

# Discussion on the Impacts of California's RPS Program on the Northwest

PNUCC Board Meeting  
January 8, 2010



## Today's Objective

The Council's 6<sup>th</sup> Power Plan asks that the effects of California's 33% RPS on the Northwest Power system and regional energy prices be evaluated

PNUCC's System Planning Committee will aid in this assessment

- **At the Committee's December 11 meeting, members discussed**
- **Recommended making presentation to PNUCC Board for general policy discussion and guidance**



## Background



- 2003
  - **California adopted Energy Action Plan**
    - ❖ Emphasis on reducing per capita electrical use
    - ❖ Meet future energy needs with renewables
  
- 2006
  - **Renewable Portfolio Standard (RPS) Program adopted**
    - ❖ Required investor-owned utilities to procure additional 1% of eligible resources each year to serve retail loads to **reach 20% by 2010**
    - ❖ Penalty of \$50 per MWh up to \$25 million per year instituted for noncompliance
  
- 2009
  - **Governor issued Executive Order**
    - ❖ **Increased RPS to 33% by 2020**
    - ❖ Mandate extended to public and municipal utilities



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## Progress Toward 2010 Target

- In 2008, 13% of IOU's load was served by RPS-eligible resources. California's eligible resources includes:

PV & Solar Thermal	Wind	Geothermal
Small Hydro (< 30 MW)	Biomass	Landfill Gas
Ocean Wave, Tidal	Fuel Cells	Digester gas

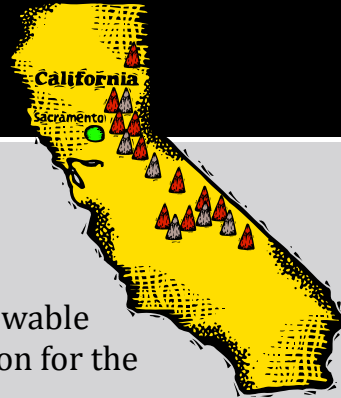
- To reach their 20% RPS targets for 2010, large amounts of Pacific Northwest wind being used



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## Impacts

- Raising California's RPS to 33% is expected to:
  - ❖ Boost demand for qualifying renewable resources and increase competition for the best sites
  - ❖ Impact energy and REC markets
  - ❖ Create grid operation and integration issues
  - ❖ Require additional transmission and upgrades



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## Demand for Renewables

- California Public Utility Commission (CPUC) estimates qualifying renewables will need to increase from ~3000 aMW to ~8500 aMW by 2020\*
  - ❖ In 2008, 50% of the wind capacity installed in the PNW was contracted to California utilities
  - ❖ Additional 1200 MW wind currently planned or under construction in BPA's Balancing Authority
- Likely best renewable sites will be used first

\*Source: CPUC's "33% RPS Implementation Analysis Preliminary Results," June 2009



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## REC Transactions

- REC transactions under California's rules can be:
  - ❖ **Fully Bundled:** Energy and RECs delivered together
  - ❖ **Partially Bundled:** RECs delivered as produced, but energy sent later, when transmission is available, within same year
- All out-of-state renewable contracts must be reviewed/approved by the CPUC
  - ❖ Proposed limits on out-of -state RECs to 5% with \$50/MWh cap in March 2009 rulemaking
  - ❖ Rules never finalized; Executive Order may change this notion
- Deliverability rules also under discussion
- If fully unbundled transactions are allowed (RECs stripped from energy), energy and REC prices will be impacted



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## Energy Markets



Installing new renewables projects and changing deliverability rules will likely strand energy in the Northwest. Impacts include:

- **Low or negative pricing**
  - ❖ Mid-C Day Ahead Firm Index Off Peak settled at or below \$0/MWh:
    - 17 days (May to June 2008)
    - 3 days (June 2009)
  - ❖ Mid-C Real-Time Energy Index settled at or below \$0/MWh:
    - 25 hours (May to June 2008)
    - 16 hours (May to June 2009)
- **Higher prices due to load and generation forecasting error**
- **Higher prices as result of need for backup generation**



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## Integration

- BPA estimates 3000 MW installed wind by end of 2010 and 4300 MW by 2011 - Federal Base Hydro System (FBS) challenged with current level of 2500 MW
- New tools and other collaborative initiatives underway to reduce balancing reserves needed to integrate wind
- October 2009 presentation by Cal-ISO\* stated

*"It is difficult to simultaneously accommodate qualifying facilities (QF), must-run hydro, production from nuclear units, and energy from renewable resources along with the need for ramping and reserves resources. To maintain reliability criteria California would have to become a net exporter of power to keep sufficient generation on-line."*

- Future BPA rate cases expected to address ability and cost to provide reserves from the FBS

Source: California ISO 2020 Renewable Conceptual Plan, 10/26/09



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## Transmission

- California recognizes they need sufficient transmission to reach a 33% RPS
  - ❖ Statewide collaborative transmission initiative\* underway to identify and facilitate transmission development to access renewable energy zones
  - ❖ CPUC's preliminary analysis indicates
    - Four major new transmission lines needed to meet 2010 target, estimated at ~\$4B
    - Seven additional lines needed to meet 2020 target, at ~\$12B
- BPA discussing an intertie "open season"

\*Source: Phase 2A Final Report for Renewable Energy Transmission Initiative, updated 9/22/09



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# Discussion

- Is there sufficient concern and interest in the topic?
- Next steps?

