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REBUTTAL TESTIMONY of

DENNIS E. METCALF, REBECCA E. FREDRICKSON, DAVID W. BOGDON,

STEPHEN A. WHITE, and BARTHOLOMEW A. McMANUS

Witnesses for Bonneville Power Administration

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Witnesses for Bonneville Power Administration

SUBJECT: MONTANA INTERTIE

Section 1: Introduction and Purpose of Testimony

Q. Please state your names and qualifications.

A. My name is Dennis E. Metcalf. My qualifications are contained in BP-14-Q-BPA-47.

A. My name is Rebecca E. Fredrickson. My qualifications are contained in BP-14-Q-BPA-21.

A. My name is David Bogdon. My qualifications are contained in BP-14-Q-BPA-07.

A. My name is Stephen A. White. My qualifications are contained in BP-14-Q-BPA-69.

A. My name is Bartholomew A. McManus. My qualifications are contained in BP-14-Q-BPA-45.

Q. What is the purpose of your testimony?

A. This testimony responds to issues raised by the direct testimonies of Joint Party 10, Baker *et al*., BP-14-E-JP10-01 (JP10), and Western Public Agencies Group, Saleba *et al.*, BP-14-E-WG-01 (WPAG), regarding BPA rates for transmission service over the Eastern Intertie.

Q. *Are you changing your Initial Proposal, which was to make no changes to the methodologies used to calculate the rates for the Eastern Intertie?*

A. No. However, we remain open to considering roll-in of BPA's share of Eastern Intertie capacity.

Section 2: Benefits to Network

Q. *JP10 asserts that BPA Staff's Initial Proposal does not demonstrate that eliminating the IM-14 [Montana Intertie] rate and recovering BPA's share of Eastern Intertie costs from users of the Integrated Network would benefit Northwest utilities or consumers. Baker et al., BP-14-E-JP10-01, at 1. Do you agree?*

A. No. Our direct testimony demonstrates that there are potential benefits to Pacific Northwest utilities and their consumers from "roll-in" of BPA's share of Eastern Intertie capacity, including those utilities that are subject to state renewable portfolio standards (RPS) or any utility that seeks to acquire renewable generation. Montana wind generation generally would have a higher capacity factor and would be better shaped to meet Pacific Northwest loads than wind generation near the Columbia River. Metcalf *et al.,* BP-14-E-BPA-35, at 4. Therefore, Montana wind generation transmitted over BPA's rolled-in Eastern Intertie capacity could be a competitive alternative to wind generation near the Columbia River, assuming no new capital costs resulting in significant transmission rate increases. *Id.* at 3.

Q. *JP10 states that "if Network customers are protected from having to pay these upgrade costs, then the customers seeking transmission service that require those upgrades, in this case Montana wind generation, will have to bear them through the payment of an incremental rate. In that case, the 'competitiveness' of eastern Montana wind, by BPA's analysis, would be lost and the point to rolling in the Eastern Intertie along with it." Baker et al., BP-14-E-JP10-01, at 9. Do you agree?*

A. It is true that roll-in of BPA's Eastern Intertie capacity would increase the competitiveness of Montana wind generation only for the available transmission capacity BPA has on the Eastern Intertie, which is currently 184 MW. Beyond that, our direct testimony showed the amount of potential wind generation in Montana that is undeveloped, and we explained that due to incremental state RPS requirements in 2020 and 2025, there could be a market for some amount of that generation in Oregon and Washington. Metcalf *et al.,* BP-14-E-BPA-35, at 4-5. Whether there would be sufficient demand over which to spread costs of new facilities without triggering the need for an incremental rate is uncertain and would be determined in future BPA Network Open Season (NOS) processes.

Q. *Please explain how BPA would make this determination.*

A. Under NOS, BPA periodically clusters requests for transmission service on the Integrated Network and performs a study to determine what new facilities would be needed to serve all requests in a cluster. *See* http://transmission.bpa.gov/customer_forums/nos_home/. Under the proposed revisions to the NOS process, which BPA will present to customers

as part of the NOS reform process, BPA would then perform a preliminary financial analysis of the cluster study results. With this information, the eligible customers would determine, before BPA commences a National Environmental Policy Act (NEPA) study, whether to commit to take service under a PTSA and to provide security for their respective shares of NEPA study costs and construction costs.

After the NEPA study is complete, BPA would perform a rolled-in rates test based on the previous service commitments to determine whether the revenues from the commitments would be sufficient to cover the net revenue requirements of the new facilities with minimal rate impact to the Network. If there would be significant impacts to Network rates from construction of new facilities, BPA would not build unless the customers wanted to proceed with an incremental rate.

Q. *JP-10 states that it does "not expect Eastern Intertie transmission service would be located within the Pacific Northwest as that term is defined by statute." Baker et al., BP-14-E-JP10-01, at 5. Do you agree?*

A. No. Attachment A shows that the Townsend–Garrison line, or Eastern Intertie, is within BPA's service area. The location of the Montana wind generation that would use the Eastern Intertie is also significant. Northwest Power Act section 2(1)(B), 16 U.S.C. § 839(1)(B), states that a purpose of the Act is to encourage the development of renewable resources within the Pacific Northwest. We believe that some of that generation could be located within 75 air miles east of the Continental Divide in the service area of either Glacier Electric Cooperative or Vigilante Electric Cooperative. If so, that generation

would be within the Pacific Northwest as defined by the Northwest Power Act, section 3(14)(B), 16 U.S.C. § 839a(14)(B). The National Renewable Energy Laboratory (NREL) has published state maps of potential wind generation, including a map of Montana. Attachment 1 to this testimony is a Montana wind map that uses NREL data[1] to show areas of high-quality wind (areas with wind speeds of 7 meters per second or higher). We have superimposed on the map the Continental Divide, BPA's service area boundary, and the Glacier Electric Cooperative and Vigilante Electric Cooperative service areas. Attachment 1 identifies areas of high-quality wind within 75 miles east of the Continental Divide in the service areas of Vigilante Electric Cooperative and Glacier Electric Cooperative. In addition, we understand that the Rimrock Wind Park and part of the Glacier Wind Farm wind generation projects listed in the spreadsheet attached to data response JP10-RN-12 (Attachment 2 to this testimony) are in the Glacier Electric Cooperative and BPA service areas. Wind generation in the areas of those cooperatives could access the Eastern Intertie through transmission service from a local transmission provider.

[1] An NREL map is available at http://www.nrel.gov/gis/images/eere_wind/eere_wind_montana.jpg (last accessed March 7, 2013).

Q. *Could there be other benefits to Network customers from rolling in the costs of BPA's Eastern Intertie capacity?*

A. Yes. There has been some limited westbound non-firm and short-term firm use of BPA's Eastern Intertie capacity, paying the IM rate. If that capacity were to become part of the Network segment, there could be increased demand for such service at the rolled-in Network rate.

Section 3: Protection from Increased Costs to the Network

Q. *JP10 and WPAG assert that the NOS and the incremental cost rate might not adequately protect Network customers. Baker et al., BP-14-E-JP10-01, at 9; Saleba et al., BP-14-E-WG-01, at 43-47. What is your response?*

A. Protection of existing customers from significant rate increases caused by network upgrades is an objective of the NOS process, the rolled-in rate analysis, and the policy of charging incremental rates. Although use of incremental rates would be required in the circumstances described in section IV of the proposed NT-14 and PTP-14 rate schedules, a specific design for an incremental rate would be adopted in a future BPA rate case. Transmission, Ancillary and Control Area Service Rate Schedules and General Rate Schedule Provisions, BP-14-E-BPA-10, at 16 and 20. In addition, although the existing NOS process provides significant protection to existing customers, BPA is currently revising the process with a guiding principle of avoiding cost shifts and ensuring that risks and costs follow causation, thus protecting existing customers. *See*

http://transmission.bpa.gov/customer_forums/nos_gi_reform/nos_and_gi_reform_overview_072011.pdf, slide 7. The NOS process and any rate process to develop an incremental rate are the correct forums for addressing JP10's and WPAG's concerns.

