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Dick Wallace
Vice-Chair
Washington

Tom Karier
Washington

Bill Bradbury
Oregon

Joan M. Dukes
Oregon

January 4, 2011

MEMORANDUM

TO: Council Members

FROM: Ken Dragoon

SUBJECT: Renewable Energy Development in Montana Panel Discussion

Three companies active in renewable energy development in Montana will give their perspectives on the challenges and opportunities they face in the state. Montana has unique challenges and opportunities associated with an abundance of renewable resources compared with many other states, and its relative isolation from major load centers. The panel is composed of:

Chantel McCormick, Vice President, Grasslands Renewable Energy. Founded in 2008, Grasslands is a renewable energy leader focused on providing integrated renewable energy solutions in North America. Grasslands was formed by Absaroka Energy, LLC of Bozeman, MT and Rocky Mountain Power (2006) Inc. of Calgary, Alberta. Recently Grasslands partnered with a Spanish engineering and renewable energy company, Elecnor S.A., offering international expertise in wind, solar, and smart grid technologies. Grasslands seeks to build the energy infrastructure that can support the development of clean, efficient, and affordable renewable energy.

Ted Williams, Head of Transmission, Gaelectric North America. Gaelectric North America is focused on assembling large wind power projects in high wind resource areas and supporting the grid expansion necessary to deliver wind power to growing loads and “green power” markets. The Gaelectric development model closely resembles strategies used by traditional energy resource companies. In the same way oilmen develop large, remote petroleum reservoirs and gas fields, Gaelectric secures the largest, highest potential wind energy sites available and designs and builds a delivery infrastructure to bring that power to market. This business model combines strong economies of scale with high net capacity factors. Gaelectric North America has assembled a wind power project pipeline with over 3 gigawatts of installed capacity potential in Montana. Gaelectric has made a major commitment to developing Compressed Air Energy Storage for utilizing off-peak wind energy and regulating and firming power deliveries to the grid.

Ross Keogh, Principal Planner and Analyst, Sagebrush Energy, LLC. Sagebrush is a renewable energy development and consulting company founded in 2006 by Paul Kimball (principal) and Ben Ellis (project manager). Sagebrush is currently involved in the development of 300 MW of wind and is focused in Montana on a series of small wind energy projects that would provide clean renewable energy at a scale that is sensitive to aesthetic and environmental concerns. Both owners have direct and daily management oversight of project operations, including all aspects of planning, permitting, financing, constructing, and operating wind energy projects. The company has two active projects in development in Montana, the 20 MW Norris Hill wind project in Madison County, and the 20 MW Mission Creek project in Park County. Mr. Keogh will focus on the challenges and opportunities presented to developing the next 200 MW of wind in Montana.



Developing the next 200 MW of Wind in Montana (what we don't export)

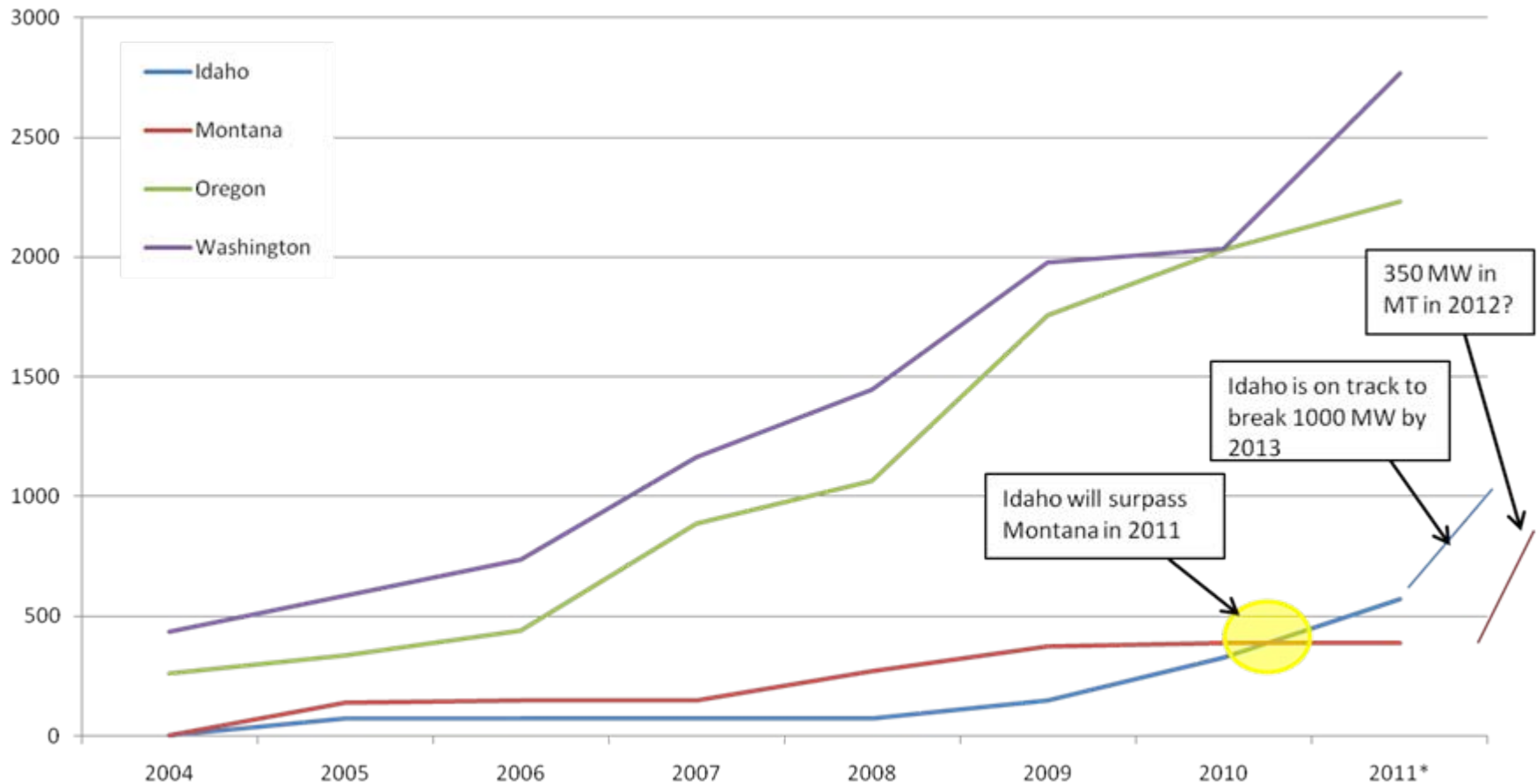
Ross Keogh, Sagebrush Energy
For the NW Power & Conservation
Council, 1/12/2011

