

ET Summit 2019

Presented by



Trends in Energy Efficiency and Energy Management

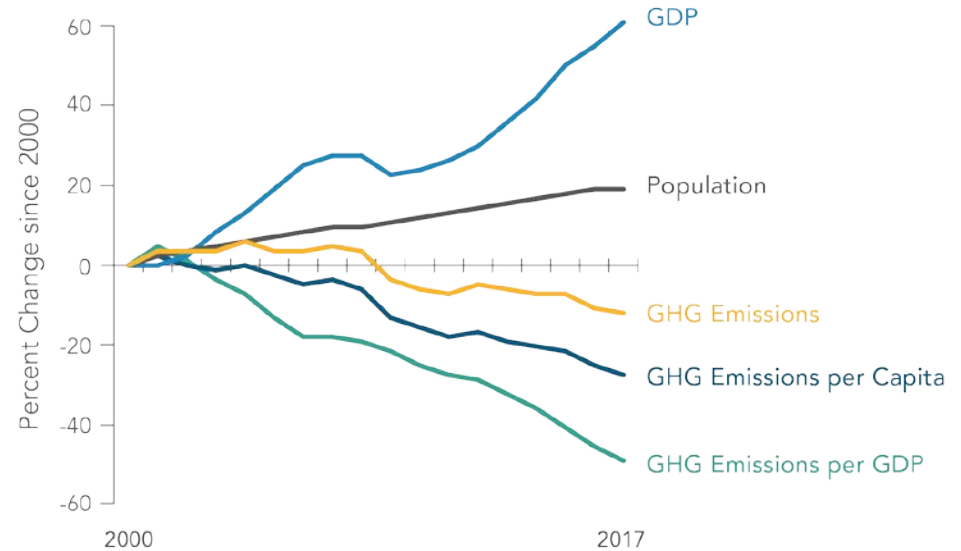
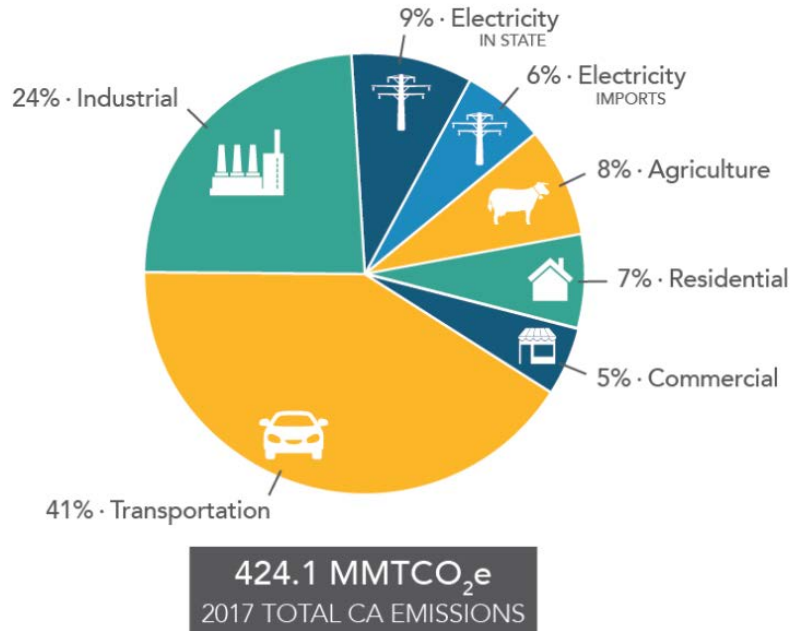
Janea A. Scott