Q. *JP10 asserts that "even if …Network customers would not see those upgrade costs [for new facilities needed to transmit Montana wind generation on the Network] rolled into the Network segment, there remains a substantial risk that wind developers causing the facilities to be built would default on their obligations and leave BPA's transmission customers with the burden of underutilized transmission facilities whose costs would be ultimately paid by all transmission customers." Baker et al., BP-14-E-JP10-01, at 9. JP10 says this risk is demonstrated by recent terminations, modifications, and threats of default. Id. How do you respond?*

A. JP-10's response to data request BPA-JP10-2 (Attachment 3 to this testimony) indicates that JP10 is concerned about the risk of default if a new line is built from Montana, such as the proposed GASH line. Attachment 3, at 2-3. If JP10's testimony refers to risk of customer default under NOS, BPA has not proposed to eliminate all risk in any construction decisions based on the NOS process. We do expect the changes to the NOS process will minimize the risk by requiring more security from customers participating in NOS than under the previous NOS process. Additional security requirements would reduce BPA's risk by providing a source of funds in the event of customer default and by limiting NOS participants to customers that are willing to risk the additional security requirements. As stated above, the policy process regarding NOS is the appropriate

forum for JP10 and others to raise their concerns. If JP10's testimony refers to the risk of customer default related to a project for which BPA charges an incremental rate, BPA's tariff provides that the customer will provide security equivalent to the cost of the facilities. BPA Tariff, sections 19.4 and 32.4.

Q. *WPAG asserts that because "BPA has not yet proposed, designed or implemented an incremental cost rate for purposes of recovering the costs of transmission projects where the Administrator decides that the project will not proceed under rolled-in rates … it is difficult for us to agree or disagree that such a rate would protect BPA's existing customers." Saleba et al., BP-14-E-WG-01, at 44. How do you respond?*

A. BPA would develop any incremental rate in a Northwest Power Act section 7(i) process. Transmission, Ancillary and Control Area Service Rate Schedules and General Rate Schedule Provisions, BP-14-E-BPA-10, at 16 and 20. Similar to the present rate proceeding, WPAG could present evidence and argument in that proceeding to protect its interests.

Q. *WPAG also asserts that BPA may be forced to use customer financing for incremental rate projects in Montana and then increase its revenue requirement to pay for the credits refunded to the customers. Saleba et al., BP-14-E-WG-01, at 44-47. How do you respond?*

A. WPAG cites testimony regarding credits that BPA provides for customer financing of upgrades needed to interconnect large generators to the network. BPA does not provide for customer financing of facilities needed for new transmission service, and BPA's tariff

does not include customer financing as an option regardless of whether service is provided at rolled-in or incremental rates. If BPA proposes to change its tariff to allow customer financing of transmission facilities, WPAG and others may participate in that process to protect their interests.

Section 4: Montana Intertie Relationship to Generation Interconnection and the Southern Intertie

Q. JP-10 states that BPA views the Eastern Intertie as predominantly a generation interconnection facility, based on your response to data request PP-BPA-33. Baker et al., BP-14-E-JP10-01, at 10. Do you agree?

A. Not completely. The BPA testimony addressed in the data request dealt with the Eastern Intertie as a whole. The Eastern Intertie was built for BPA to provide transmission service for Colstrip generation to BPA's integrated network, and, pursuant to the Montana Intertie Agreement, that is still its primary purpose. This is because the agreement provides that the other parties to the agreement are to use their capacity on the Eastern Intertie for Colstrip power or other power they own. Thus, the Eastern Intertie capacity of the other parties to the Montana Intertie Agreement could be considered a generation interconnection facility. However, BPA Staff is not considering roll-in of the portion of the Eastern Intertie used to transmit Colstrip power. Instead, we are considering roll-in only of BPA's Eastern Intertie capacity. Metcalf *et al.,* BP-14-E-BPA-35, at 3. BPA's capacity on the Eastern Intertie is not a generation interconnection facility for the following reasons.

When the Eastern Intertie was energized in the 1980s, BPA entered into a memorandum of understanding with the Western Area Power Administration (Western) to provide Western 185 megawatts (MW) of transmission capacity on the Eastern Intertie for transmission of power from a source other than Colstrip for delivery to Western's California customers. The memorandum of understanding has since been terminated. Since adopting an open access tariff, BPA has made that capacity available at the IM rate but has sold only 16 MW of the capacity westbound on a long-term basis. Although we understand that the 16 MW firm sale is used to transmit Colstrip generation, the purchaser of the capacity is not obligated to use the capacity to transmit Colstrip generation, and the remaining 184 MW of BPA's available capacity is not used to transmit Colstrip generation. Because the Montana Intertie Agreement does not limit BPA's use of its Eastern Intertie capacity to Colstrip generation or other power owned by BPA, and BPA makes its capacity available under its tariff, BPA's capacity is not a generator interconnection facility.

The entire Eastern Intertie has been used exclusively in a westbound direction and has been primarily used for transmission of Colstrip generation. This usage distinguishes it from the Southern Intertie, which was built, and has been used, for interregional transfers of power in both directions.

Q. WPAG asserts that a settlement agreement on whether rolling in the Montana Intertie was precedent for rolling in the Southern Intertie would not bind new parties in future rate cases or parties in this case that do not sign such a settlement agreement. Saleba et al., BP-14-E-WG-01, at 49-50. What is your response?

A. BPA would prefer to have such an agreement. Metcalf *et al.,* BP-14-E-BPA-35, at 3. However, we recognize that it is unlikely that we could reach agreement with all of the parties and that an agreement would not bind parties that do not sign.

Section 5: Oversupply

Q. WPAG asserts that the addition of up to 9000 MW of Montana wind generation "would increase the frequency and severity of oversupply events, and increase oversupply costs borne by other customers." Saleba et al., BP-14-E-WG-01, at 47-48. Do you agree?

A. BPA has only 184 MW of available transmission capacity on the Eastern Intertie, not 9000 MW. Therefore, rolling in BPA's share of the Eastern Intertie capacity could not have the impact WPAG claims. Moreover, because BPA does not have available firm capacity westbound on its integrated network in Montana, which is west of the Eastern Intertie, firm transmission of any amounts of Montana wind generation on BPA's integrated network may have to wait several years until any new facilities would be built. As a result, projecting the impact Montana wind generation would have on oversupply is highly speculative.

