



Consumer Federation of America

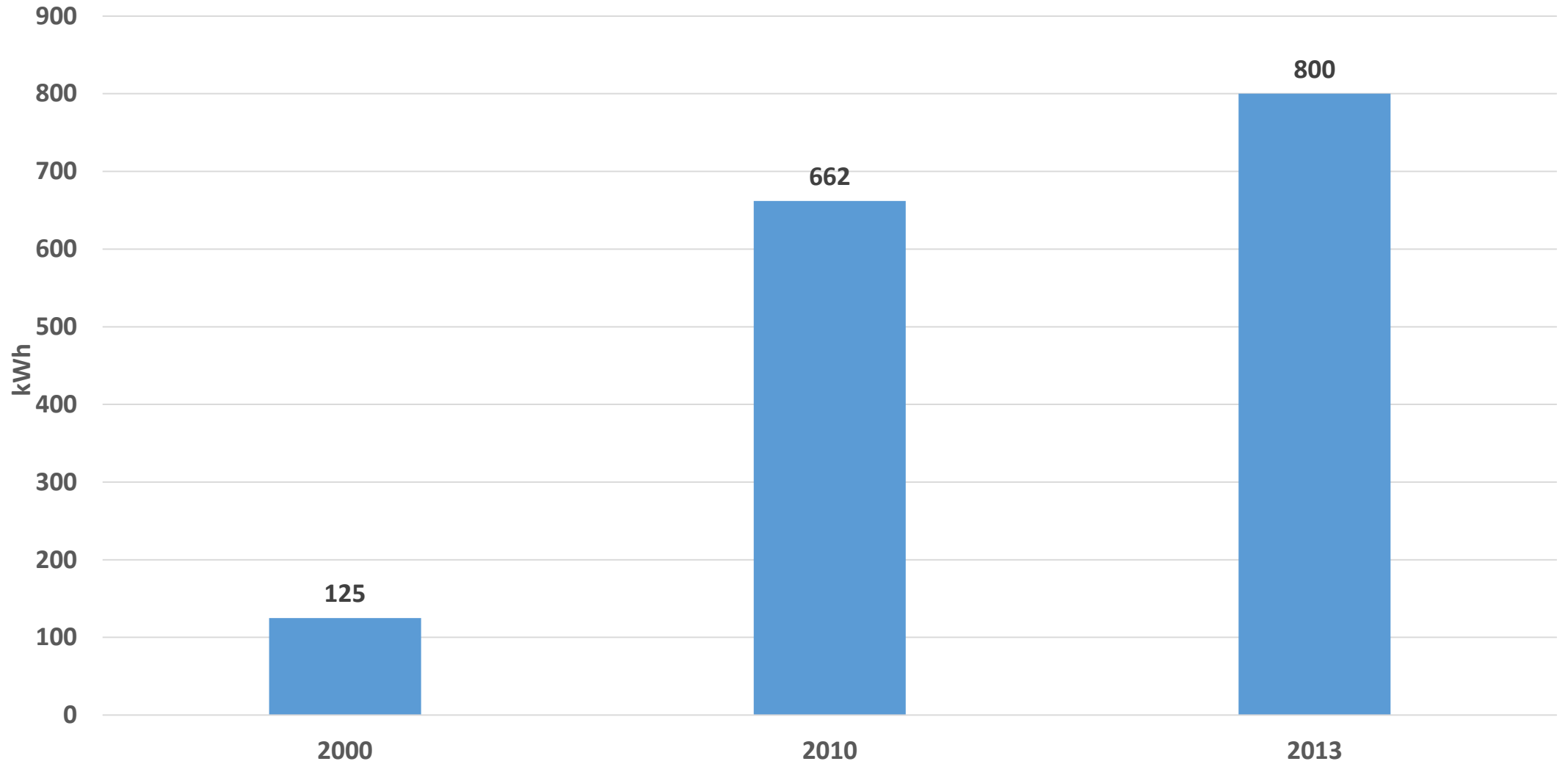
**Energy Efficiency Performance Standards: Driving Consumer and
Energy Savings in California**

