

Pasadena Water & Power

Strategies to Comply With

RPS and GHG Reduction Mandates

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Renewable Portfolio Standard

➤ **Policy Drivers**

- Climate change initiatives
- Reduced foreign/fossil fuel dependence

➤ **Companion Legislations / Regulations**

- Renewable Portfolio Standard (CA – SB 107)
- Greenhouse gas reduction (CA – AB 32)
- Energy efficiency (CA – AB 2021)

Major Challenges

- Regulatory uncertainty:
 - CA ↔ Other States ↔ Federal
 - RPS ↔ AB 32 Compliance Obligation
- Generation assets span across states
- Availability & connectivity of renewable resources
- Most POU's fully resourced (e.g. Pasadena Water & Power)
- Operational issues – Reliability, Scheduling, Resource Adequacy
- Managing cost impact on customer

Compliance Puzzle

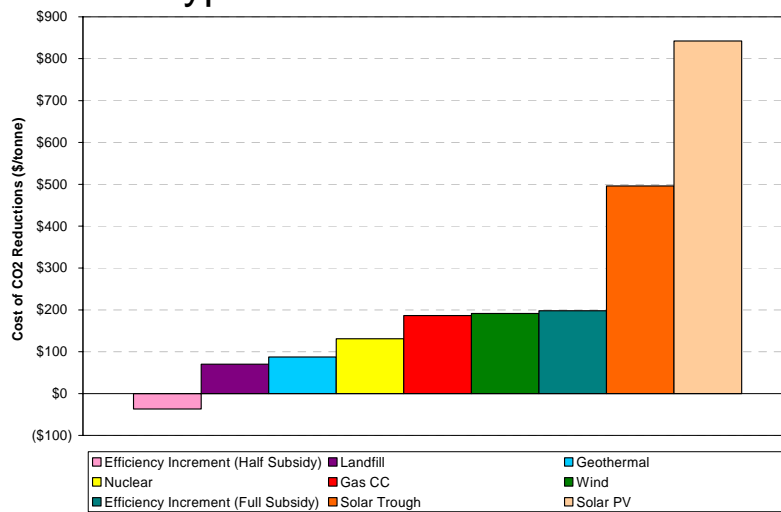


- Inter-relationship between
 - RPS: Bundled (energy + RECs), Re-bundled non-green + RECs, Null Energy, RECs;
 - Energy Efficiency; and
 - GHG emission compliance
- State vs. Federal
 - Point of regulation,
 - GHG allowance tradability
 - Federal preemption; more stringent State or additional regulations

Pasadena Water & Power Integrated Resource Plan (IRP)

- Comprehensive approach
- Developed community's objectives
- Extensive public outreach
- Transparent process
- Goals exceed known or expected regulations
- Long term vision / definitive short term actions
- Review 2/3 years; Update 5 years

Cost of CO2 Reduction Hypothetical 5 MW Addition

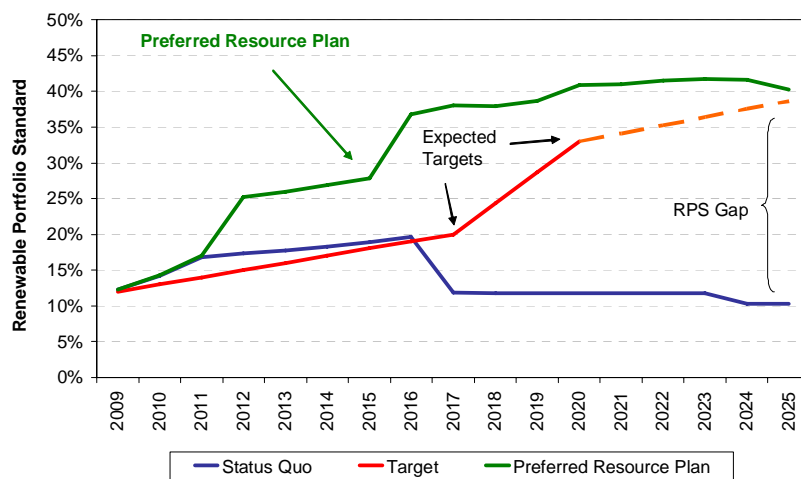


Key Elements of 2009 IRP

- **Renewable Portfolio Standard:** 15% by 2010, 33% by 2015, 40% by 2020
- **GHG Emissions Reductions:** 5% by 2010, 25% by 2015, 40% by 2020
- **Energy Efficiency and Load Management:** Reduce energy sales by 12.5% by 2016; reduce peak load by 10% by 2012; Reduce peak load by an additional 5 MW by 2012 through demand response
- **Solar Photovoltaic:** By 2020, add at least 15 MW of solar photovoltaic installations in Pasadena: 3 MW by 2010, 10 MW by 2015, 15 MW by 2020
- **Feed-In Tariff:** 10 MW of qualifying in-city renewables by 2020
- **Coal Power Displacement:** At least 35 MW by 2016
- **New Local Gas-Fired Generation:** Replace old steam unit with a 65 MW new gas-fired combined cycle plant by 2014

PWP's Renewable Portfolio Standard Goals

25% by 2012, 35% by 2016, 40% by 2020



PWP's Greenhouse Gas Reduction Goals

5% by 2010, 25% by 2015, 40% by 2020