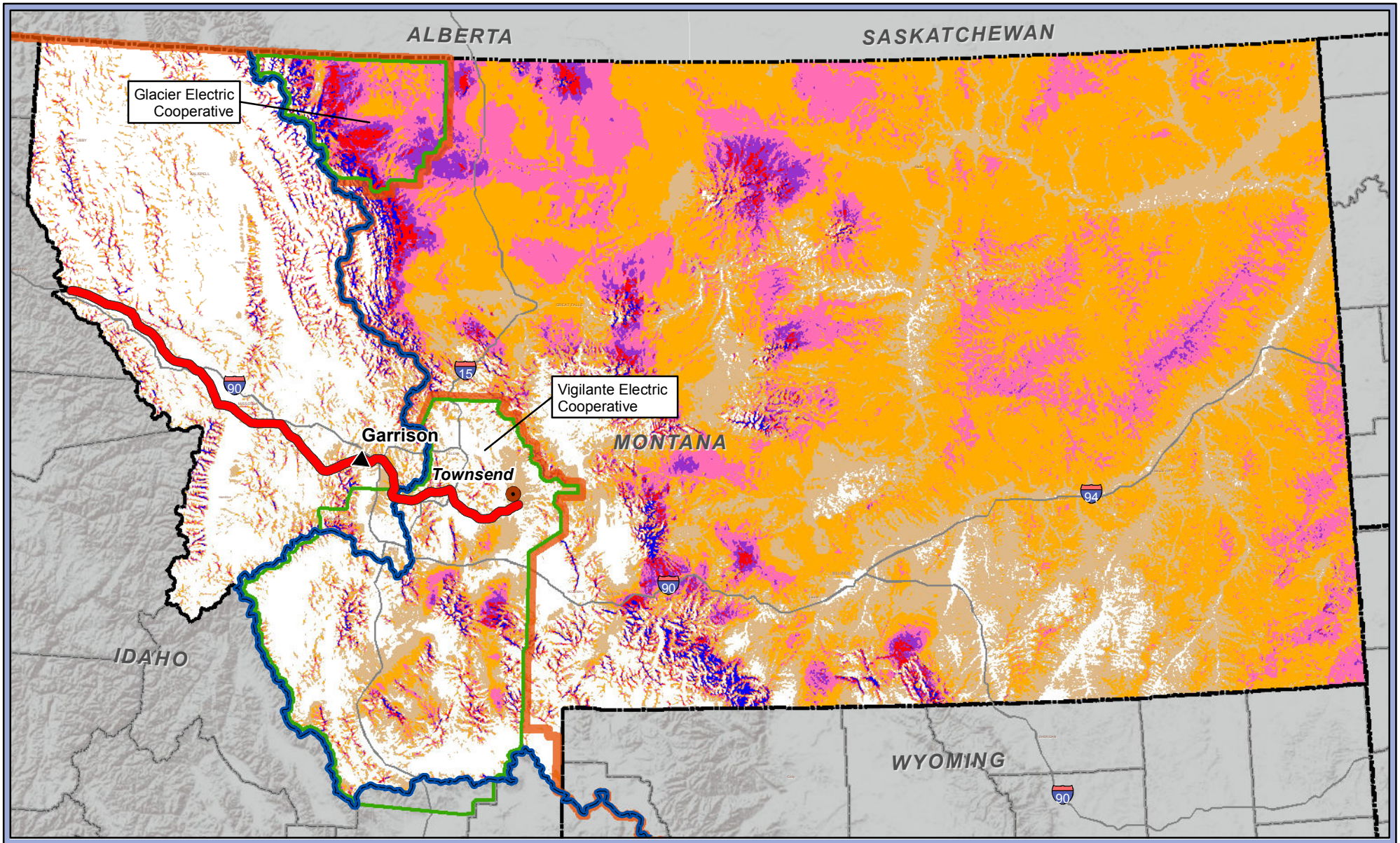
In addition, because it is unlikely that Montana wind generation would be in BPA's balancing authority area, it is unlikely that BPA would need to displace Montana wind generation with FCRPS generation during any oversupply conditions and pay Montana wind generators for the displacement.

Further, to the extent that any BPA transmission customers purchase Montana wind generation instead of wind generation near the Columbia River to meet RPS requirements or for other reasons, BPA's oversupply problems could be alleviated. There would likely be less wind generation in BPA's balancing authority area, and the Montana wind generation would use BPA's network at times that are not correlated with wind generation near the Columbia River. As stated in the BP-12 rate proceeding, "[t]here is significant diversity in wind patterns between Montana wind and wind in the BPA Balancing Authority Area near the Columbia River. … The wind in Montana is not positively or negatively correlated with the wind in the Gorge, they are simply not correlated." Fredrickson *et al.*, BP-12-E-BPA-48, at 7-8.

Finally, oversupply issues are being considered in a separate proceeding. WPAG and others should raise concerns about oversupply in that proceeding.

Q. Does this conclude your testimony?

A. Yes.



Wind Power Resource Potential (in meters/second)

Poor	0.0-5.6	Excellent	7.5-8.0
Marginal	5.6-6.4	Outstanding	8.0-8.8
Fair	6.4-7.0	Superb	>8.8
Good	7.0-7.5		

Source:
National Renewable Energy Laboratory
50-Meter Height Wind Resource Data.

- BPA Substation
- BPA 500-kV Transmission Line
- BPA Service Area Boundary
- Public Utility Service Area Boundary
- Continental Divide

N

0 25 50 75

Miles

March 11, 2013

Montana Wind Resources

BONNEVILLE POWER ADMINISTRATION

BP-14-E-BPA-46
Attachment 1
Page 1

W:\work\doug\Misc_projects\Wind\MXDs\WindMT_JoeD.mxd jhd

DATA REQUEST NUMBER TO REFERENCE:
JP10-RN-12

RESPONSE BY:
Cameron Yourkowski - Renewable Northwest Project

ORIGINAL DATA REQUEST:
For each asserted benefit, please identify each Montana municipality in which that benefit would accrue and the amount of that benefit. Please provide all documents, studies, data and analyses (in electronic form) that you performed or relied on in forming your opinion.

EXHIBIT: Direct Testimony of Renewable Northwest Project on Montana Intertie Rate BP-14-E-RN-02

PAGE(S): 9
LINE(S): 2-4

DATA RESPONSE: (NOTE: You MUST log in to the site in order to view any documents)
--UPLOADED DOCUMENTS:

https://www.bpa.gov/secure/RateCase/openfile.aspx?fileName=Wind+Development+Numbers+-+January+2013.xls&contentType=application%2fx-msexcel

--TEXT DESCRIPTION:
RNP objects to this request because it calls for new analysis. Without waiving the objection, RNP responds as follows:
See the attached spreadsheet, which includes some of the actual economic benefits of wind development in Montana, but is not an exhaustive analysis of all actual and potential benefits associated with Montana wind development.

For technical questions about this request please contact Cameron Yourkowski by phone (9716340143) or email (cameron@rnp.org)

Wind Energy Development and Economic Impact - updated Jan. 2013

Completed Wind Projects

Project	Capacity (MW)	Capital Investment (Million $)	Construction Jobs	Permanent Jobs	Project Year	County
Judith Gap	135	$203	200	12	2005	Wheatland
Horshoe Bend	9	$15	20	1.5	2006	Cascade
Martinsdale Colony	2.8	$5	10	0.5	2006	Wheatland
Diamond Willow	30	$45	100	4	2008	Fallon
Glacier Wind Farm	210	$550	486	40	2008	Glacier/Toole
Gordon Butte	9.6	$20	20	1	2012	Meagher
Rim Rock Wind Park	189	$400	300	20	2012	Glacier/Toole
Spion Kop	40	$86	100	4	2012	Judith Basin
Musselshell 1 (Shawmut)	10	$20	38	2	2012	Wheatland
Musselshell 2 (Shawmut)	10	$20	37	1	2012	Wheatland
Various Other Projects	1.5	$4	8	less than 1	Varies	
TOTAL EXISTING	646.9	$1,368	1319	86		

Wind Transmission Projects

Project	Trans. Capacity	Capital Investment (Million $)	Construction Jobs	Permanent Jobs
MATL	550-600 MW	$300	180	10

