

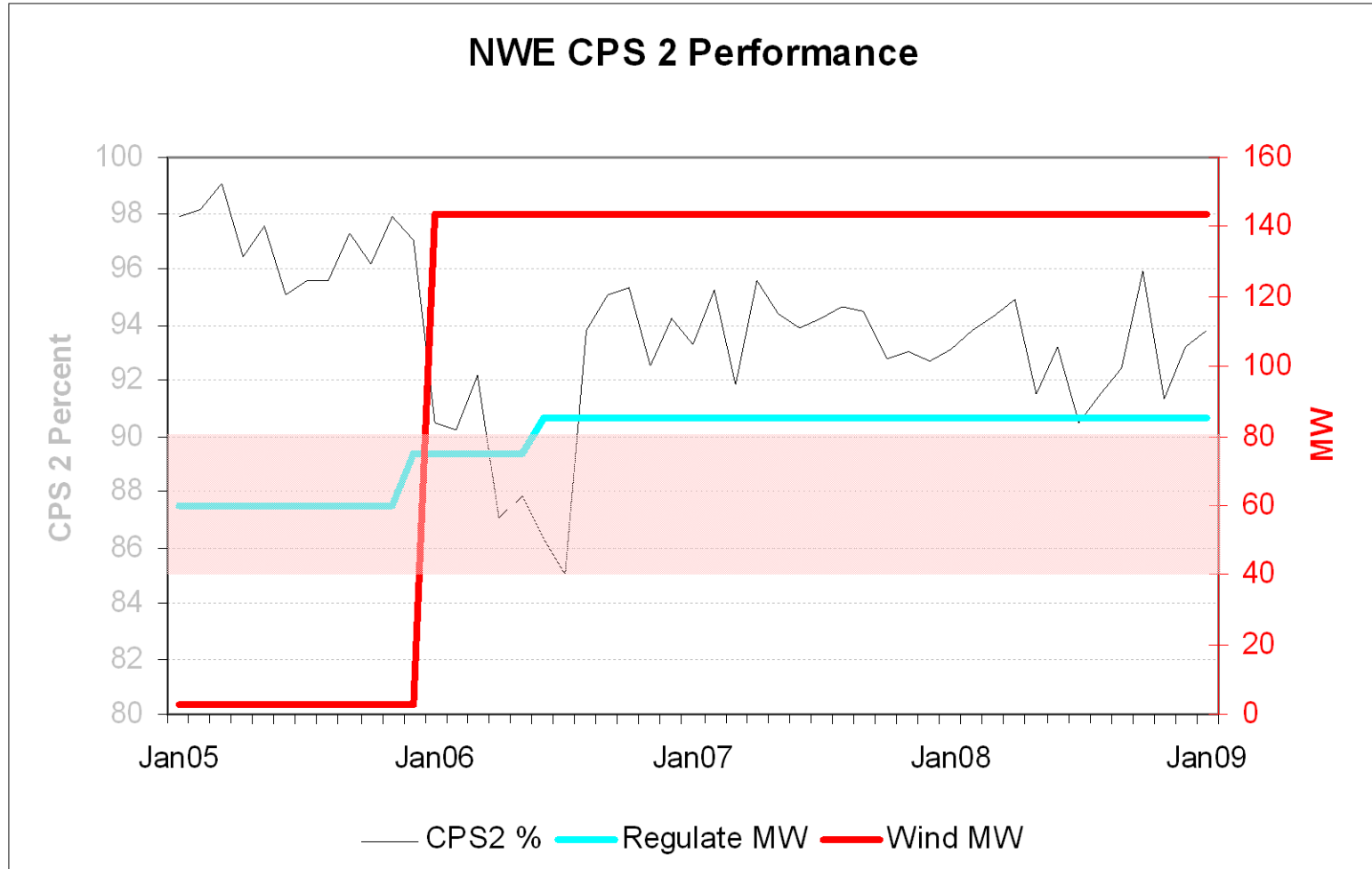
Joint Meeting  
Committee on Regional Electric Power Cooperation  
And  
Western Interconnection Regional Advisory Body  
San Diego, California  
April 8-9, 2009

