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Advancing Our Clean Economy

#### IEPR Commissioner Workshop on Renewable Integration and Electric System Flexibility

June 20, 2018



## The California Efficiency + Demand Management Council

- → With over 80 member companies, the Council is the voice of California's efficiency & demand management sectors
- → Formed in 2009 as the California Energy Efficiency Industry Council, we formally changed our name in 2017 to reflect our broad range of work on demand-side management issues
- Our mission is to support energy efficiency and demand management policies and programs for all Californians to create:
  - Sustainable jobs
  - Long-term economic vitality
  - Stable and reasonably priced energy systems, and
  - Environmental improvement

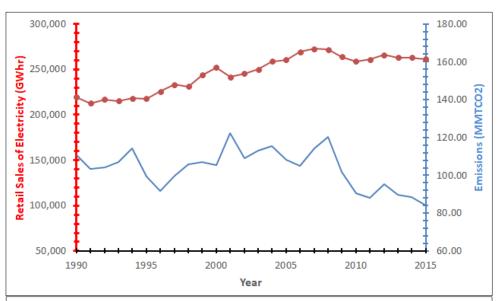
"For more than thirty years now, California has urgently needed a broadly-based and effectively led coalition to represent the nation's most productive energy efficiency delivery system, and the California Efficiency + Demand Management Council feels like an answered prayer."

Ralph Cavanagh, Energy Program Co-Director Natural Resources Defense Council

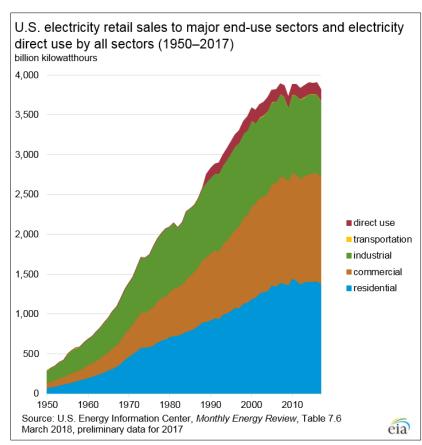




### Efficiency & Demand Management: A California Success Story



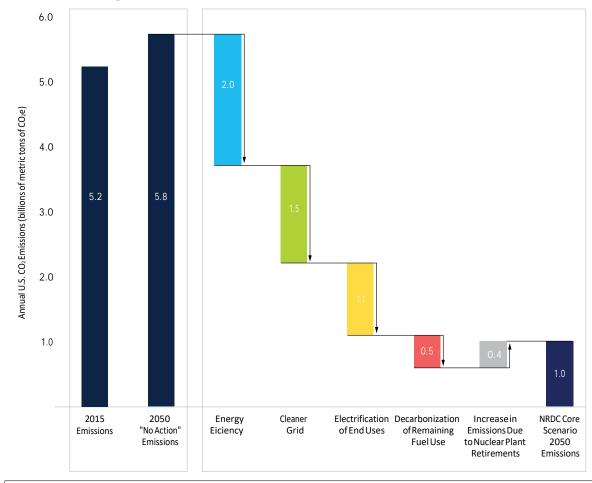
CEC, "Tracking Progress; Greenhouse Gas Emissions Reductions," Fig. 12: "Greenhouse Gas Emissions From The Electricity Sector Have Declined as Electricity Consumption Has Risen Over Time" (Dec. 2017)







### **Efficiency & Demand Management:**Reducing Greenhouse Gas Emissions



NRDC, "America's Clean Energy Frontier: the Pathway to a Safer Climate Future" (2017)