Total Wind and Transmission Impacts by End of 2012

Capacity (MW)	Capital Investment (M	Construction Jobs	Permanent Jobs
646.9	$1,668	1499	96

Glacier Wind Farm Jobs (example project)

Job Type	
Engineering	19
Direct Construction	206
Indirect Construction	80
Material Suppliers	181
Total	486

Source:NaturEner

Estimated Wind Tax Revenues by County*

Year	Toole	Glacier	Cascade	Fallon	Wheatland	Meagher	TOTAL
2006	NA	NA	NA	NA	$ 1,252,478.00	NA	$ 1,252,478.00
2007	NA	NA	$ 343,777.00	NA	$ 1,301,499.00	NA	$ 1,645,276.00
2008	NA	NA	$ 189,197.00	$ 73,159.00	$ 1,399,258.00	NA	$ 1,661,614.00
2009	$ 1,940,636.00	NA	$ 188,616.00	$ 79,653.00	$ 1,365,522.00	NA	$ 3,574,427.00
2010	$ 2,548,845.00	$ 1,159,889.00	$ 211,888.00	$ 81,369.00	$ 1,441,874.00	NA	$ 5,443,865.00
2011	$ 2,490,998.00	$ 1,031,327.92	$ 188,008.01	$ 87,671.65	$ 1,319,083.22	NA	$ 5,117,088.80
2012	$ 2,053,751.50	$ 902,766.84	$ 164,128.02	$ 93,974.30	$ 1,196,292.43	$ 110,344.00	$ 4,521,257.10
Totals	$ 9,034,230.50	$ 3,093,983.76	$ 1,285,614.03	$ 415,826.95	$ 9,276,006.65	$ 110,344.00	**$ 23,216,005.90**

Note: Judith Basin Counties had a project completed in FY 2013
2011 and 2012 FY were based on different data than years 2006-2010.
* estimates based on county response, not DOR

The Following DATA RESPONSE Has Been Issued:

DATA REQUEST NUMBER TO REFERENCE:
BPA-JP10-2

RESPONSE BY:
Irene Scruggs - Joint Party 10

ORIGINAL DATA REQUEST:
Please describe as specifically as possible all the contract terminations and modifications, as well as the threats of default, referenced in the testimony. Please explain why you think transmission contract terminations, modifications or defaults would be a risk for any upgrades needed to transmit Montana wind generation on the BPA network.

EXHIBIT: Direct Testimony of Joint Party 10 on Rates for Transmission Service Over the Eastern Intertie BP-14-E-JP10-01

PAGE(S): 9
LINE(S): 18-20

DATA RESPONSE: (NOTE: You MUST log in to the site in order to view any documents)
--UPLOADED DOCUMENTS:

https://www.bpa.gov/secure/RateCase/openfile.aspx?fileName=Response+to+BPA-JP10-2.pdf&contentType=application%2fpdf

https://www.bpa.gov/secure/RateCase/openfile.aspx?fileName=JP10A1-finance_risk_and_access_to_capital_072011.pdf&contentType=application%2fpdf

https://www.bpa.gov/secure/RateCase/openfile.aspx?fileName=JP10A2-2010_nos_decision_attachA.pdf&contentType=application%2fpdf

https://www.bpa.gov/secure/RateCase/openfile.aspx?fileName=JP10A3-cluster_study_summary_by_cluster_020411.pdf&contentType=application%2fpdf

For technical questions about this request please contact Nancy Baker by phone (5035959770) or email (nbaker@ppcpdx.org)

Response to BPA-JP10-2

DATA REQUEST NUMBER:
BPA-JP10-2

DIRECTED TO:
Joint Party 10

REQUESTOR'S NAME:
Scott Bruso - Bonneville Power Administration

EXHIBIT: Direct Testimony of Joint Party 10 on Rates for Transmission Service Over the Eastern Intertie BP-14-E-JP10-01

PAGE(S): 9
LINE(S): 18-20

DATA REQUEST: (NOTE: You MUST log in to the site in order to view any documents)
Please describe as specifically as possible all the contract terminations and modifications, as well as the threats of default, referenced in the testimony. Please explain why you think transmission contract terminations, modifications or defaults would be a risk for any upgrades needed to transmit Montana wind generation on the BPA network.

For legal questions about this request please contact Chuck Combs . Phone: (503.230.3560) Email: (chcombs@bpa.gov)

Response:

The cited testimony refers to the recent PTSA terminations and modifications that BPA offered to certain customers, including Iberdrola Renewables LLC, EDP Renewables North America LLC, and BP Wind Energy North America Inc., all of which are wind generation developers, as well as to the threat of default of PTSA customers. In 2011 BPA staff noted that 41 percent of the revenues expected from executed PTSA are attributable to non-investment grade PTSA-signatories with an expected default rate over 10 years of 25.10 percent. See BPA, *Network Open Season/Generator Interconnection Reform, NOS: Financial Issues & Risks* (July 20, 2011), p. 8-9. Our understanding is that BPA received inquiries into the prospect of terminating or modifying PTSAs from PTSA-signatories other than the three parties listed above. Defaults, terminations and modifications all present a risk to BPA of under-recovery of revenue expected to support the construction of new transmission facilities with forecasted, limited upward Network rate pressure. Defaults are particularly troubling risk because BPA may likely have no recourse against a customer with no assets and no parent corporation or affiliate with any legal responsibility for the transmission sales agreement.

Our understanding is that the importation of more than approximately 550 MW of wind energy from eastern Montana would require BPA to construct the GASH project, whose cost is estimated to approach $1 billion. See e.g., BPA, *2010 Network Open Season Decision*, Att. A; BPA, *2010 NOS Cluster Study Summary by Cluster*, Feb. 4, 2011. The construction of large,

expensive transmission facilities to permit BPA to grant transmission requests to developers incorporated as limited-liability corporations or to non-investment grade developers creates a risk that of default and a resulting under-recovery of revenues. The fact that a customer agrees to pay an incremental cost for use of the new transmission facility does not prevent unrecovered costs from being recovered in the Network rates. Were the IM rate to be eliminated and that capacity included in the Network segment, we believe that BPA would proposed to recover that revenue shortfall through the Network segment rates, which would see upward rate pressure and ultimately rate increases.

Network Open Season/Generator Interconnection Reform

July 20, 2011

NOS: Financial Issues & Risks

Issues and Risks

- Issue: Access to capital
  - The Agency has capital constraints that would be exacerbated by additional, currently unplanned commercial projects
- Issue: Uncertainty as to the timing and degree of expansion of new resources into our balance authority
  - Stranded Investment Risk: Ensure that builds are in the right place at the right time
- Issue: Financial risks associated with PTSA and TSA contract performance
  - Performance risk associated with all classes of customers is higher given the lingering effects of the financial crisis (high unemployment, sluggish GDP growth, volatile capital markets)
- Due to these perceived risks, should BPA consider alternate sources of funding in the NOS process?
- Should BPA consider other changes, such as changes to the Performance Assurance amount and requirements?