Vice Chair

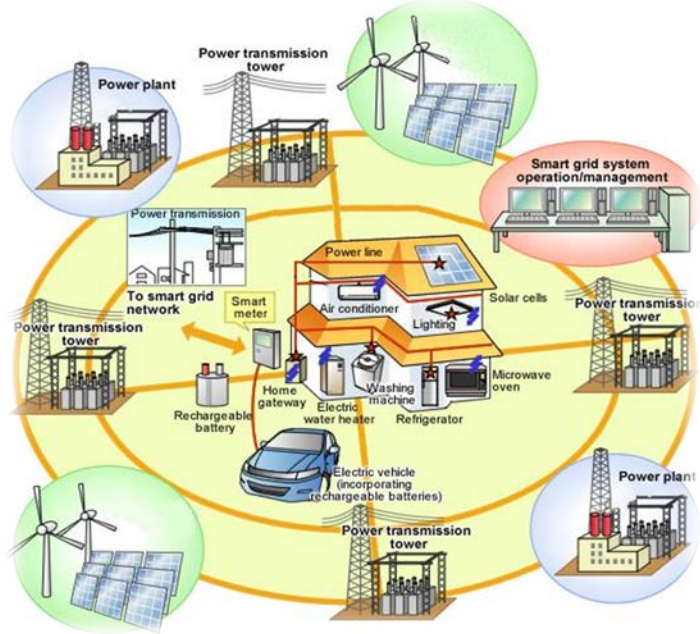
California Energy Commission



California is Reducing GHG Emissions while Growing the Economy



Policy Drives Innovation



Increase access to clean energy in disadvantaged communities

2020

- GHG reduction to 1990 level
- 1.3 GW of Storage
- Title 24 solar on all new homes

2025

- 1.5M ZEVs

2030

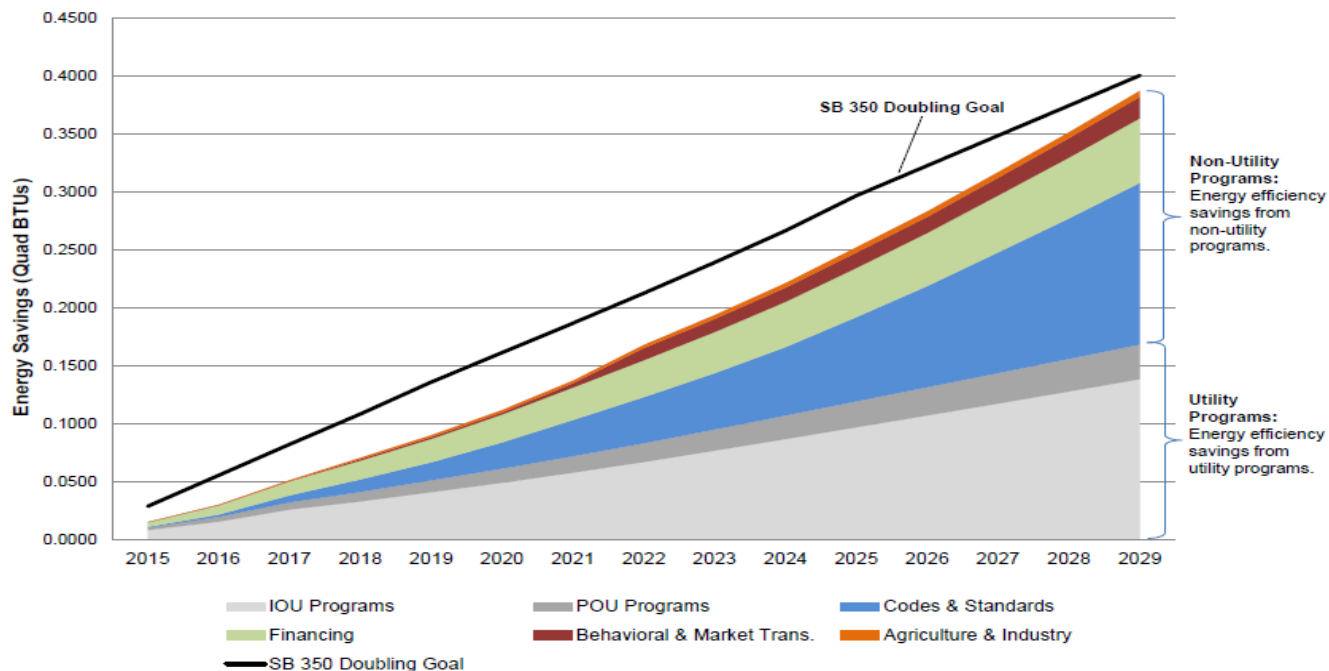
- Reduce GHG to 40% below 1990 level
- Increase RPS to 60%
- Double energy efficiency savings by 50%
- 5 million ZEVs

