



Senate Select Committee on Climate
Change & AB 32 Implementation
*Advancing Cleantech Innovation in the San Fernando
Valley*

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California Energy Commission

October 30, 2014



California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency.

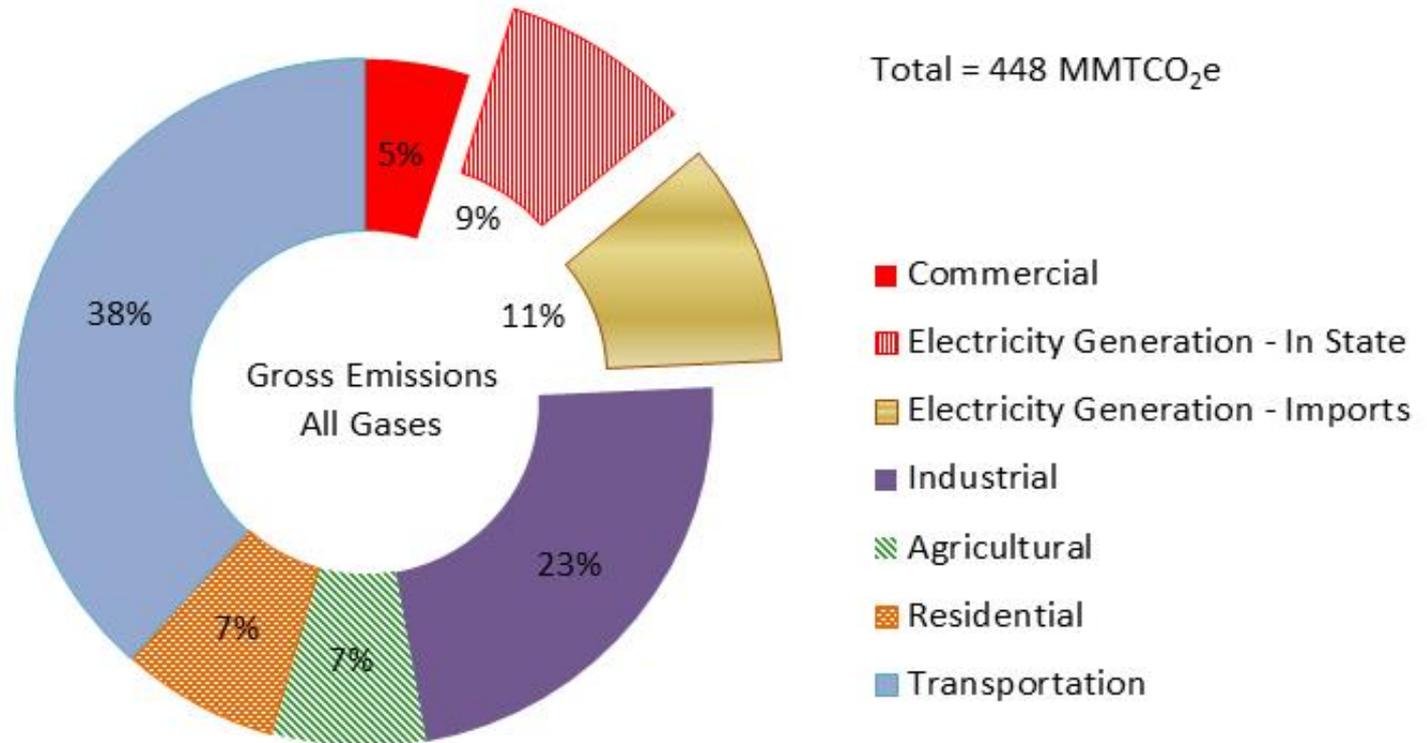
1. Forecasting future energy needs
2. Promoting energy efficiency and conservation by setting state's appliance and building EE standards
3. Supporting energy research through RD&D
4. Developing renewable energy resources
5. Advancing alternative and renewable transportation fuels and technologies
6. Certifying thermal power plants 50 MW and larger
7. Planning for and directing state response to energy emergencies.