About Sagebrush Energy



- A renewable energy development and consulting company founded in 2006 by Paul Kimball & Ben Ellis
- Focused on developing 300 MW of wind in Idaho & Montana
- Two 20 MW projects in Montana in late stage development (Mission & Norris)
- Supported UAMPs on the 100 MW Horse Butte Wind Farm near Idaho Falls, ID
- Developer for a joint partnership of the Shoshone-Bannock and Southern Ute Tribes on the 160 MW WheatGrass Ridge Wind Project near Pocatello, ID

Wind Energy Growth in Power Council States



- 2011 capacity reflects projects under construction at the end of the 3rd quarter 2010
- Data is from AWEA's project database, 9/30/2010

Wind Energy Penetration

	Total Potential	2011 Wind Capacity	Installed Capacity by Potential	2008 aMW demand, EIA	% of load met by Wind
Idaho	18,076	571	2.14%	2,728	6.9%
Montana	944,004	386	0.04%	1,750	7.3%
Oregon	27,100	2233	8.24%	5,612	13.1%
Washington	18,478	2771	14.99%	9,971	9.2%

Montana lags behind in penetration the relatively resource poor states of OR & WA

How much wind does Montana need to meet OR & WA penetration?

Today	7.3%
100 New MW	9.2%
200 New MW	11.1%
300 New MW	12.9%

200 MW to meet the average of OR & WA penetration

- Potential is from AWS Truewind and NREL, 2/2010 (http://www.windpoweringamerica.gov/pdfs/wind_maps/wind_potential_80m_30percent.pdf)

Demand Exists in Montana for 200 MW

•Electrical COOPs in the state are building natural gas plants as sole resource solution:

- Southern Montana Electric: 46 MW (35 aMW)
- Basin Electric: 95 MW (72 aMW)

If 25% of aMW were derived from wind by COOPs :

- SME: 34.5 MW Gas & 23 MW Wind = 35 aMW **= 71 MW**
- Basin Electric = 71 MW Gas & 48 MW Wind = 95 aMW

NorthWestern Energy's 2009 IRP (released 2nd quarter 2010):

- Significant aggregate annual demand not met by contract resources 210 aMW in 2010
- Existing contract resources and Judith Gap (496 MW), fail to meet even average light load (602 MW)

If 130 MW of wind was added to NWE:

- 50 aMW (24% of need) **= 130 MW**
- 361 MW of contract + 265 MW Wind = 626 MW, 24 MW over average light load
- 50 MW of wind under "MOU" for 2012 construction

Key barriers to Wind Energy Development

- Montana has demand and resource potential for 200 MW of wind, but development has stalled.
- No new wind in NWE's BAA since 2006.

Why?