2045

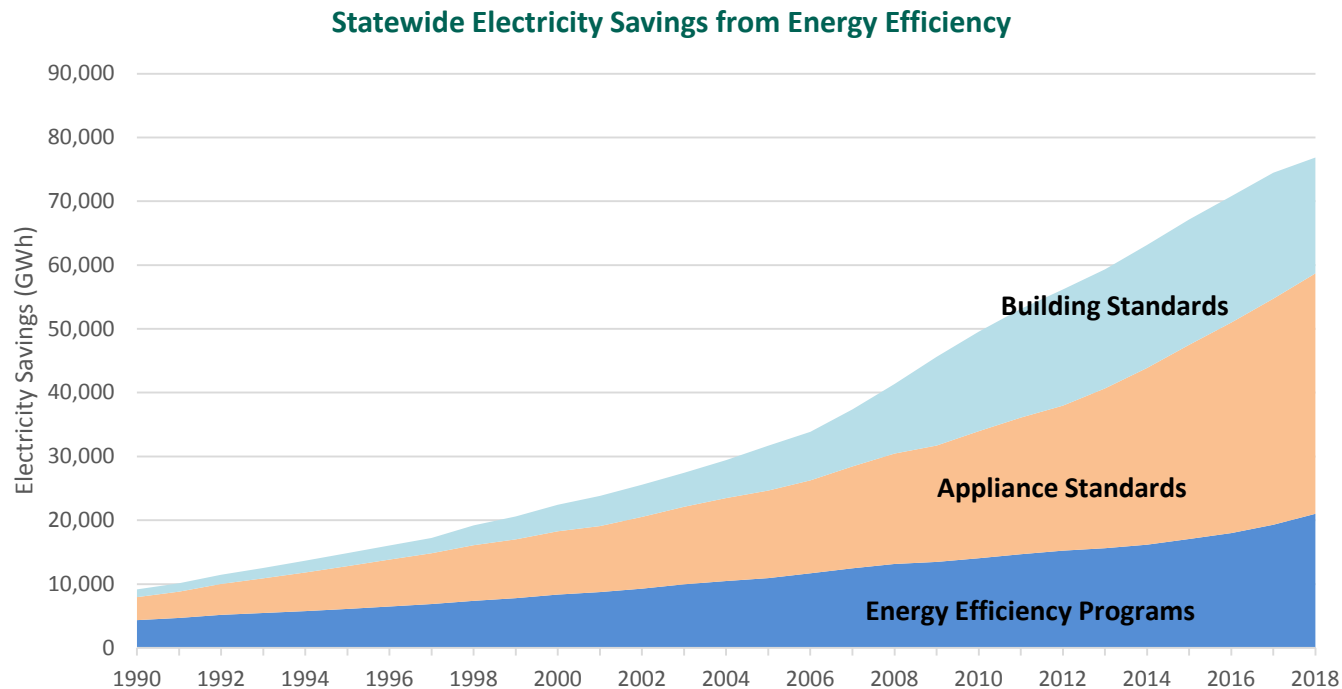
- Renewable and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers

Doubling Down on Energy Efficiency

Combined Electricity and Natural Gas Savings Projections (Quad BTUs)



Reducing Electricity Consumption Through Efficiency



Fostering Innovation Across the Energy Sector



Core mission: strategically invest funds to catalyze change and accelerate achievement of policy goals to benefit ratepayers

- **Electric Program Investment Charge (EPIC)**
~\$130 million annually
- **Natural Gas Research, Development and Demonstration Program**
\$24 million annually
- **Food Production Investment Program**
\$124 million biennially
- **Low Carbon Fuels R&D Program**
\$18 million, one-time general fund expenditure authority

