

California REC Policy and the Pacific Northwest

Presentation to NWPPA
Annual Power Supply Workshop 6/24/10



CA REC/RES Policies

A Study in Complexity



- Legislative Directives
 - SB's 1078, 107, AB32, vetoed SB14, proposed SB722
- Executive Orders (S-14-08 & S-21-09)
- Multiple Rule Setters/Regulators
 - CPUC (CA Public Util. Comm.)
 - CEC (CA Energy Commission)
 - CARB (CA Air Resources Board)
- Multiple Issues
 - Deliverability/Treatment of out of state resources
 - Tradable RECs / Unbundled RECs
 - Timing
 - Resource eligibility
 - Interface with GHG regulations

Concerns Expressed as to How CA Policies Might Affect the NW

- Wind Build Out,(and commensurate integration demand, transmission demand)
- Competition for Renewables/RECs
- “REC-less” energy, Null Power dumping
 - Power price impacts
 - CO2 responsibilities associated with null Power

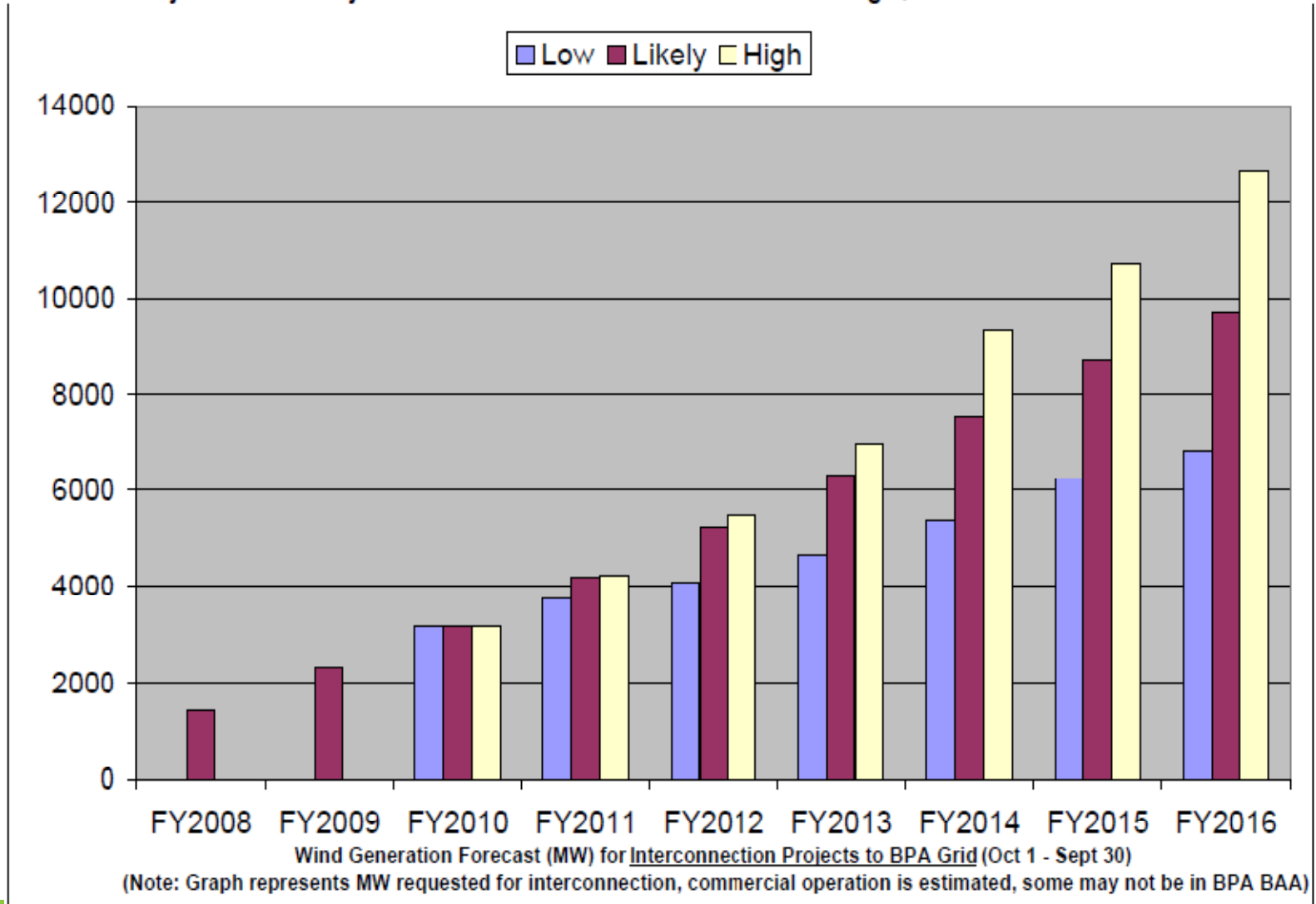
NW Wind Build Out to Meet CA RPS



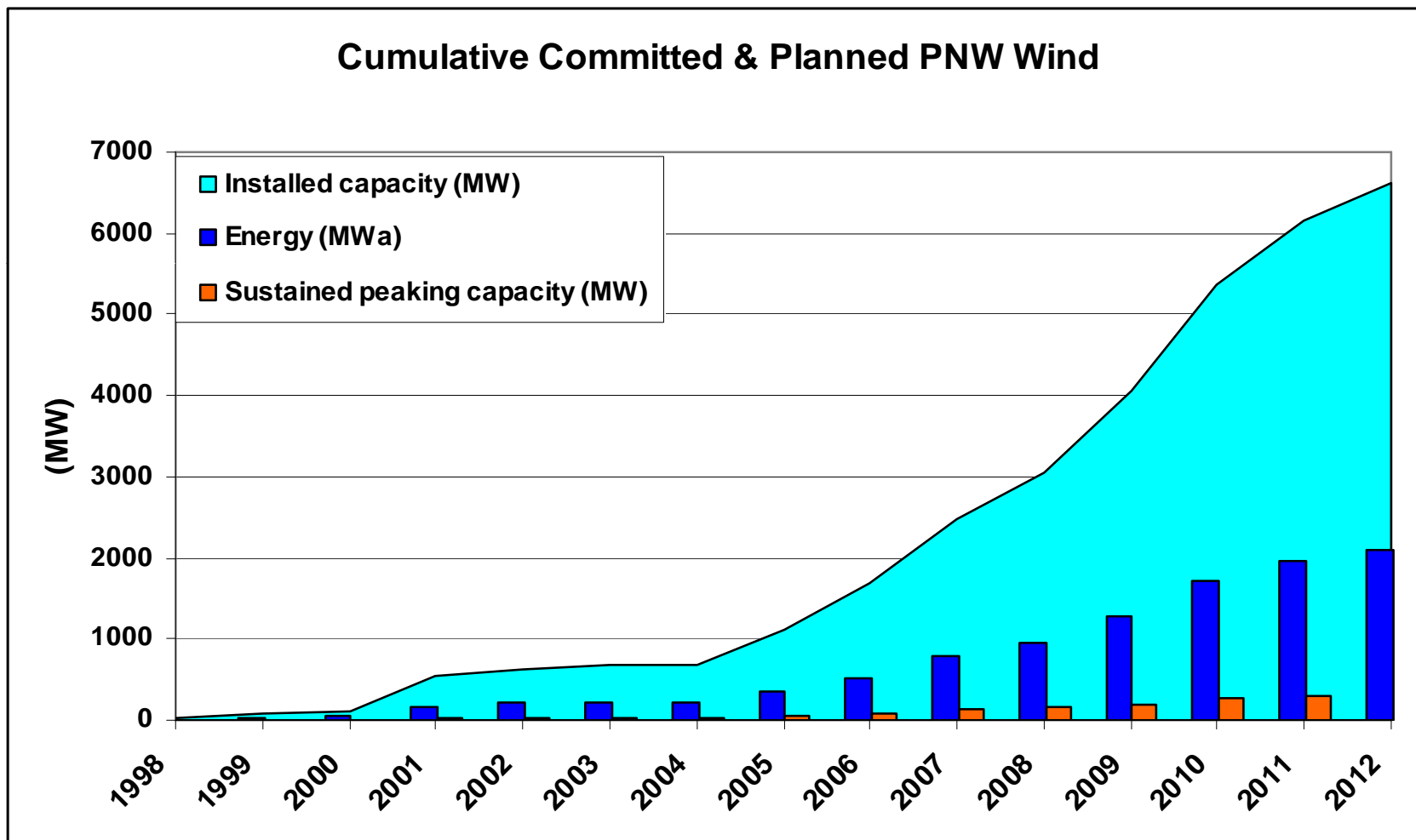
- There is a good deal of uncertainty with respect to NW wind build out, due to:
 - Regulatory Uncertainty (primarily related to treatment of out of state power in CA regs).
 - Integration cost uncertainty (BPA running out of low-cost integration resources).
 - Transmission build out uncertainty
- A number of parties have made stabs at estimating CA-bound renewables build out in the NW, including
 - CPUC/CARB – Both employed the E3 consulting firm to develop RPS calculator. Based on limiting assumptions found that only about 1,500 MWs of new wind (over 2008 levels) would be built in OR/WA to support CA's 33% RPS in 2020.

