NPPD's Wind Integration Rate

Nebraska Wind Conference

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Nebraska Public Power District

"Always there when you need us"

General

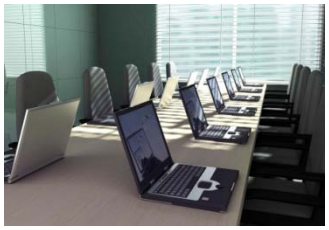
- NPPD must balance generation with load in its Balancing Area (BA)
- Wind generation is variable and difficult to forecast
  - It requires other non-wind dispatchable generating units in the BA to respond to and compensate for this variation in wind output
- Causes a financial impact to the BA for integrating wind generation
- Financial impact is based on the cost of the non-wind generators that provide this service

NPPD Balancing Area

Dispatchable Power Plants

For Every Second Generation Must Meet Load

Variable Load



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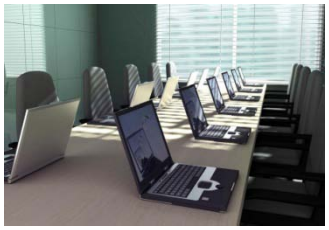

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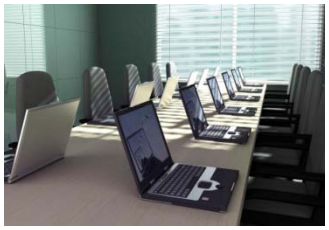

NPPD Wind Integration Rate Design Procedure

- NPPD utilized the EnerNex methodology for determining its wind integration generation reserve requirements for its BA
  - Same methodology utilized in the NPA-NREL Nebraska Statewide Wind Integration Study Report completed last year
- Wind integration generation reserve requirements consist of 2 components:
  1. Regulation reserves (short-term hourly)
  2. Supplemental reserves (longer term)

NPPD Wind Integration Rate Design Procedure

- There is a sharing of the regulation reserve requirements between wind generation and load
  - Accounted for in the rate design
- Preliminary results are that 16 MW of regulation reserves and 21 MW of supplemental reserves are required for wind integration in NPPD's BA in 2011

NPPD Wind Integration Rate Design Procedure

- These generation reserve amounts are costed in the same manner as used for NPPD's other ancillary service rates
  - Based on the fixed cost of the generators that provide the service
- Preliminary result is a Wind Integration Rate (WIR) of $4.65/MWh

Rate Applicability

- T-2 WIR will only apply to the portion of wind generation that is not pseudo-tied out of the NPPD Balancing Area
  - Not self-supplied by the customer
- When wind generation is pseudo-tied out (e.g., OPPD and LES's share of Elkhorn Ridge), NPPD's generators do not have to respond or account for the variability in the wind output
  - NPPD does not incur wind integration costs

Rate Applicability

- T-2 WIR will apply to the participants in Ainsworth, Elkhorn Ridge, and future wind purchases (e.g. Laredo Ridge)
- If and when the Southwest Power Pool (SPP) develops a wind integration rate that applies to such generation that appropriately compensates NPPD for its wind integration costs
  - T-2 WIR may become a pass-through of the SPP rate

Questions