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October 25, 2012

MEMORANDUM

TO: Power Committee

FROM: Charlie Black, Power Planning Division Director

SUBJECT: Report on Wind Integration Forum Oversupply Technical Oversight Committee – Paul Norman

Earlier this year, the Oversupply Technical Oversight Committee (OTOC) to the Wind Integration Forum completed a set of recommendations and was directed to explore alternatives to mitigate oversupply operational and cost impacts. The OTOC has completed its work on these requests and is currently preparing a report summarizing its conclusions. The report is expected to be circulated shortly; it will then be discussed by the Wind Integration Forum Steering Committee in the next couple of months.

At the Power Committee meeting on November 6, Paul Norman will summarize the OTOC report and possible follow-up activities. He will also be available to respond to questions from the committee. Paul is a former vice president at Bonneville and is now an independent consultant.



Oversupply Update

November 6, 2012

- Paul Norman, OTOC Facilitator
- Ken Corum, Council Staff Lead

Sizing the Issue

- BPA estimated 300,000 MWh of wind displacement in 2012 costing \$12 million.
- Implies competitive solution costs < \$8/kW-yr, or significant additional benefits
 - Compare, e.g., Sixth Plan Pump Storage levelized cost of \$324/kW-yr.
- Actual wind displacement so far:
 - 2011: 97,000 MWh
 - 2012: 50,000 MWh, \$3 million



Timeline

- Oversupply Technical Oversight Committee (OTOC) formed summer 2011
- Produced Recommendations report April 2012
- Steering Cte provided guidance May 2012
- OTOC Supplemental Report nearly complete
- Proposing Steering Cte discussion in early December



Summary

- No solution that is large, cheap, and fast (No 'silver bullet')
- But many initiatives that will significantly reduce (though probably not eliminate) oversupply conditions.
- Major focus of OTOC since May meeting: Load Shifting

Load Shifting

- Concept: Change rate design, or provide other incentives to shift load into off-peak hours
- Conclusion: Potential is in hundreds, not thousands of MW's. But worth pursuing
- OTOC Recommendation: Utilities should consider:
 - Quantifying savings from load shifting,
 - Modifying rate design, and/or
 - Identifying and working with specific customers

Oversupply Mitigation Actions: Status and Timeline

DRAFT

ACTION	Responsible Entity	STATUS	Potential Contribution	Potential Completion Date
Shifting Load to LLH	OTOC?	OTOC Supplemental Report encourages utilities to consider action.	200-500 MW? (Very rough estimate)	2018
Efficient Generation Displacement, Transmission System Trading Enhancements, Mini Energy Imbalance Market (EIM) Pilot, Cross Balancing Area Exchanges: Transmission Expansions	NWPP MA CoI Grid NTTG Others	These are ongoing efforts with significant benefits for Oversupply.	Significant, but not quantified	2018
Resistive Load Banks	BPA	Under Study	Unlimited	2013
Aquifer Recharge	BPA	Pilot recently completed	200-300 MW	2014
Keys Pumped Generating Station	BPA/USBR	BPA Approve Phase 1 Additional phases under study	200-300 MW for all phases	Phased in through 2021
Preemptive spill at non-federal projects	OTOC	OTOC Recommendation to fund contract work	No Estimate Yet Likely Under 300 MW	2015

Reservoir Surcharge at non-federal projects	OTOC	OTOC Recommendation to fund contract work	No Estimate Yet Likely Under 300 MW	2015
Demand Response, including electric vehicle charging	Various	Utilities moving to next-stage. OS could be added to business cases.	400 MW	2015?
Establish a working group of cash market traders and generation schedulers to assess the feasibility of, barriers to and potential for increased use of "other than firm" HLH transactions	NWPP MA	OTOC Members who also participate on NWPP MA committee will advance this	No Estimate Yet	2013
Establish a forum to discuss and share operational experiences and practices among industry parties	NWPP MA	OTOC Members who also participate on NWPP MA committee will advance this	No Estimate Yet	2013
Engage regional transmission planning groups such as NTTG and Columbia Grid to perform grid constraint analysis to increase regional understanding of possible displacement option limitations	NWPP MA	OTOC Members who also participate on NWPP MA committee will advance this	No Estimate Yet	2013



Additional Actions Reviewed

- Annual Outages at CGS
- TDG Reduction Measures
- Greater TDG Flexibility



Future of OTOC?

- Members Recommend:
 - Ramp-back level of effort
 - Monitor and report progress semiannually