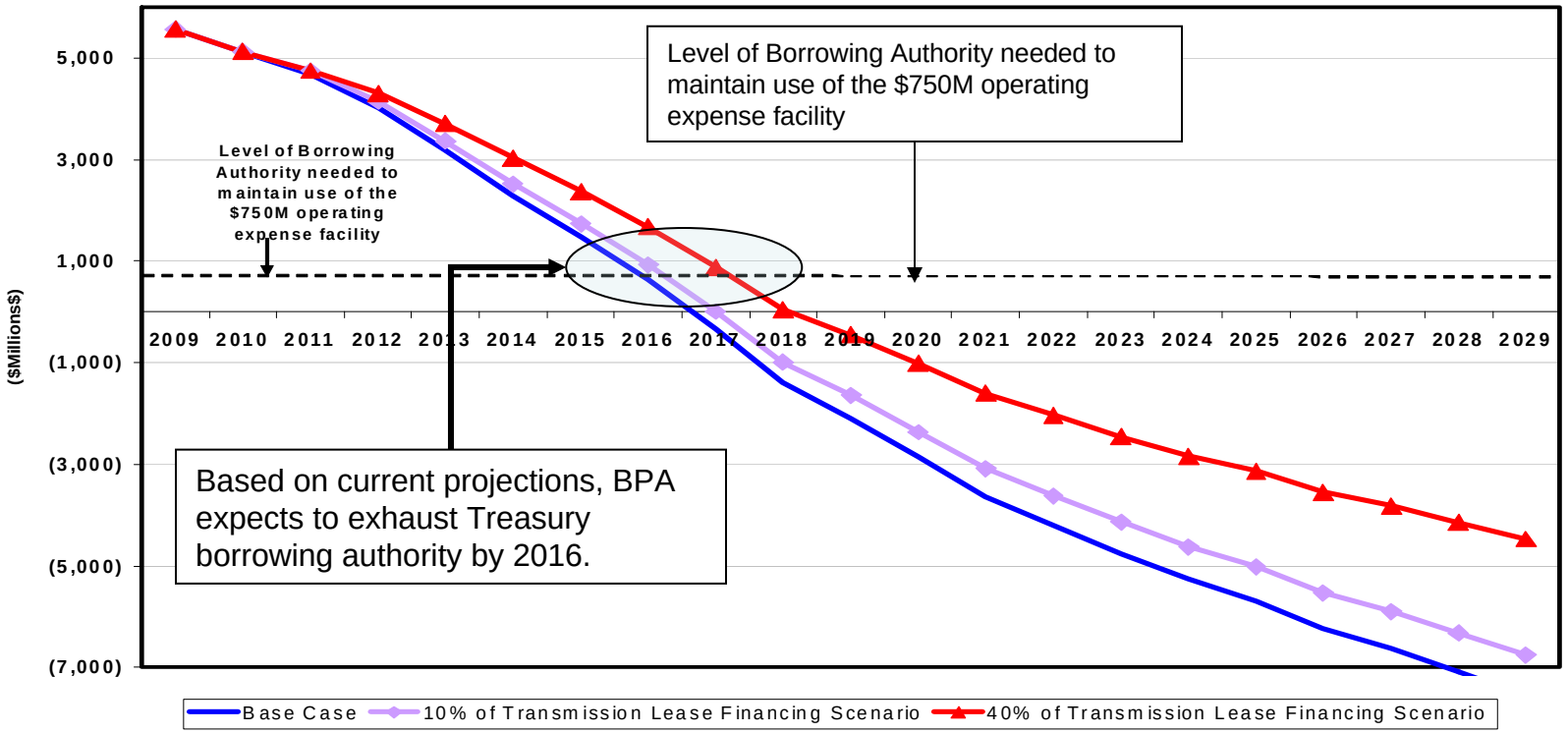
Access to Capital

- BPA has limited borrowing authority
  - BPA borrowing authority is used for transmission expansion, Fish & Wildlife, energy efficiency, and FCRPS expansion
  - Transmission Services must preserve sufficient access to capital for reliability projects
- NOS reform must recognize limited future access to capital

Access to Capital

- Based on current projections, BPA expects to exhaust Treasury borrowing authority by 2016
  - What does this mean to BPA?
  - What does this mean to the region?
- Capital will be discussed further at Customer Workshops in September

BPA Access to capital



- **Chart data are consistent with the capital from the May 2010 IPR update**
- **All capital categories that were lapsed for the May 2010 IPR update (Federal Hydro, Construction, Environment, and all Corporate except for IT) were lapsed for the 20 year period for this analysis (15% lapse factor)**
- **$15M of reserve financing for Transmission was assumed for each of the 20 years of the analysis**
- **Assuming that BPA reserves $750 million of borrowing authority in order to maintain access to the operating expense liquidity facility, Treasury borrowing authority could expire as early as:**

Base Case	10% Lease Financing Scenario	40% Lease Financing Scenario
2016	2017	2018

Project Timing Uncertainty

- Misalignment between when resources are ready to come online and when the transmission infrastructure and/or generation interconnection facilities can be completed

- Stranded Investment Risk *
  - Wrong location
  - Wrong time
    - Ahead or Behind need
  - Wrong plan of service
    - Building for resources that don't transpire
- Default risk

* BPA is less concerned about stranded investment risk for NOS projects already under construction, which are primarily being built for load service.

