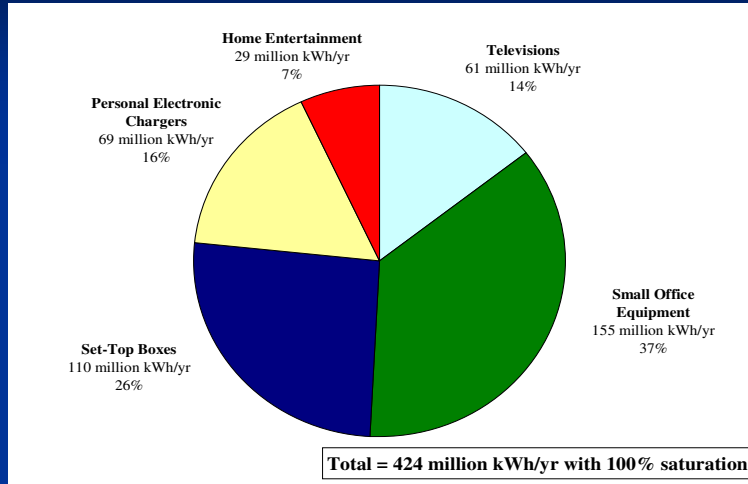
Forecasted Baseline Annual Energy Consumption: PG&E Mass Market Stock



First-Year Annual Energy Consumption: PG&E Mass Market New Shipments



First-Year Annual Energy Savings with Improved Case Scenario: PG&E Mass Market New Shipments in 2007



Program Recommendations

Recommendations **prioritize** products based on:

1. Relative potential energy savings
 2. Program feasibility
- A significant factor for program feasibility is whether power data is readily available to inform program decisions (e.g., from an Energy Star database).
 - In general, standby and low power mode data is fairly accessible for the covered products; however, active mode power data is currently limited.
 - Targeting *active* mode power consumption holds the greatest energy savings potential for voluntary programs in PG&E territory.



Program Recommendations

Product Category	PG&E Program Intervention		Voluntary Program Delivery			Voluntary Program Type		Target End User	
	Voluntary	Codes & Standards	Upstream	Midstream	Downstream	Incentive	Education	Residential	Business
Home and Small Office Equipment ¹	High	Medium	Low	High	Medium	Medium	Medium	Medium	Medium
Televisions	High	Low	Low	High	Medium	High	High	High	Low
Set-Top Boxes	Medium	High	Medium	Medium	Low	Medium	Medium	Medium	Low
Home Entertainment Systems	Low	Low	Low	Low	Low	Low	Low	Low	None
Personal Electronic Chargers	Low	High	Low	Low	Low	Low	Low	High	Low

¹The voluntary program recommendations for the Home and Small Office Equipment category are for *computers*, primarily due to the forthcoming revised ENERGY STAR specification that will become effective on July 20, 2007. The codes & standards intervention recommendation is primarily for computer *monitors*.



Program Recommendations

Highest recommendations for a near term PG&E voluntary program focus on:

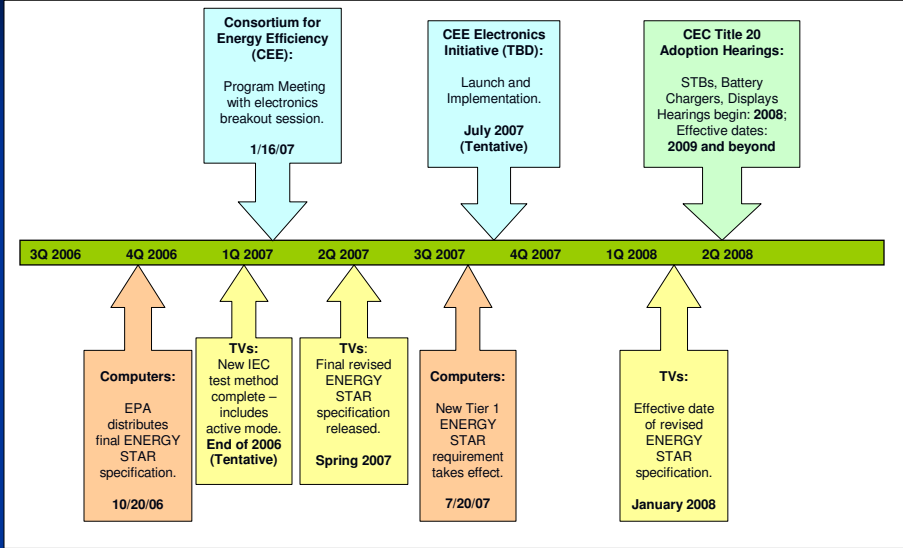
1. **Computers**
2. **Televisions**

Two key drivers:

1. Wide range of efficiency levels for the current computers and televisions on the market—indicating that a program could promote the most efficient models on the market.
2. Both have forthcoming ENERGY STAR specifications that can lay the groundwork to identify and promote the most efficient models on the market.



