



POLICY INSTITUTE FOR ENERGY, ENVIRONMENT AND THE ECONOMY
LEVERAGING UNIVERSITY EXPERTISE
TO INFORM BETTER POLICY

Renewable Fuels: Can the Portfolio Expand?

Thursday, June 12, 2014

Essential Elements Conference Series

Energizing the Valley and Generating Jobs: Energy Development & Transmission

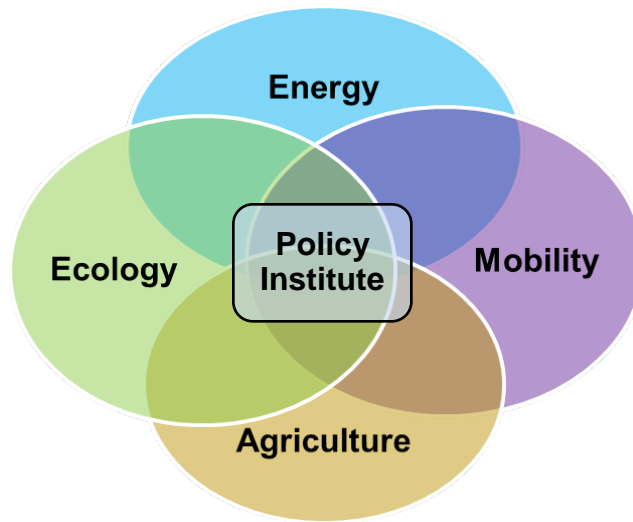
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**POLICY INSTITUTE FOR
ENERGY, ENVIRONMENT AND THE ECONOMY**

POLICY INSTITUTE MISSION

Mission:

The Policy Institute leverages world-class university expertise and engages directly with decision-makers to deliver credible, relevant and timely information and analysis to inform better energy and environmental policy



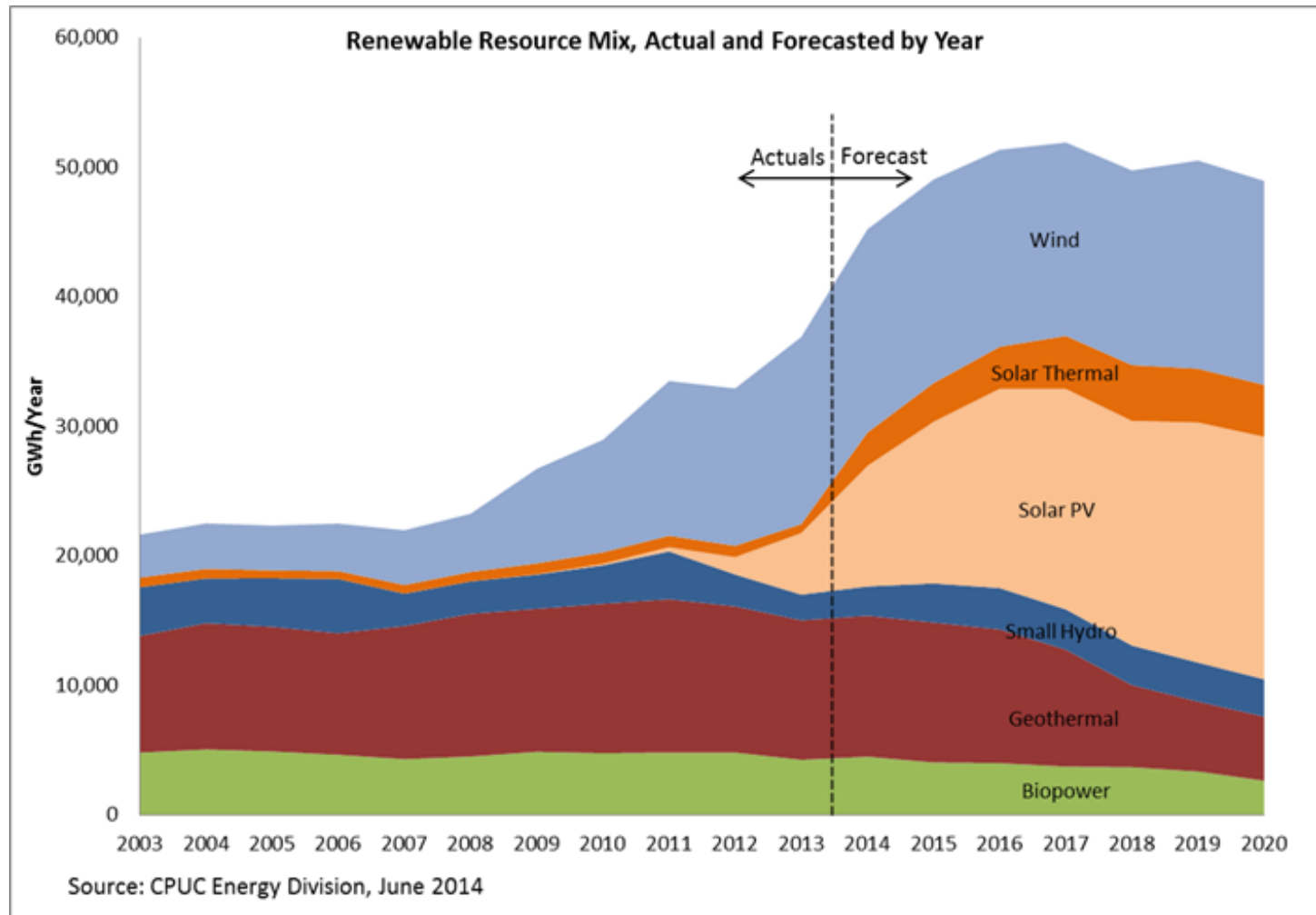
“UC Davis, a foremost public research university, is committed to advancing the human condition by improving the quality of life throughout California, across the nation and around the world...
...our pursuit of knowledge and our engagement with partners will serve the state and nation, and address the emerging challenges of an interdependent, global society.