Catalyzing Clean Energy Innovation Through R&D



Efficiency & Flexible Load



Increasing Renewables



**Storage & Grid
Integration**



**Decarbonizing
Transportation**



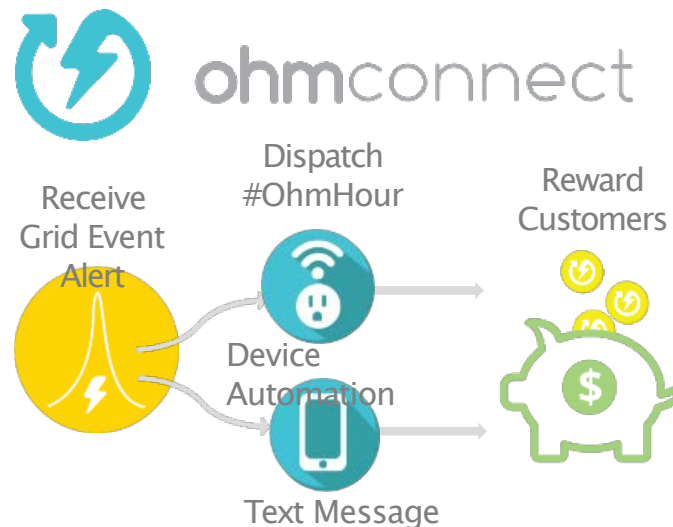
**Climate Research &
Adaptation**

Engaging Customers to Reduce Peak Power Demand

OhmConnect

- Social media platform to encourage real-time responses to demand response signals from residential customers
- Program bids 1-hour load reductions from the entire user base into CAISO markets
- 10,000+ Devices Connected
- 15% Disadvantaged Community users
- 27.8 MWh cumulative savings as of March 2019
- \$668k paid across 34k Users

CEC Awarded: \$4M

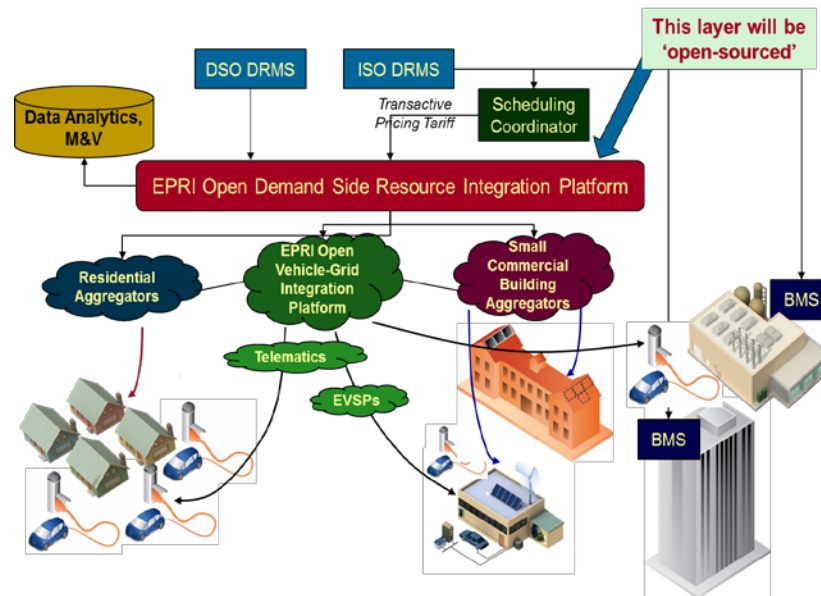


Customer-centric Demand Management using Load Aggregation and Data Analytics

Electric Power Research

- Utilize customer devices as utility resources; residential, small commercial, medium commercial segments
- Develop Open Demand Side Resource Integration Platform Study customer engagement enablers
- Project is nearing completion—data collection is ongoing at demo sites

CEC Awarded: \$4M



Increasing Energy Reliability, Resiliency, and Security with Microgrids

Blue Lake Rancheria Microgrid CEC Award: \$5 M

- Integration of solar electric with battery storage
- Seamlessly “islanded” during a wildfire-caused power outage
- Reduced power costs **\$160k+** per year – a **25%+** reduction – and **158** metric tons of



Fremont Fire Station Microgrid CEC Award: \$1.45 M

- Microgrids achieved **4 – 12 hours** of islanding for three fire stations
- 1st solar microgrid with battery back-up for fire stations
- **\$250,000** savings over the 10-year PPA term
- Decreases GHGs by **142,000 lb** annually

The Mercury News

“It gives us a sense of security and resiliency. We can operate without having to worry about the grid going out,” said Rachel DiFranco, Fremont’s Sustainability Manager. “We are able to ‘island’ ourselves.”

Catalyzing the Cleantech Community

EmpowerInnovation.net



EMPOWER
INNOVATION



- Empower Innovation strives to accelerate your cleantech journey with easy access to funding opportunities from the Energy Commission and other funding providers, curated resources and events, and connections to people and organizations.

FIND A PARTNER

Announce your interest in this funding opportunity and message other interested parties to find potential partners.

RESOURCES & TOOLS

Browse the collection of resources for cleantech innovators including *Resource Libraries, Funding Sources, Tools, and Databases.*

Thank You

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