Emissions Contribution by Sector

2011 GHG Emissions by Sector

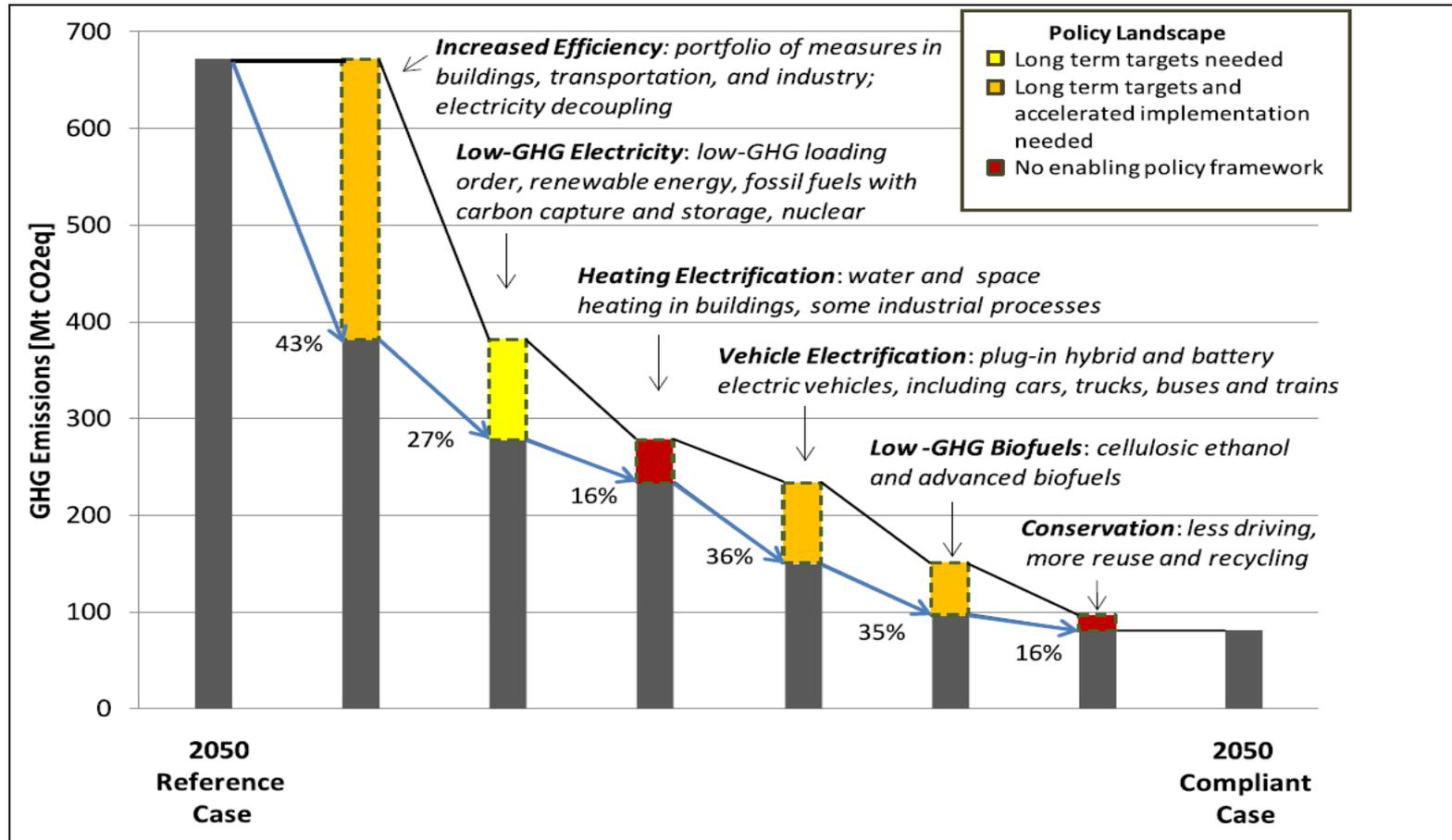
Million Metric Tonnes of CO₂ Equivalent (MMTCO₂e)