- Extraordinary Regulation Costs
- Minimal Political Support
- The Ghosts of Deregulation

Regulation Resource Costs in Montana

- NWE requires 25-31 MW of RRR to balance Judith Gap (19-23% of nameplate)

RRR Costs	KW Month	Cost per MWh (20% RRR)
2008 NWE Contract Blend	\$12.2	\$8.8
Mill Creek	\$27.70?	\$20.0

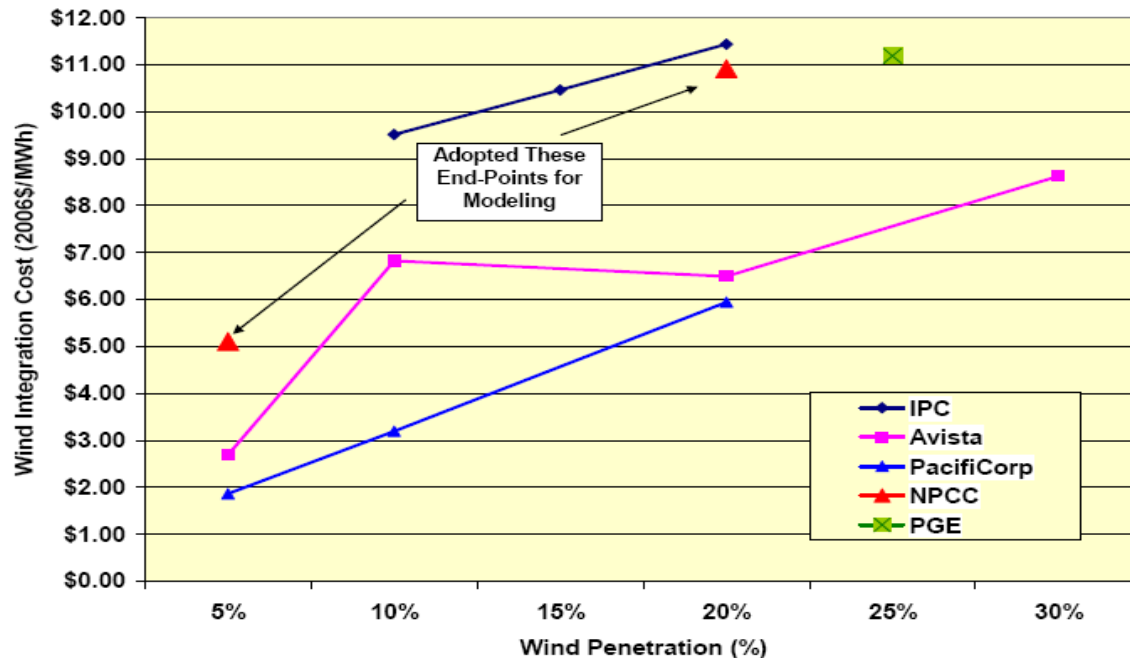
RRR cost in MT is the monetized PTC value going forward

- Assumes 38% project capacity factor, no balancing energy, and \$2.5/kW transmission cost for external resources.
- Avista, PowerEx and Grant PUD rates are from 2008. No guarantee of future availability or price. Avista's rate increased 15% from 2007 to 2008.
- Need to draw RRR from Grant PUD and PowerEx (two wheel resources), shows highly inelastic RRR supply curve.
- Mill Creek has been granted only interim approval by FERC, Settlement negotiations underway, decision expected 2nd quarter 2011.
- Mill Creek is only an RRR solution for the next 300 MW of wind

Regulation Resource Outside of Montana

- PacifiCorp, 2010 Wind Integration Study, \$8.85 per MWh (including cost of economic dispatch and day-ahead error)
- BPA, 2010 Rate Case, \$5.70 per MWh
- NPCC, (p.14 of Appendix 1):

Figure I-1: Wind integration cost estimates as a function of wind penetration from various wind integration studies



Minimal Political Support

- LC1497, Jason Priest (R), would repeal MT RPS
- LC 1618, Derek Skees (R), would also repeal the MT RPS
- Three other bills to weaken or effectively eliminate the RPS (SB 109, LC0325, HB 59)

**Democratic PSC Commissioner,
John Vincent:**

**Republican PSC Commissioner,
Travis Kavulla:**



[All Aboard the Green Bandwagon, Jon Tester Edition](#)

Written by Travis Kavulla on 16 November 2010

Our junior senator ably proves in an op-ed yesterday why he's considered one of the dimmer lightbulbs in the U.S. Senate. Barely [a single number](#) is quoted, at least one factual error is committed, and an obvious internal contradiction is left unresolved in a cliché-ridden piece of writing which reminds me what I never, ever must become in a public office: a panderer who cannot even muster a logically consistent argument.

The Ghosts of Deregulation

- NorthWestern Energy was prohibited from owning generation assets until 2007
- Resource Planning Process in Montana is weak
- Most large industrial loads purchase energy from PPL Energy Plus (314 MW)
- With no resources, NWE was truly stranded for capacity to regulate wind and load
- BPA supported COOPs abandoned NorthWestern Energy for load regulation in 2009 (184 MW)
- NorthWestern Energy was trying to sell out to BBI until 4th quarter 2007

Steps Forward

- FERC NOPR on integrating VERs is significant and has real potential to lessen RRR need
- Dialogue is important
- Long-term subsidy solution (or real carbon cost) are persistent federal issues
- BAA consolidation and RTO formation are long-term and real solutions to cost allocation and regulation issues that should not be forgotten...

Contact

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