Mark Cooper, Director of Research

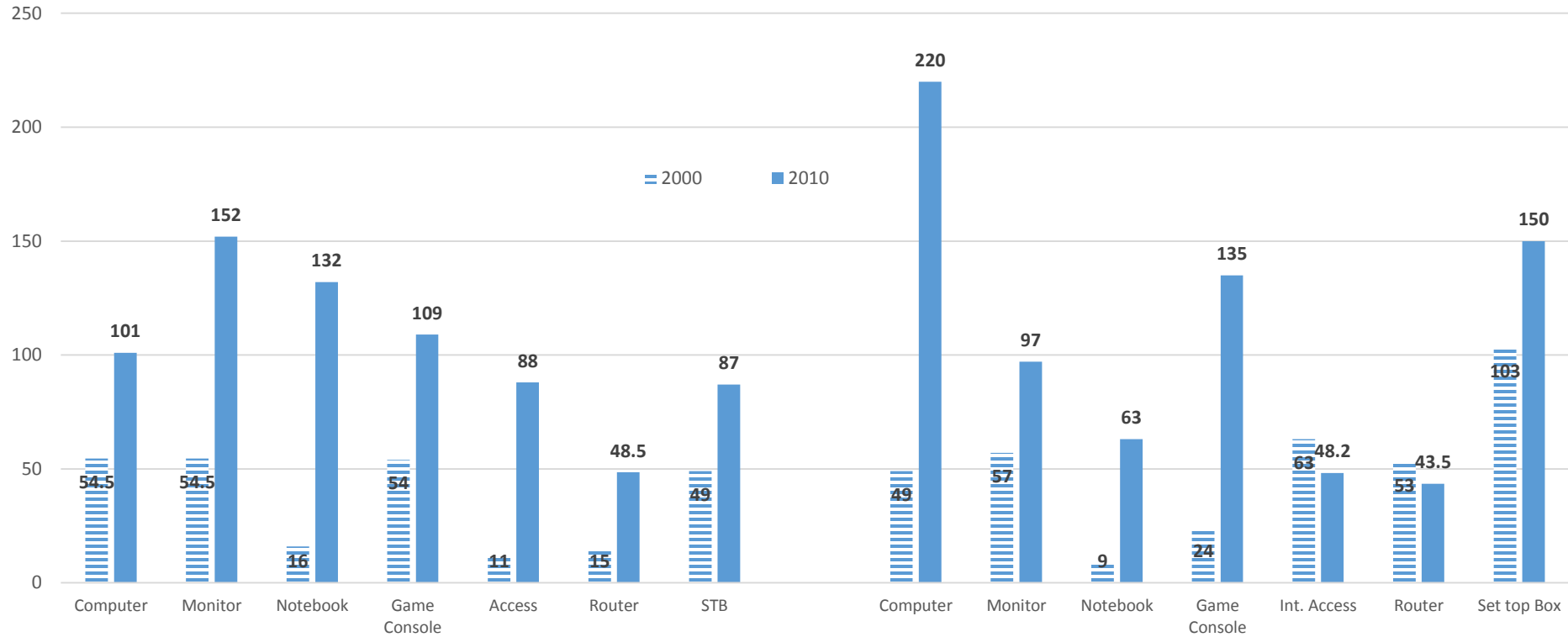
California Energy Commission Workshop on Computer Standards