Source: Franco, Oliver, 2013
ARB data. 2013 IEPR



All GHG Scenarios have Energy Efficiency As Primary Resource



Source: Wei et al., 2013



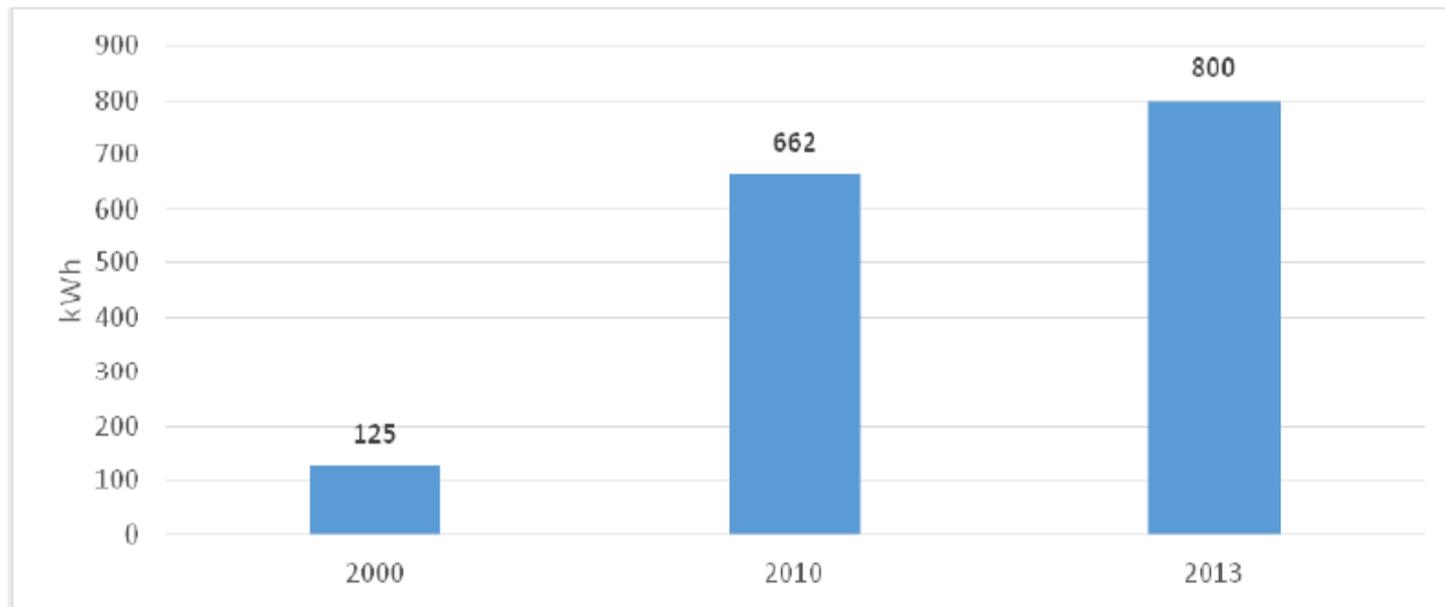
AB 758- California's Existing Buildings Energy Efficiency (EBEE) Action Plan

- AB 758 Action Plan is a 10-year plan focused on removing market barriers and increasing energy efficiency from existing residential, commercial and public buildings.
- State intends to partner with interested local governments to show coordinated leadership and demonstrate new policy approaches.