UC Davis Mission Statement, UC Davis General Catalog 2012-2014

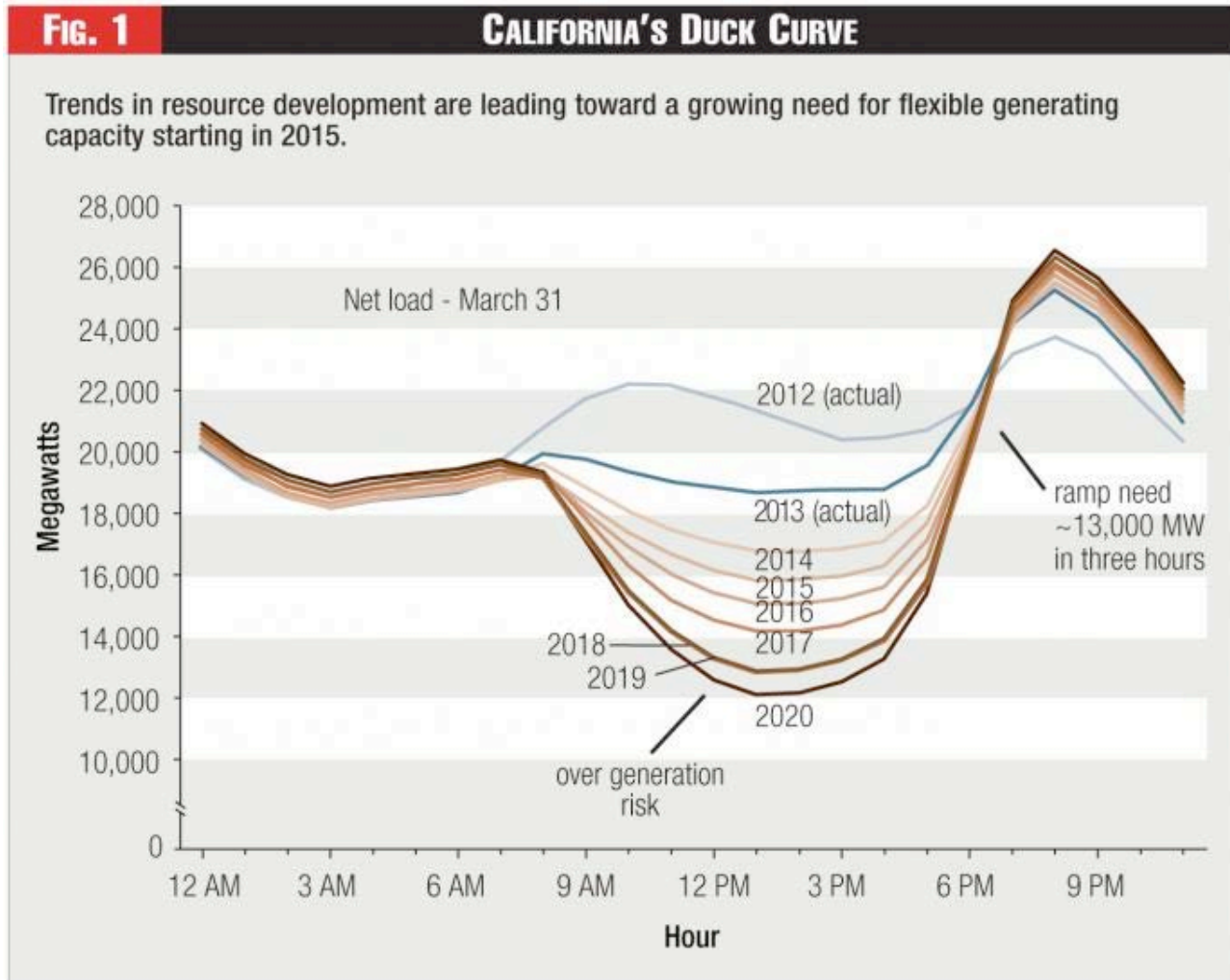
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CALIFORNIA'S RENEWABLE ENERGY MIX



THE DREADED DUCK



CALIFORNIA'S RENEWABLE ENERGY BASE

- With a high penetration of variable renewable energy comes online peaking/ramping sources will need to be increased to “firm” the grid. Ramping/peaking sources include:
 - Natural Gas
 - Biofuels
 - Geothermal
- Considerations for decision makers:
 - Existing mandates (Global Warming Solutions Act, Renewable Portfolio Standard, least cost/best fit etc.)
 - Water usage/MW produced
 - Footprint
 - Carbon & other GHG emissions
 - Fuel cost
 - Economic benefits
 - Availability
 - Ramp time
 - Transmission constraints
 - Environmental & cultural impacts



THANK YOU

Elise Brown
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