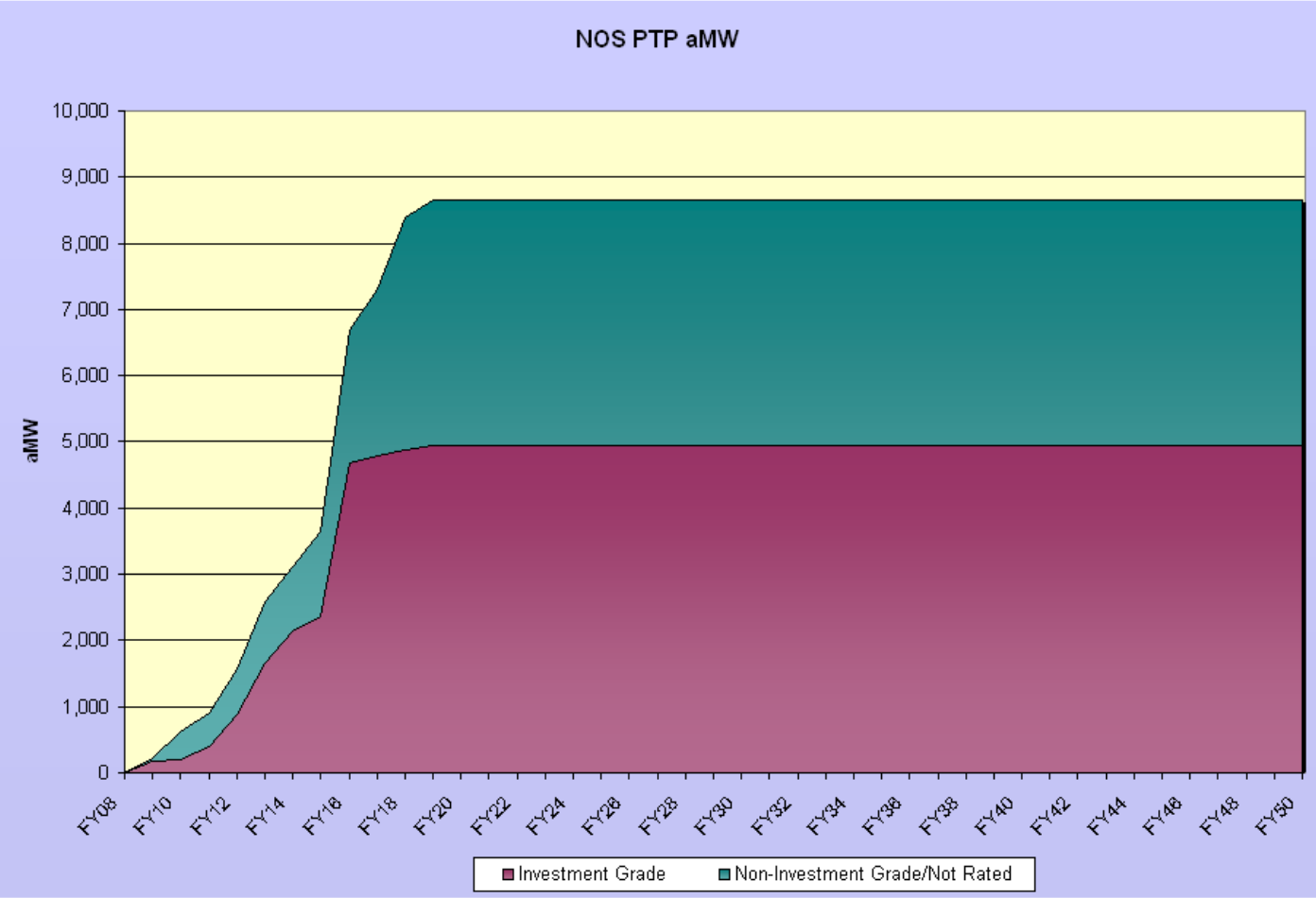
PTSA Financial Risks

- Transactional Risks: Customer defaults; speculative requests
  - Should customers be responsible for NEPA, engineering or other costs upon default?
  - Should customers forfeit performance assurance upon default?
  - Should customers deferral right related build be limited or charged a different rate?
- Rate Impact Risks: Financing costs
  - Should we use other financing sources?

PTSA Risk Profile

- 41% of the potential revenues are from non-investment grade (based on S & P) participants
- 59% of the potential revenues are from investment grade (based on S & P) participants
- As we continue to reform the NOS process, we may see the risk profile change for NOS participants

What is the Risk Profile of NOS Customers?



	# Customers	MWs	Share of PTP MW	Default Probability 1 yr [1]	5 yr [1]	10 yr [1]	15 [1]
Investment Grade	14	5,115	59%	0.13%	1.21%	2.68%	3.83%
Non-Investment Grade / Not Rated	11	3,605	41%	4.36%	17.48%	25.16%	29.40%

Possible Alternatives

- Work collaboratively with stakeholders to appropriately allocate risks (stranded cost risk, default risk, etc.)

- To the extent that BPA's capital is constrained, develop alternative methods of funding NOS expansion projects (lease-financing where applicable, customer funding, revenue financing, etc.)

ATTACHMENT A
Rationale Supporting Determination of Rate Treatment Applicable to
Projects Under the 2010 Network Open Season

Bonneville Power Administration's (BPA) decision regarding which of the 2010 Network Open Season (NOS) Precedent Transmission Service Agreements (PTSA) and associated Transmission Service Requests (TSRs) may reasonably be offered service at rolled-in transmission rates is a key milestone in the NOS process. As explained below, BPA has decided that 1,522 MW of TSRs in the 2010 NOS should continue to move forward at rolled-in rates, because BPA could provide service for those requests with construction of the projects moving forward as a result of the 2008 NOS. An additional 113 MW of TSRs are moving forward because BPA can provide service without new facilities or with new facilities that BPA has already decided to construct for reliability purposes. The remaining TSRs require new reinforcements identified in the 2010 NOS Cluster Study (Cluster Study). BPA is moving the Northern Intertie Reinforcements forward at rolled-in rates, subject to the caveats that further discussion is required regarding the upgrades required on adjacent systems, BPA and the adjacent transmission owners must reach agreement on system upgrades and cost allocation, and BPA would not plan to proceed with construction of the Northern Intertie Reinforcement without a clear path forward on both the Big Eddy-Knight project, which is part of West of McNary Reinforcement, and the I-5 Corridor project. BPA also is moving forward at rolled-in rates with the Colstrip Upgrade Project West (CUP West), but it is delaying its determination of which specific TSRs will move forward under that project. Determining the specific TSRs that would move forward under CUP West requires an additional study that is expected to be completed in the next three to six months and establishment of remedial action schemes that require additional discussion with customers. Finally, a final decision on whether to proceed with construction of either the Northern Intertie Reinforcements or CUP West is contingent upon completion of the NEPA processes for these projects.

Background

BPA announced the 2010 NOS process in a notice to customers on May 11, 2010,[1] and the 2010 NOS commenced on June 1, 2010. The deadline to submit TSRs to participate was June 30, 2010. The structure of the 2010 NOS is essentially the same as that of the 2008 and 2009 NOS.[2] The NOS combines a requirement that customers sign a PTSA to participate with a cluster study of participating TSRs. In order for customers with eligible TSRs to participate in the 2010 NOS, they were required to sign PTSAs and satisfy other requirements by August 18, 2010.

[1] A copy of the letter is available at: http://transmission.bpa.gov/Customer_Forums/open_season_2010/2010_NOS_Announcement.pdf.
[2] Please refer to the 2008 NOS Decision Letter for a description of the circumstances that led to the 2008 NOS, the structure of the NOS process, and the 2008 NOS rolled-in rates decisions. The 2009 NOS Decision Letter describes the 2009 NOS rolled-in rates decisions.

BPA offered 121 PTSAs to customers with eligible TSRs representing approximately 7,304 MW of service. Customers signed and met other requirements for 76 of those PTSAs for a total of 3,759 MW.

Cluster Study Results

BPA included the TSRs for which customers signed PTSAs in the Cluster Study to determine the system reinforcements, if any, required to provide service. The Cluster Study included three primary elements. First, BPA used its ATC Methodology to identify for each PTSA the impact to each monitored flow gate and other areas of the transmission system to determine if the TSR could be served by the current infrastructure. BPA also performed sub-grid assessments to consider impacts on other facilities on the system that are not included in the monitored flow gates. As a result of these analyses, BPA determined that six TSRs, representing 53 MW, could be authorized with no further system reinforcements beyond any requirements identified in the generator interconnection studies.

If BPA determined that the transmission system lacked flowgate capacity or if sub-grid impacts violated reliability limits for a particular request, BPA deemed that system reinforcements were necessary. BPA determined that 25 TSRs, representing 1,522 MW, could be provided service with the projects moving forward at rolled-in rates as a result of the 2008 NOS. Those projects include:

1. McNary-John Day Reinforcement
2. Big Eddy-Knight Reinforcement (in combination, the McNary-John Day Reinforcement and the Big Eddy-Knight Reinforcement are known as the West of McNary Reinforcements (WOMR)
3. I-5 Corridor Reinforcement
4. Central Ferry-Lower Monumental Reinforcement (CF-LOMO)

As the second element of the Cluster Study, BPA grouped the requests that were deemed to need additional system reinforcements into study areas based on electrical proximity and the other impacts described above. For each group of PTSAs for a study area, BPA studied the requests and identified or developed a plan of service for the required system reinforcements. BPA identified or developed plans of service for the following study areas:

1. Northern Intertie Reinforcements (includes upgrades in several areas of the Northern Intertie)
    a. Northern Intertie East (NIE) North to South Reinforcements
    b. Northern Intertie East (NIE) South to North Reinforcements
    c. Northern Intertie West (NIW) North to South Reinforcements
    d. Northern Intertie West (NIW) South to North Reinforcements

2. Colstrip Upgrade Project West[3] (CUP West)
3. Garrison-Ashe Project (GASH)
4. Central Oregon Reinforcement Project (CORP) and Redmond Transformer (REDM)

The following table shows the number of PTSAs and amount of associated MW for each project or combination of projects needed to provide the requested service. Note that many of the TSRs require more than one upgrade and some require a combination of upgrades identified in the 2008 NOS and the 2010 NOS.