April 15, 2015

Weighted Average Annual Consumption of Households Digital Devices



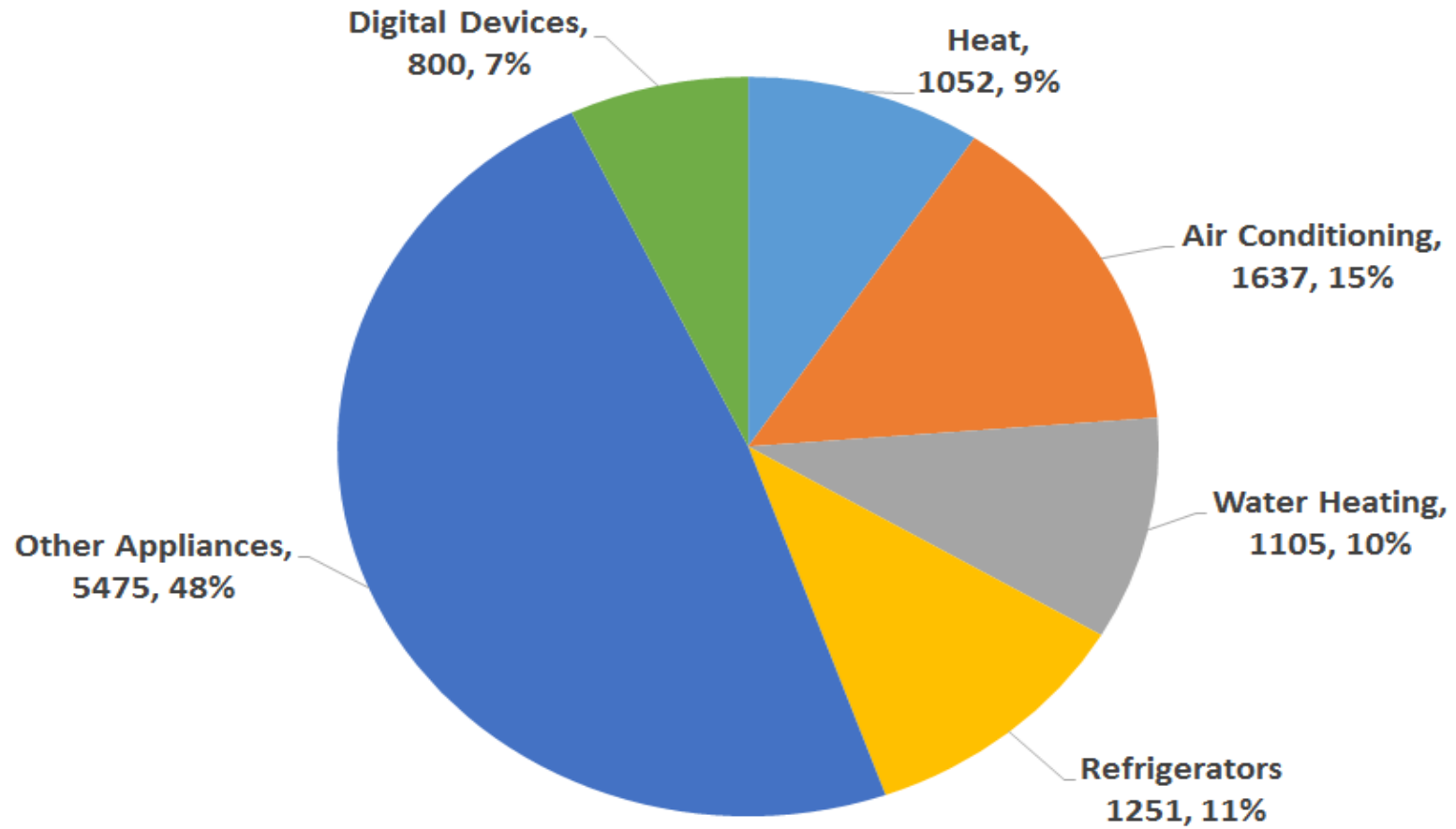
Penetration and Use of Computers, Game Consoles and Network Connectivity Devices



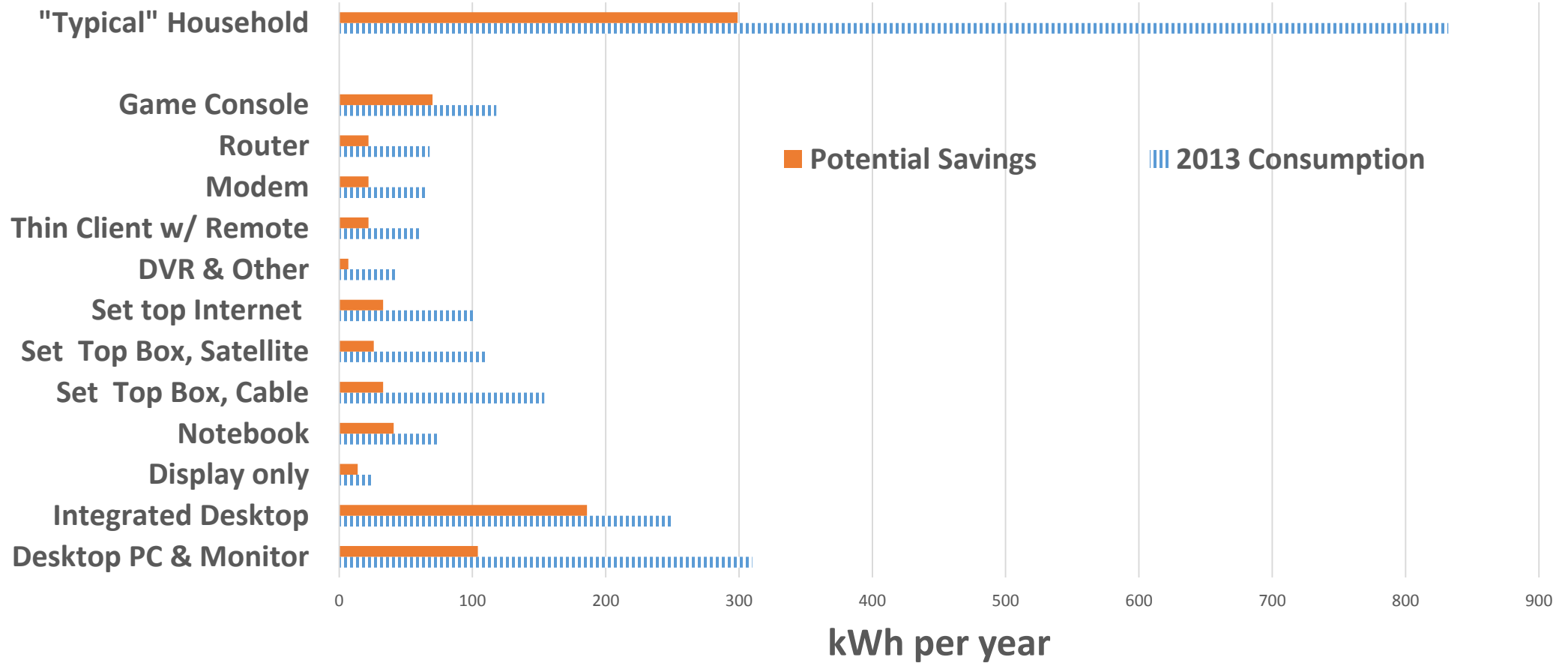
Households with Devices (Millions)