Projected Wind Build-Out in BPA BA

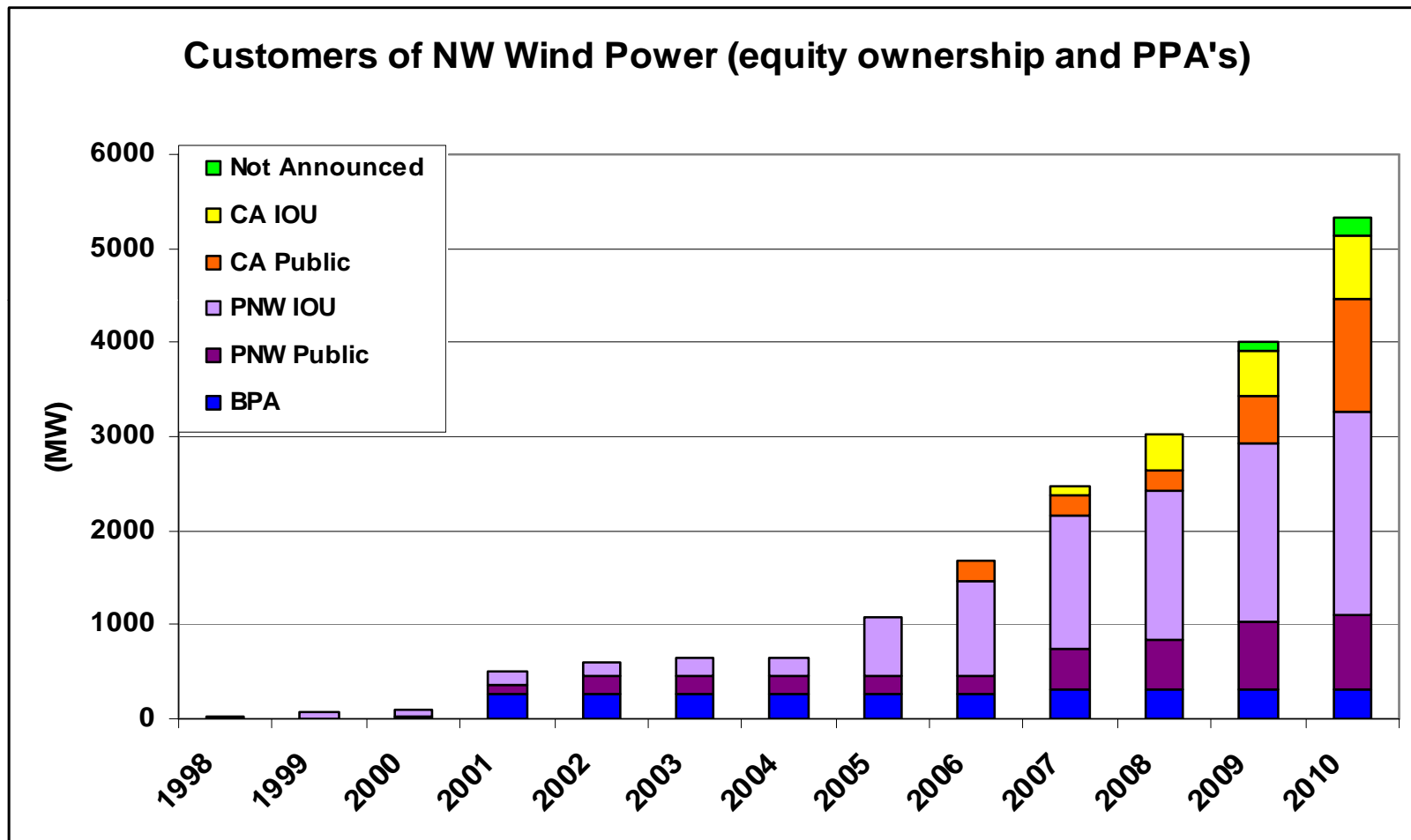
Projected Wind Projects Connected to BPA Grid based on Existing Queue and Recent Trends



Full NW Wind Build-out Forecast – NWPCC Projection



Full NW Wind Build-out - NWPCC Sink BA Projection



What is BPA Doing to Better Understand and Respond to Build-out Impacts?