Group	TSRs	Demand
Authorize	6 TSRs	53 MW
REDM	1 TSRs	20 MW
REDM, CORP	1 TSRs	40 MW
I-5, WOMR	1 TSRs	33 MW
WOMR	24 TSRs	1,489 MW
CF-LOMO, GASH	16 TSRs	530 MW
GASH	1 TSRs	14 MW
CUP West, CF-LOMO	13 TSRs	480 MW
I-5, WOMR, CF-LOMO, NIE: North-South	2 TSRs	100 MW
I-5, WOMR, CF-LOMO, NIE: North-South, CUP West	1 TSRs	75 MW
I-5, WOMR, NIW: North-South	9 TSRs	825 MW
NIE: South-North, CUP West	1 TSRs	50 MW
WOMR, NIW: South-North	1 TSRs	50 MW

More detailed information on the specific TSRs in each group is posted on BPA's website at: http://transmission.bpa.gov/Customer_Forums/open_season_2010/cluster_study_summary_by_cluster_020411.pdf.

For the third step of the Cluster Study, once BPA completed the technical studies, it added the proposed projects to a 2016 ATC base case and confirmed that the projects allowed BPA to provide the requested service.

[3] BPA, NorthWestern Energy, Avista, and the Colstrip Parties commissioned a joint exploratory study, the Colstrip 500 kV Upgrade Exploratory Study, in 2009. The upgrades that comprise CUP WestCUP WestCUP West were first identified in that joint study.

Direct Assignment Determination

PTSA section 5(a)(3) provides that "all Expansion Facilities resulting from the Cluster Study are subject to a determination of Direct Assignment of costs." All plans of service and system reinforcements identified in the Cluster Study as necessary to provide service to TSRs are subject to a determination of whether costs of the system reinforcements should be directly assigned to the applicable customer(s). Plans of service that are determined to be directly assigned to the customer are excluded from consideration for rolled-in rate treatment under the Commercial Infrastructure Financing Analysis (CIFA) pursuant to PTSA section 5(b).

In the 2010 NOS, BPA determined that none of the identified reinforcements are appropriate for direct assignment to the customer(s) whose TSR(s) require the plan of service. This determination was based on the technical attributes of the plan of service and on BPA's policies, including its Guidelines for Direct Assignment Facilities.[4]

Rolled-In Rate Determination

PTSA section 5(c) states that BPA will evaluate the projected costs and benefits of proposed expansion facilities consistent with the CIFA to determine "in its discretion whether Transmission Service can reasonably be provided under the applicable PTP or NT rate schedule (Bonneville's 'rolled-in' or 'embedded' rate)."[5] The CIFA allows BPA to rely on its previous analysis for purposes of evaluating facilities that have already moved forward in a previous NOS process or that BPA has already decided to construct independent of NOS. As explained below, BPA's determination regarding the TSRs that require 2008 NOS projects and the Central Oregon reliability upgrades relies on BPA's previous analysis and decision regarding those projects.

To estimate the rate pressure for new upgrades that Cluster Study identifies as necessary, BPA performed a net present value analysis (NPV) of the costs of the two projects, including the revenues received from the NOS TSRs that would receive service over each project. For the NPV analysis, BPA assumed no increase in current embedded cost rates to recover additional project costs and assumed an average annual 1% embedded cost rate increase representing normal rate increases over time.

[4] The Guidelines for Direct Assignment Facilities are posted at http://www.transmission.bpa.gov/includes/get.cfm?ID=827.

[5] The Commercial Infrastructure Financing Analysis (CIFA) is posted at: http://www.transmission.bpa.gov/customer_forums/open_season_2009/. The CIFA is referred to as the "Commercial Infrastructure Financing Proposal" in the PTSA.

The NPV analysis assumed the following direct project costs from the Cluster Study:

Project-Description	Estimated Total Direct Cost ($M)
Northern Intertie Reinforcement Total	$70.7
Colstrip Upgrade Project West Total	$115.4
Garrison to Ashe Project Total	$943.5
All 2010 NOS Projects	$1129.6

The NPV analysis was organized as follows: 1) each project and the service associated with the project were individually evaluated as an independent capital project; 2) all projects necessary to provide service to the applicable PTSA customers were evaluated; and 3) evaluations were performed for several scenarios identified in the Cluster Study.

The following are the base point assumptions used in the NPV and rate analysis modeling:

- Discount rate of 9%.
- Overhead rate for NPV of $2 million per project per construction year.
- Overhead rate for rate pressure analysis only of 23%.
- 1% rate increase per year.
- 1.67% inflation rate.
- Any reliability benefits identified in the Cluster Study of the expansion projects would be taken into account.
- Revenues begin at the start of the year after completion of expansion facilities.
- No revenues were assessed for redirect requests or NT requests.
- PTSAs were assumed to roll over for the life of the expansion facilities (all PTSAs have duration of more than five years).
- Project cost and revenues not adjusted for risk.
- Revenues from PTSAs for which service can be provided without new facilities (53 MW) were not included in the NPV analysis but were included in the determination of rate pressure.

1) 2010 NOS TSRs Requiring 2008 NOS Projects

The Cluster Study determined that BPA could provide service for 25 TSRs, representing 1,522 MW, received during the 2010 NOS process with the projects that moved forward at rolled-in rates in the 2008 NOS. For purposes of the evaluation under the PTSA and CIFA for those 2010 NOS TSRs, BPA relied on its evaluation of those projects for the rolled-in rate determination for the 2008 NOS, and did not revisit all of the assumptions and information underlying that decision. Due to the additional revenues associated with the 2010 NOS TSRs

and the effect of those revenues, the estimated rate pressure associated with the 2008 NOS projects should decrease over a 20 year period. The 2010 NOS TSRs that require the projects that already moved forward at rolled-in rates provide additional benefit and justification for those projects, and those 2010 TSRs will move forward at rolled-in rates.

In addition, cluster studies show that 13 of the 14 TSRs that would be accommodated by the Northern Intertie Reinforcement (1050 out of 1100 MW) also require completion of at least one of the 2008 NOS projects currently undergoing separate environmental reviews under the National Environmental Policy Act (NEPA). If, as a result of these reviews or other considerations, there is no decision to build these two 2008 NOS projects, the 2010 NOS projects would not provide all of the expected benefits. Therefore, BPA is reasonably requiring that the review processes for these 2008 NOS projects are complete before making a decision to proceed with construction of the Northern Intertie Reinforcement. BPA is diligently pursuing all NOS 2008 projects.

2) TSRs Requiring Central Oregon Reliability Upgrades

The Cluster Study also identified two TSRs for a total of 60 MW that could be granted service once BPA completes reliability upgrades that are already in progress in Central Oregon. Because these two projects (the Redmond Transformer and the Central Oregon Reinforcement Project) are currently under way and are moving forward for reliability reasons unrelated to NOS, these two TSRs will move forward at rolled-in rates as well.