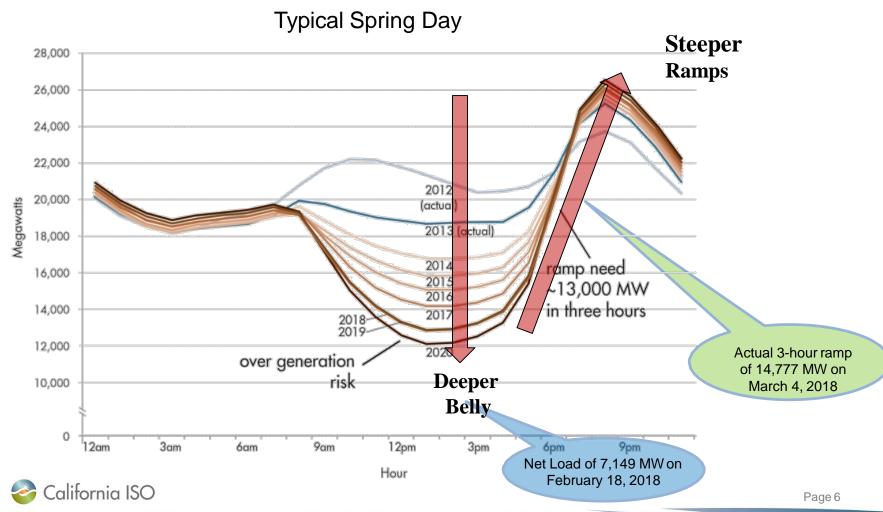


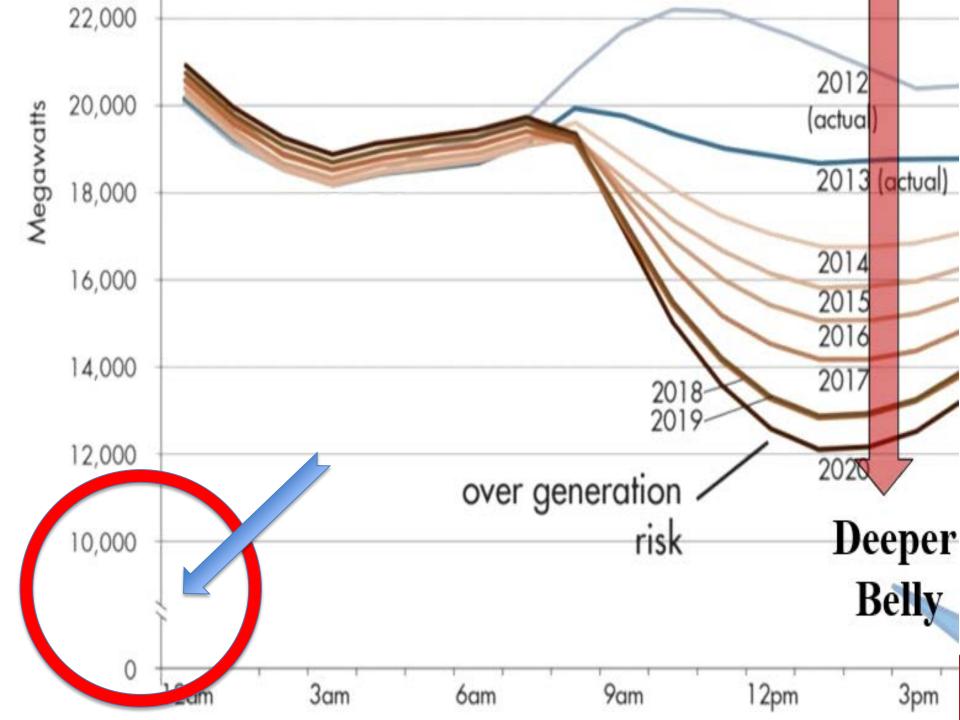
## Efficiency & Demand Management Provide to the Grid?

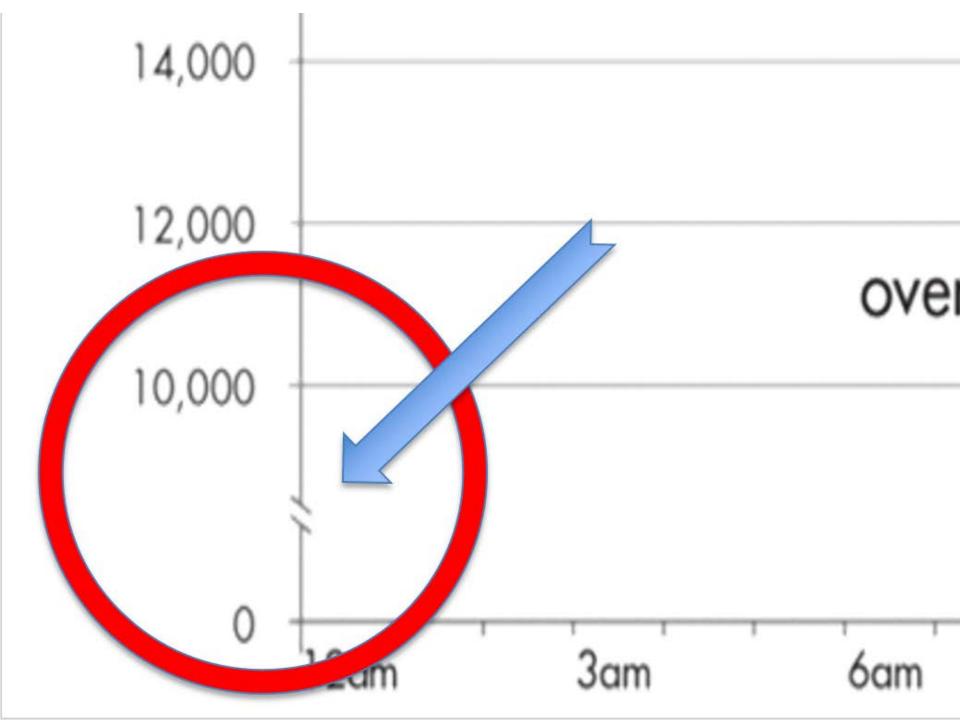
- → A better question:
  - What **can't** efficiency & demand management provide to the grid?
- → The technologies and services comprised within efficiency and demand management offer:
  - Energy
  - Capacity
  - Ancillary Services
  - Transmission & distribution system solutions



# Actual net-load and 3-hour ramps are about four years ahead of the ISO's original estimate primarily due to under forecasting roof-top solar PV installation









## The Duck Curve: Efficiency & Demand Management Can Help

- → The Duck Curve, and the dynamics it reflects, deserve serious attention
- → We must consider the whole stack of supply- and demand- side resources to "teach the duck to fly"
- "Two ways to ensure reliable grid management include applying EE and DR resources as behavior-modifying mechanisms to change the net load shape and procurement of resources in response to the grid needs"
  - California ISO Demand Response and Energy Efficiency Roadmap: Maximizing Preferred Resources
- → Efficiency & demand management are essential components of the holistic, clean energy approach California needs for a reliable, least-cost and least-carbon energy system





#### Efficiency + Demand Management

#### = Clean Energy Solutions

#### Thank you.

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