Refining estimates of build out

- Cross referencing CPUC RPS data (approved and pending contracts) with our own transmission queue data.
- Working with E3 to revise RPS calculator so it can answer NW questions and respond to different sets of assumptions (trx. Availability, build out costs, etc.)
- Working with the NWPCC and WECC to coordinate build out assumptions and sensitivities for planning purposes.

Working with CA parties

to ensure that they understand impacts on NW, limits of NW transmission and integration resources (Recent PNUCC meeting with NW & CA parties)

Addressing:

- Operational Issues (Balancing Reserves and cost allocation)
- Transmission Expansion Requirements (Network Open Season)
- Need for Dynamic Voltage (VAr) Support
- WECC System concerns (wind generation models, wind farm data collection)

Competition for NW Renewables/RECs



- A California decision to allow for unlimited unbundled RECs (TRECs) could normalize the price of NW and CA REC's – increasing the price of REC's for NW parties.
 - This would be a good outcome for NW parties who are long on RECs, bad for those that are short.
 - BPA would prefer that REC's used for CA compliance be subject to deliverability requirements, so that developers take an interest in NW transmission build out needed to support the RPS related build out.
- NW Parties currently have enough resources to meet their RPS's, but may need to compete with CA in the future.
- BPA is working to collect data to better understand region-by-region deficits or excesses of renewables.

“REC-less” (a.k.a. “Null”) Power: NW Power Price Impacts



- REC-less /Null power is the energy left behind when the renewable aspects of that power have been sold off as a REC
- If transmission congestion is significant, this null power may be stuck in a renewable host region.
- There is some concern that stranded null power will chase market prices down to possibly even negative prices in the PNW (due to the PTC which pays renewables to generate)
 - In 2008, West Texas saw negative power prices (down to $-\$35/\text{MWh}$) in over 50% of the days.
 - Once again – this is good for those who are short on power, bad for those with surplus.

“REC-less” (a.k.a. “Null”) Power: NW Power Price Impacts – Cont.

- BPA is studying the effects of wind saturation on Mid-C Power Prices – preliminary results show downward pressure but not persistent negative pricing.
 - Models assume perfect competition, perfect transparency, etc.
 - We have seen significant downward price pressure, especially in the spring.
- Important to note that this downward price pressure associated with zero incremental cost resources is not necessarily associated with unbundled RECs, even with delivery requirements you can get the same results.
 - CA’s historic loose delivery requirements allowed for virtually unbundled RECs.
- Also important to note that there are natural limits to negative pricing, in the long run.
 - If developers cannot expect to receive significant remuneration for the null power, and there are limits on REC prices , new developments will not prove to be economic.
 - Persistent negative pricing should provide significant incentive for transmission build out.

“REC-less” (a.k.a. “Null”) Power: Latent GHG Emission Responsibilities?



- Some assume that when/if cap carbon restrictions are imposed, null power owners will end up with an unanticipated responsibility to pay for GHG emissions.
- It is very *unlikely* that this will play out – null power will not end up with CO2 emission burdens. The reasons are several fold.

1. **Cap and trade programs monitor and regulate emissions (i.e., require emission permits) at the fuels level or at the point of combustion.** As such, these programs do not track responsibility for emissions at the point of consumption, where RECs are tracked and null power responsibilities might be tracked.
2. **Because renewable generators do not combust any fossil fuels, they will not be required to purchase any emission permits and will have no CO2 costs under a cap and trade program.**
3. **Once a cap and trade program is in place, RPS policies will no longer cause GHG reductions.** When a cap is in place, it will govern emissions. Any emissions reductions “caused” by renewables would either have occurred without an RPS (incentivized by CO2 pricing), or will only serve to free up emission permits to be used by someone else in the regulated economy.

Questions/ Thoughts / Discussion