Average Annual Use Per Device (kWh)

NATIONAL WEIGHTED AVERAGE ELECTRICITY CONSUMPTION KWH/HOUSEHOLD



Current Electricity Consumption and Potential Reductions



Relative Electricity Consumption, Computers, Laptops, Tablets



KEY DESIGN FEATURES OF EFFECTIVE PERFORMANCE STANDARDS

- **Long-Term:** Setting an increasingly rigorous standard over a number of years that covers several redesign periods fosters and supports a long-term perspective. The long term view lowers the risk and allows producers to retool their plants and provides time to re-educate the consumer.
- **Product-Neutral:** Attribute-based standards accommodate consumer preferences and allow producers flexibility in meeting the overall standard.
- **Technology-neutral:** Taking a technology neutral approach to the long term standard unleashes competition around the standard that ensures that consumers get a wide range of choices at that lowest cost possible, given the level of the standard.
- **Responsive to industry needs:** Recognizing the need to keep the target levels in touch with reality, the goals should be progressive and moderately aggressive, set at a level that is clearly beneficial and achievable.
- **Responsive to consumer needs:** The approach to standards should be consumer-friendly and facilitate compliance. The attribute-based approach ensures that the standards do not require radical changes in the available products or the product features that will be available to consumers.
- **Procompetitive:** All of the above characteristics make the standards pro-competitive. Producers have strong incentives to compete around the standard to achieve them in the least cost manner, while targeting the market segments they prefer to serve.

Causes of Market Failure Addressed by Standards

SOCIETAL FAILURES

Externalities
Public Goods
Information

ENDEMIC FLAWS

Agency
Asymmetric
Information
Moral Hazard

TRANSACTION COSTS

Sunk Costs
Risk
Uncertainty
Imperfect Information

BEHAVIORAL FACTORS

Motivation
Calculation/
Discounting

STRUCTURAL PROBLEMS

Scale
Bundling
Cost Structure
Product Cycle
Availability

The Electricity Consumption of Household Digital Devices is a Particularly Difficult Problem for the Marketplace to Solve.

- The electricity consumption of these devices is not visible to consumers. The devices are purchased for their functionalities, which, given the dramatic increase in penetration and use, are highly desirable. The level of electricity consumption is not an attribute of the product to which consumers will pay much attention (a shrouded attribute problem).
- Even if consumers are paying attention to energy use, it would be difficult for them to determine how much energy the devices use and the impact of reducing consumption. The information is either not readily available or the transaction cost of obtaining it is high (information and transaction cost problems).
- The manufacturers of the products make the key decisions about energy consumption and the bundle of attributes that will be made available in the market, thereby constraining the range of energy consumption levels the consumer has to choose from (principal agent problems).
- The manufacturers tend to focus on the primary product attributes and the first cost of the device, ignoring the life cycle cost (i.e. the total of acquisition and operating costs) since they do not pay the electricity bills. The manufacturers' interests are separate and different from the consumers' interests (split incentives problem).
- Ultimately, the benefit of reducing energy consumption has value beyond the benefit that each individual directly enjoys from reduced energy consumption (a public goods problem).

THE PROJECTED COSTS OF REGULATION EXCEED THE ACTUAL COSTS: RATIO OF ESTIMATED COST TO ACTUAL COST BY SOURCE

