



California's Newly Enacted 50 Percent RPS

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CALIFORNIA RPS BACKGROUND



California's Climate Change Goals

- Near term goal: Reduce GHG emissions to 1990 levels by 2020 (Assembly Bill 32, St. of 2006)
- Long term goal: Reduce GHG emissions to 80% below 1990 level by 2050 (2005 Gov. Exec. Order)
- In 2015, Governor announced 2030 goal of 40% below 1990 level by 2030
 - to get us on 2050 trajectory



CA Climate Change Goals, Cont.

To Help Reach Goals:

- Tied to mid term climate change goal, Governor set 2030 goals (January 2015 announcement):
 - Reduce petroleum use by 50%
 - Increase energy efficiency in existing buildings by 50%
 - Increase renewables to 50%



History of California's RPS

- Original RPS signed into law in 2002
 - Required CPUC-regulated retail sellers to procure 20% renewable energy by 2017
 - 2006 Legislation accelerated the RPS to 20% by 2010
 - Publicly owned utilities to set their own RPS goals recognizing the intent of the legislature to attain a target of 20% of California retail sales of electricity from renewable energy by 2010
- April 2011: Governor Brown signed SB X1-2, which set a new target of 33% renewables by 2020 for **all** utilities
- October 2015: Governor Brown signed SB 350, which increases RPS to 50% by 2030



Distributed Generation Goals

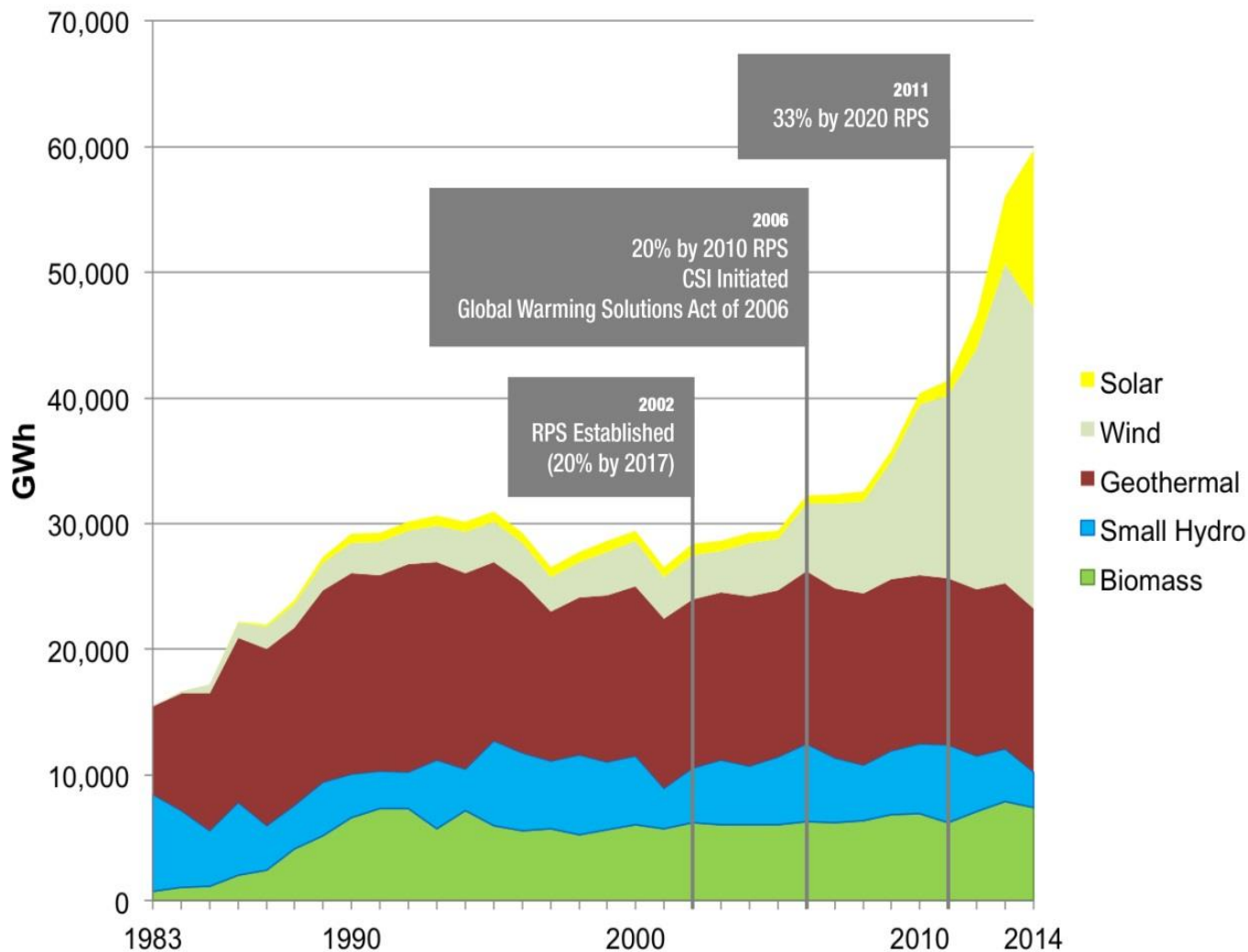
- CA Solar Initiative (CSI): 3,000 MW of new rooftop solar by end of 2016
- Governor's Goals for 2020: 8,000 MW large-scale renewables and 12,000 MW of small-scale renewables by 2020
- All new construction be Zero Net Energy
 - Residential by 2020
 - Commercial by 2030