Key Intervention Timeline



Thank you

- Energy Solutions: Alex Chase, Ryan Ramos, and Ted Pope

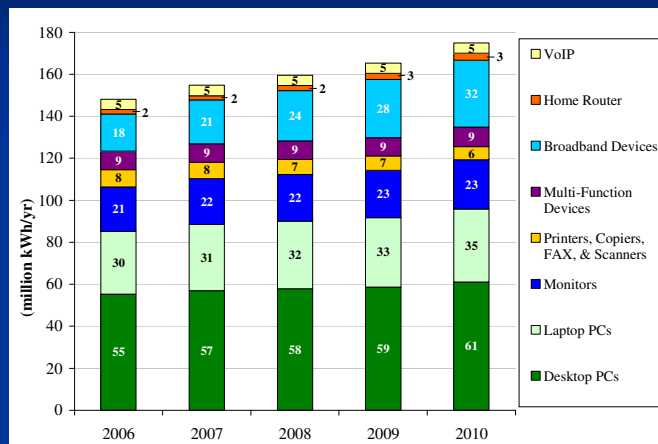


Appendix

- Additional slides showing savings potential for each product category.



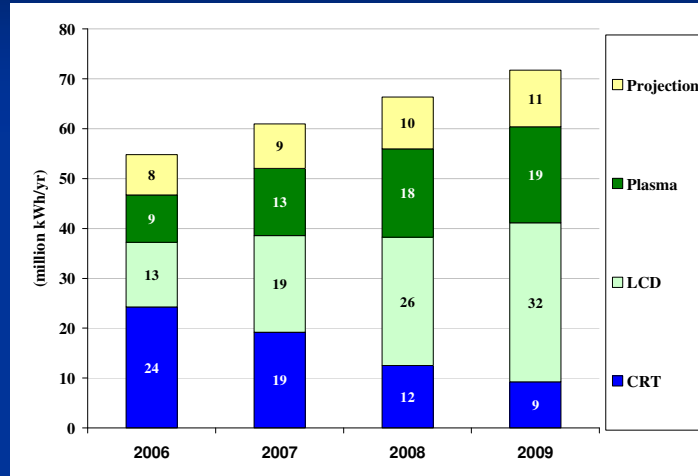
Small Office Equipment - First-Year Annual Energy Savings with Improved Case Scenario – 100% Market Share for New Shipments to PG&E Mass Market (million kWh/yr)



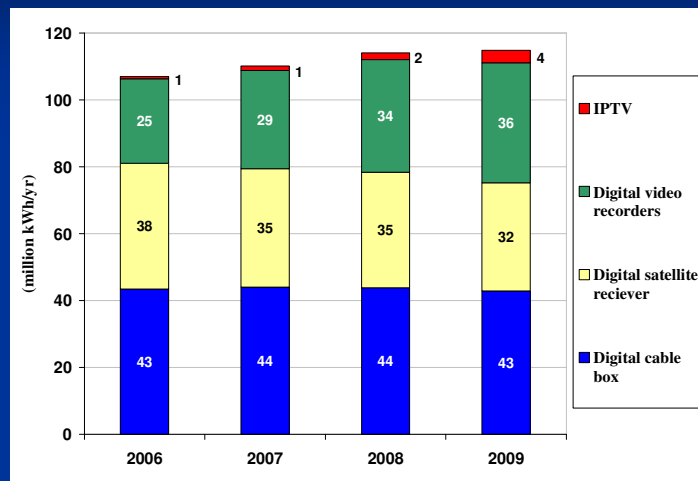
See Small Office Equipment Appendix for detailed values.



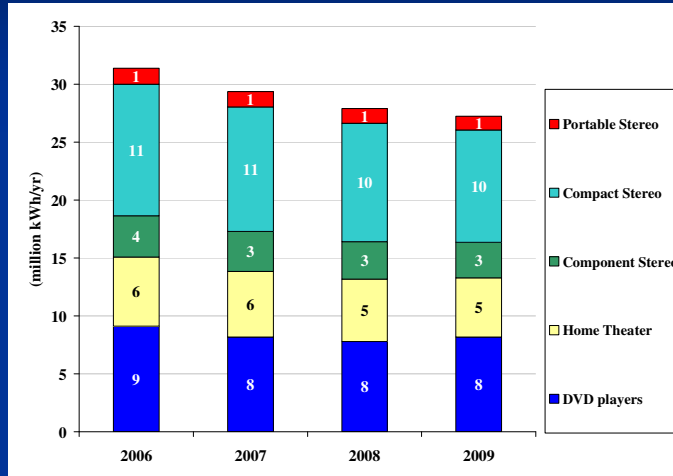
Televisions - First-Year Annual Energy Savings with Improved Case Scenario – 100% Market Saturation of New Shipments to PG&E Mass Market (million kWh/yr)



Set-Top Boxes - First-Year Annual Energy Savings with Improved Case Scenario – 100% Market Saturation of New Shipments to PG&E Mass Market (million kWh/yr)



Home Entertainment Systems - First-Year Annual Energy Savings with Improved Case Scenario – 100% Market Saturation of New Shipments to PG&E Mass Market (million kWh/yr)



Personal Electronic Chargers - First-Year Annual Energy Savings with Improved Case Scenario – 100% Market Saturation of New Shipments to PG&E Mass Market (million kWh/yr)