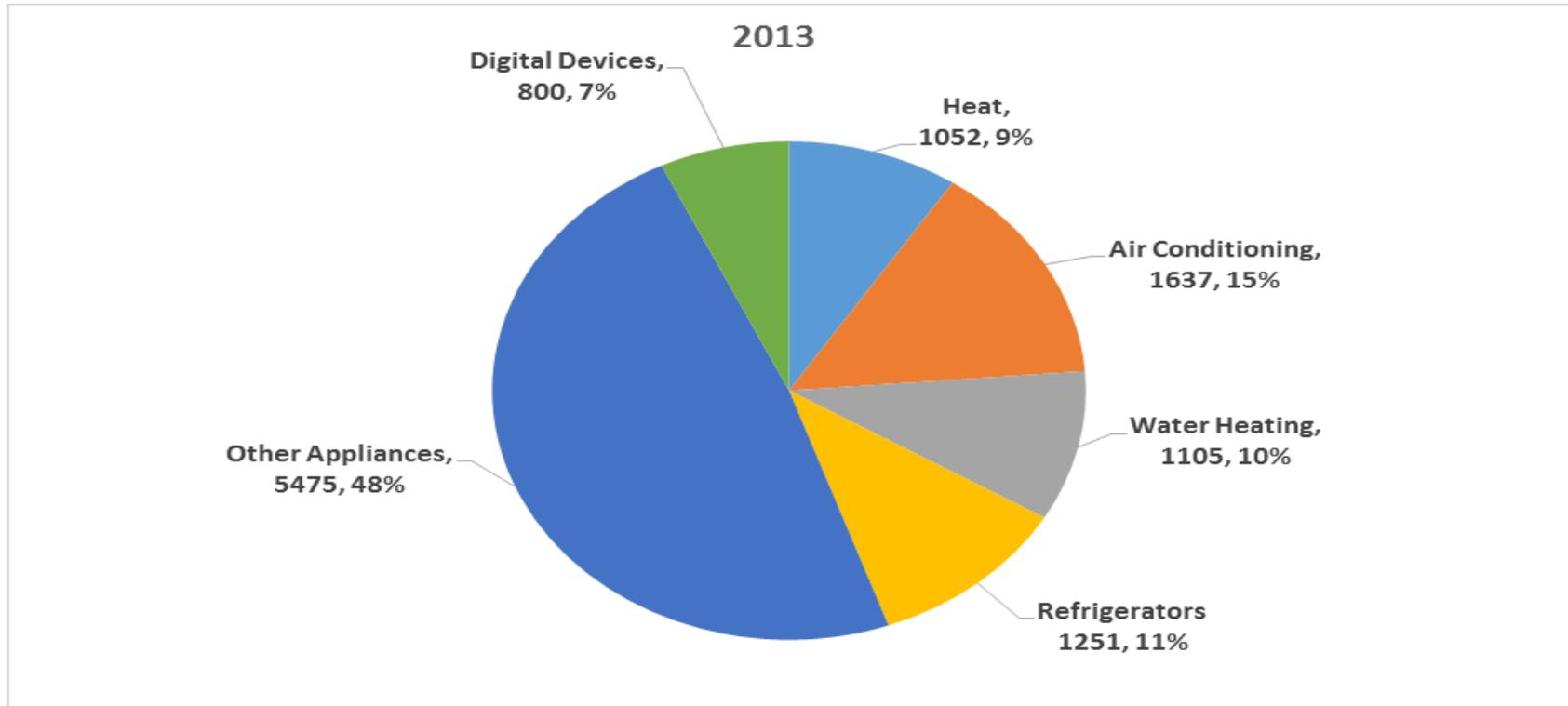
Increasing Impact of Digital Devices

FIGURE 1: THE INCREASING IMPACT OF DIGITAL DEVICES ON HOUSEHOLD ELECTRICITY USE
Weighted Average Annual Consumption of Households Digital Devices





National Weighted Average Electricity Consumption kWh/Household



Sources and notes: Consumer Federation of America, *Electricity Consumption and Energy Savings Potential of Consumer Digital Devices*, February 2014. The estimates of consumption by Household Digital Devices are subtracted from the "other appliance category." The 2009 RECS percentages of electricity consumption are adjusted to 2013, based on total electricity consumption in 2012. Residential Energy Consumption Survey (2001, 2009).



Leading Energy Efficiency Standards: Appliances

- Requirements to increase energy efficiency standards have affected automobiles, appliances, buildings, and electric motors.
- These standards save consumers money, reduce energy use and GHG emissions, create clean jobs in California, and spur innovation.



Electric Program Innovative Charge (EPIC)

- At the Energy Commission we have robust Research & Development programs. The Energy Commission administers several R&D programs that drive innovation and advance science and technology in the fields of energy efficiency, renewable energy and advanced clean generation, energy-related environmental protection, energy transmission and distribution and transportation.
- The Electric Program Investment Charge (EPIC) program invests in improvements to the state's electricity systems.
- EPIC funds innovative technologies, tools and approaches that provide benefits to electric ratepayers in PG&E, SCE and SDG&E service territories through greater reliability, lower costs, increased safety, and enhanced environmental sustainability.
- Upcoming Funding Opportunities for EPIC:
http://www.energy.ca.gov/research/upcoming_funding.html



EPIC Program Design

Energy Innovation Pipeline





2012-2014 EPIC Budget

Funding Element	Total (million \$)*	Solicitations Released to Date ** (million \$)
Applied Research and Development	\$158.7	\$60.0
Technology Demonstration and Deployment	\$129.8	\$80.8
Market Facilitation***	\$43.3	\$1.0
Total	\$331.8	\$141.8

* Approved amount from the CEC 2012-2014 EPIC Investment Plan.

** Several additional solicitations will be released in the near future.

*** Market Facilitation is a new program area and staff is getting additional stakeholder input through workshops and request comments prior to solicitation release.



Alternative and Renewable Fuel and Vehicle Technology (ARFVT)

- \$100 million public investment to promote development and deployment of advanced technology, low carbon fuels and vehicles that will help the state achieve its GHG reduction goals.
- 2014-2015 Investment Plan for ARFVT Program
<http://www.energy.ca.gov/2013publications/CEC-600-2013-003/CEC-600-2013-003-CMF.pdf>
- Upcoming Workshops:
 - November 7, 2014- Joint Workshop on Electric Vehicle Charging Station Financing Program
 - November 14, 2014- Pre-Application Workshop for PON-14-602 Biofuels Early & Pre-Commercial Technology Development



Policy Needs and Considerations

- Unlock energy efficiency potential in existing buildings.
 - Market focused solutions needed in order to reach scale
 - Research needed to better predict behavior and pricing impacts
 - Consumptions and building analytics to support consumer decisions
- Continue leading energy efficiency: Appliance and Building
 - Appliance and Building standards are effective and critically important to reducing energy consumption, saving Californian's money and reducing GHG emissions. We need more innovation in this sector and support from Government and industry leaders to push the envelope.
- Other efforts-
 - Prop 39, energy efficiency and clean energy for schools is in its second year. Schools are investing in and doing their part to reduce GHG emissions. How can the market provide support and services to schools?



Discussion

Thank You