CURRENT STATUS

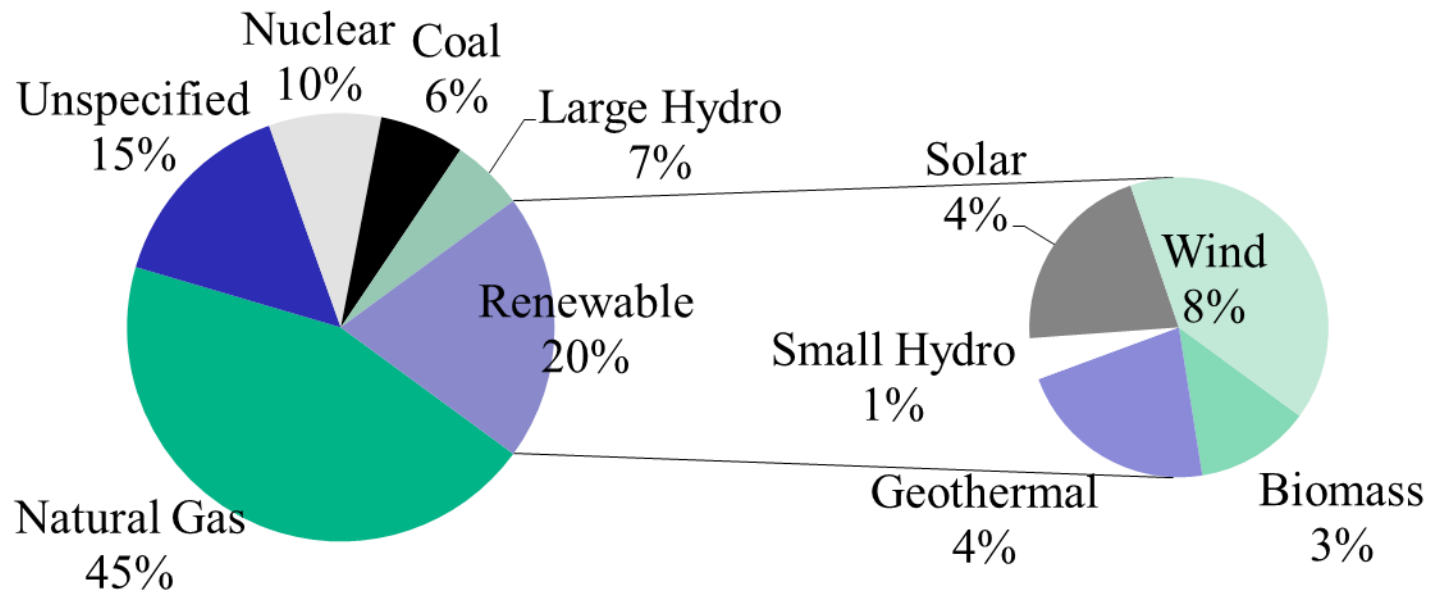


Renewable Generation 1983-2014





California's 2014 Electricity Mix





Estimated Utility RPS Progress

- For 2011-2013 compliance period:
 - Pacific Gas & Electric – 23.8%
 - Southern California Edison – 21.6%
 - San Diego Gas & Electric – 23.6%
 - Aggregate of 43 publicly-owned utilities – 20.64%



50 PERCENT AND BEYOND



Changes Made by SB 350

- Increased RPS targets
 - 40% by 2024
 - 45% by 2027
 - 50% by 2030 and thereafter
- New long-term contracting requirements
- Allow POUs to subtract green pricing programs
- Integrated Resource Plans



Potential Impacts of a 50% RPS

- Potential for overgeneration
- Steep ramps in demand curve
- Increased renewable curtailment
- Increased cost
- Integration issues



Possible Ways to Mitigate Impact

- More regional approach
- Energy storage
- Demand response
- Changes in rate structure



Other Changes that may Impact RPS

- Easier to reach RPS targets, integrate renewables:
 - Distributed energy resources
 - Energy Efficiency
- Harder to meet targets:
 - Electric vehicles
 - Whole house electrification



Thank you!

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