
Opportunities for Montana Wind

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Montana Wind Exports?

OPPORTUNITY

- Puget Sound Energy's 2015 Integrated Resource Plan calls for ~200 MW of incremental wind by 2024 to meet projected RPS requirements

PROS OF MONTANA WIND RESOURCES

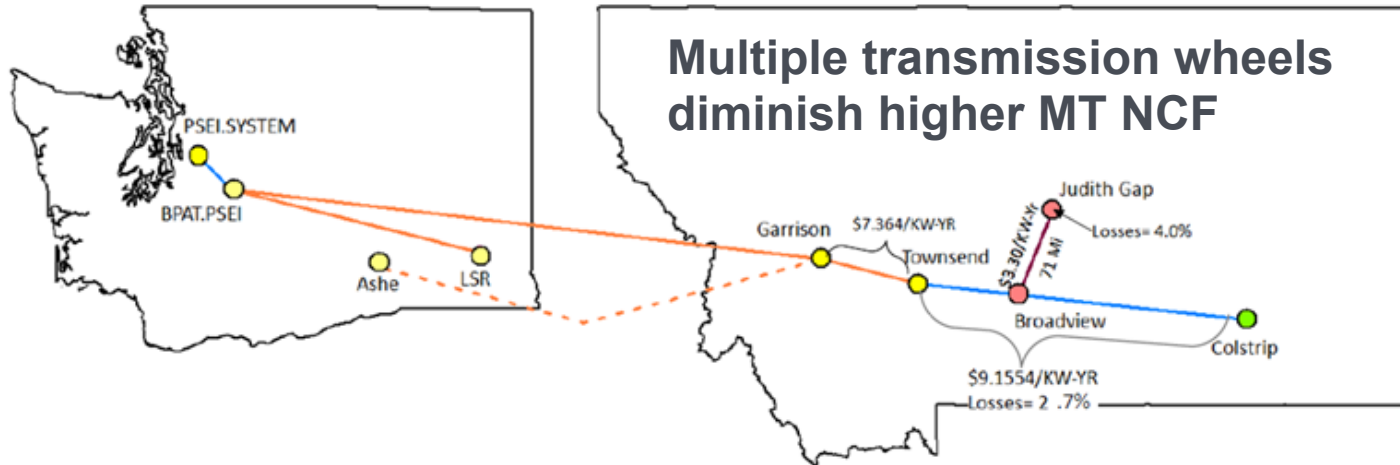
- Higher average NCF (41%) compared to Washington (34%); more energy and PTCs
- Larger peak capacity credit (55%) versus Washington (8%); winter wind profile more closely aligns with PSE load
- No sales tax associated with plant construction

CONS OF MONTANA WIND RESOURCES

- Premium wind resources not always adjacent to existing lines
- Distance from load = more wheeling charges and line losses
- Currently limited/no excess transmission capacity
- To qualify for WA RPS, Montana wind would need to be located in the BPA drainage basin or be dynamically scheduled to WA

WA vs. MT Transmission

Transmission Costs- Building 265 MW Wind Facility Near Judith Gap



Transmission and Substation Costs

Assumed Colstrip Retirement	Colstrip Operating
A) \$52.5 Million- Upgrade JG-Broadview Line	C) \$682.5 Million- Upgrade JG-Broadview Line + Expand Broadview Sub + New Broadview Garrison Line + Expand Garrison Sub
B) \$114 Million- New JG-Broadview Line + Broadview Sub. Upgrade	D) \$744 Million- New JG-Broadview Line + Expand Broadview Sub + New Broadview Garrison Line + Expand Garrison Sub

+ \$1 Billion (New Garrison to Ashe Transmission Line)

Legend	
—	BPA
—	BPA Conceptual Upgrade
—	Northwestern Montana
—	PSEI

Wind Capacity	Percentage
MT Wind Capacity Factor	41.00%
Loss Factor	6.70%
Wind Capacity Net of Losses	38.30%
Transmission Costs	
	\$/KW-Year
Judith Gap to Broadview	\$ 3.3000
Broadview to Townsend	\$ 9.1550
Townsend to Garrison	\$ 7.3640
Total	\$ 19.8190
\$/MWh	\$ 5.5200

*Broadview to Garrison = 225 Miles

*Garrison to Ashe project is not reflected in costs

*Right Of Way costs are not included in estimate of new transmission lines

*Assuming plant size of 265 MWs

*Costs only reflect additional substation/transmission equipment does not include transmission wheeling or cost to build wind facility

*Overheads not included

WA vs. MT Wind Profiles