***Planning for Flexibility to Integrate Variable  
Renewable Generation***

John Leland



# NWE's CPS 2 Performance



# NWE's Current Situation

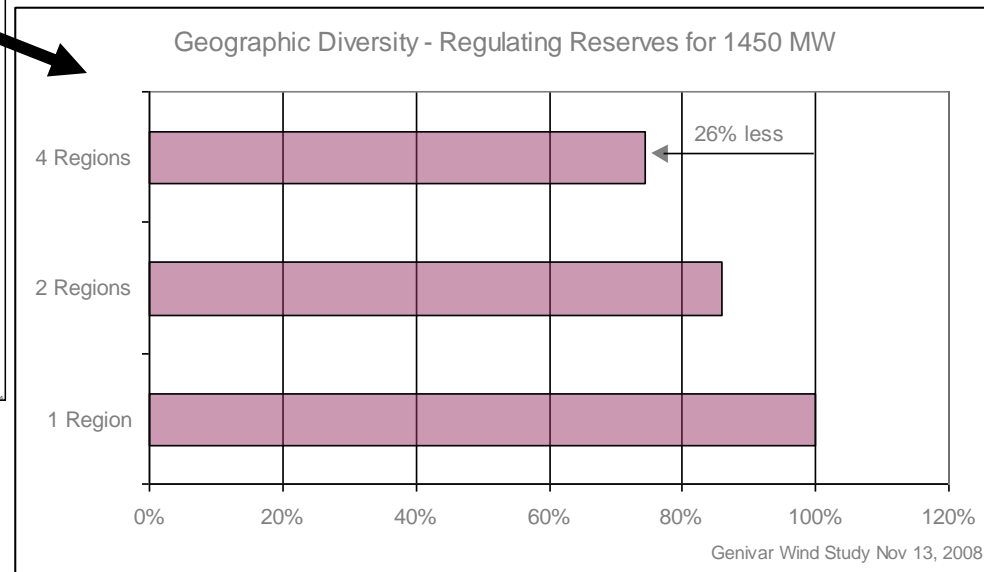
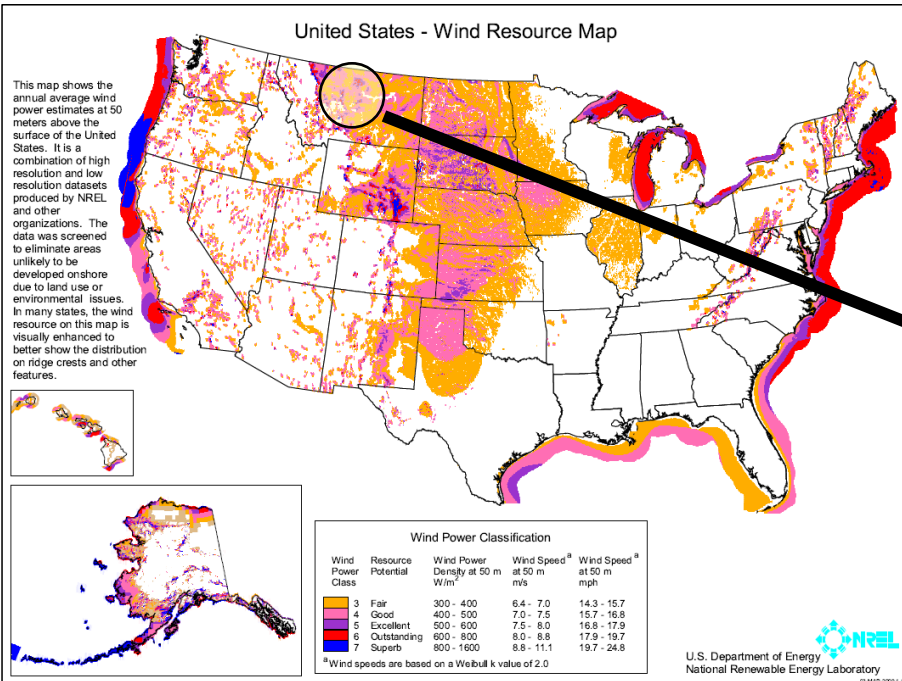
- NWE owns no generation capable of providing Regulating Reserves
  - Must purchased regulating reserves from others in the market
- NWE OATT does not require certain ancillary services to be provided to customers not serving load in NWE balancing authority.
- Transmission Customers serving load outside NWE BA must either:
  1. Self provide
  2. Telemeter generation out of NWE Balancing Area to receiving BA
  3. Form its own BA
    - One new wind farm is its own Balancing Area that contract their regulating reserve requirement

# NWE's Current Solution

- Must purchased regulating reserves from the market
- Proposed the Mill Creek Generating Station
  - To meet existing NWE portfolio regulating needs
- Participating in ADI
- Participating in Joint Initiative
  - Potential for build infrastructure for dynamic scheduling for those who want to offer into market
- Proper scheduling
- State of the art forecasting techniques potential to modify wind generation scheduling (3-Tier)

# Future Global Solutions – One Idea

## Capture Diversity



# Future Global Solutions – Other Ideas

- Recognize NOW that this is everyone's long-term problem
  - Some larger players recognize (especially non-U.S.)
- Develop longer-term solutions NOW
  - Comprehensive solutions w/implementation strategy
  - Long-term price recognition by all entities
  - Bridge short-term solutions into longer-term solutions
  - Risk management strategies - know off-ramps
- Support education NOW

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