3) TSRs Requiring Northern Intertie Reinforcements

The Cluster Study determined that the Northern Intertie Reinforcements without CUP West would serve 12 TSRs with a combined 975 MW of service. The revenues from the TSRs (850 MW of original PTP requests) and megawatt demand that the projects would serve, combined with the estimated project costs, resulted in a positive NPV and should result in downward pressure on network transmission rates over a 20-year period. While this represents only one of many factors that might impact rates in future years, this downward rate pressure is within the rate pressure range that was generally considered acceptable in the 2008 NOS, and suggests that the project is worth pursuing.[6]

The Northern Intertie Reinforcements require upgrades on other transmission providers' systems, which is a unique situation that BPA has not faced in previous NOS processes. BPA does not control the costs or schedule of those upgrades, which raises questions about whether such requests appropriately fall within the scope of a NOS process focused on defining the facilities on BPA's network that would be required to provide the requested service. The situation leaves BPA with at least two obvious options: 1) do not move forward with the reinforcements at rolled-in rates in NOS and address the need for third-party upgrades under the

[6] The range of rate pressure that was generally considered acceptable in the 2008 NOS was based on customer comment. Please refer to the 2008 NOS decision documents, posted at http://www.transmission.bpa.gov/customer_forums/open_season/.

non-NOS provisions of BPA's OATT; or 2) move forward with the reinforcements at rolled-in rates but recognize that successful completion of additional discussions regarding construction of and cost responsibility for the upgrades will be needed prior to making a decision to build.

The challenges associated with the upgrades on third-party systems create uncertainty for BPA and customers, but BPA believes that the commercial analysis and potential benefits of completing the Northern Intertie Reinforcements support a decision to move forward with the project at this time. BPA's decision to move forward at this time is subject to the caveat that the ultimate decision to build the facilities depends on, among other things, the willingness of other transmission providers to construct upgrades on adjacent systems and the outcome of discussions about cost responsibility for the upgrades on other systems. The time that the PTSA allows for BPA to complete the environmental studies prior to the decision whether to build should provide BPA, customers, and adjacent transmission providers an opportunity to resolve these challenges.

4) TSRs Requiring CUP West and Garrison-Ashe

The Cluster Study included approximately 1249 MW of TSRs that impacted either the West of Garrison or West of Hatwai paths on the eastern part of BPA's network. Providing service for all of these requests would require construction of some combination of the Garrison-Ashe line, CUP West, and establishment of remedial action schemes (RAS) for the generators associated with the TSRs. With respect to the Garrison-Ashe line, the Cluster Study estimated direct costs of approximately $1 billion. The CIFA estimated that the upward rate pressure associated with Garrison-Ashe would be approximately 14.7% over 20 years (based on 1024 MW of original PTP requests). This is well above the acceptable level of rate pressure, and Garrison-Ashe is not moving forward at rolled-in rates for that reason.

The 2010 NOS Cluster Study assumed that construction of CUP West and implementation of RAS requirements (without the Northern Intertie Reinforcements) could potentially serve 13 TSRs with a combined 480 MW across West of Garrison or West of Hatwai. CUP West was first identified in an exploratory study commissioned by BPA, NorthWestern Energy, and Avista Corporation in 2009 to evaluate upgrades to existing facilities to increase transfer capability from the Colstrip Generating Facility to the Northwest. The study is nearing completion, and the 2010 NOS Cluster Study incorporated the CUP West plan of service as a means of serving some 2010 NOS TSRs.

The estimated direct cost of CUP West is approximately $115 million, which would result in an estimated upward rate pressure of 0.77% over 20 years (assuming service to the 480 MW identified above and construction of the Central Ferry-Lower Monumental line). Based on these assumptions, the rate pressure falls within the acceptable range of 2.0% used in previous NOS processes. This suggests the project is worth pursuing at rolled-in rates, particularly given that the upgrades were first identified in the joint, multi-year study intended to assess needs that are independent of NOS. As explained below, considering CUP West in conjunction with the Northern Intertie results in less upward rate pressure.

Although BPA is proceeding to the next stage with CUP West at rolled-in rates, it is delaying its determination of which specific TSRs will be included under the project. Completion of additional studies and establishment of RAS is necessary to more definitely determine the amount of capacity associated with the project. The final phase of the Colstrip exploratory study is completion of a sub-synchronous resonance study to assess whether CUP West would result in damage to the Colstrip generating units or have other reliability impacts. The manufacturer of the Colstrip generating units, General Electric Corporation, must complete this study, and it is expected to take three to six months. The results of this study are not expected to reduce the amount of service associated with CUP West which includes 530 MW over West of Garrison and an additional 75 MW over West of Hatwai assumed in the Cluster Study, but it is possible that the study could uncover something unexpected. BPA needs the results of the sub-synchronous resonance study before determining the specific amount of TSRs (in MW) that will move forward under CUP West.

The Cluster Study assumes that the generators associated with the TSRs requiring CUP West must be subject to RAS for CUP West to result in any capacity to provide service to those TSRs. Development of RAS will require identifying the generator associated with each TSR and ensuring that the customer meets the requirements for an effective protective scheme. Without knowing the generator associated with each TSR and that the generator is subject to RAS, BPA is unable to determine that construction of CUP West would result in capacity to provide the service for a particular TSR. BPA is unable to determine which specific TSRs should be included under CUP West under these circumstances.

The time required to complete the sub-synchronous resonance study provides BPA and customers the opportunity to address the RAS requirement before BPA determines the rate treatment for individual TSRs. BPA expects to work with customers during the next three to six months to address the RAS requirement. Given that BPA is delaying its final determination regarding which specific TSRs will be included under CUP West, the PTSA provides the customer with these TSRs a limited period of time to terminate the PTSA. If customers terminate PTSAs or the remaining study indicates that CUP West will result in less capacity than BPA assumed in the Cluster Study, BPA will take those factors into account in making those final decisions.

5) Combination of Northern Intertie Reinforcements and CUP West

The CIFA estimates direct capital costs of approximately $186 million associated with construction of both the Northern Intertie Reinforcements and CUP West. Constructing both projects allows additional offers for 125 MW that could not be offered by completion of either project individually. Based on these assumptions, moving forward with both projects at rolled-in rates would result in downward rate pressure over 20 years of approximately -0.7%. This falls within the range that BPA and customers have considered acceptable in the past.

6) Capital Access Concerns Related to 2010 NOS projects

BPA has not included the nearly $200 million of capital investments related to the 2010 NOS projects in its recent planning assumptions for capital availability. BPA is concerned about capital availability and is planning a regional discussion on access to capital later this year. The decision to proceed with construction of the 2010 NOS projects will take into account the outcome of the regional access to capital discussion.

Additional information on the 2010 NOS process including all public summaries of results or recommendations can be found at:
http://transmission.bpa.gov/Customer_Forums/open_season_2010/

Bonneville Power Administration
Transmission Services

2010 NOS Cluster Study Summary by Cluster

February 4, 2011

Customer	AREF	Source	Demand
Authorize		**6 TSRs**	**53 MW**
PacifiCorp†	73437624	PONDEROSA500	20 MW
Bonneville Power Administration	73634532	DUCKABUSH115	2 MW
Public Utility District No 1 of Clallam	74520615	LEWISNTDP	3 MW
Mason County PUD	74520856	LEWISNTDP	3 MW
Clark Public Utilities	74412889	ALCOA115CLAR	20 MW
Clark Public Utilities	74412892	SILVRCRK69PKWD	5 MW
CFRY-LOMO, CUP (West)		**13 TSRs**	**480 MW**
PWX	73359301	GARRISON230	50 MW
Gaelectric, LLC	73945287	GARRISON230	50 MW
Gaelectric, LLC	73945297	GARRISON230	50 MW
Gaelectric, LLC	73945317	GARRISON230	50 MW
Gaelectric, LLC	73945452	GARRISON230	25 MW
Gaelectric, LLC	73945478	GARRISON230	25 MW
Gaelectric, LLC	73945495	GARRISON230	15 MW
Gaelectric, LLC	73945507	GARRISON230	15 MW
Gaelectric, LLC	73945543	GARRISON230	50 MW
Gaelectric, LLC	73945567	GARRISON230	50 MW
Gaelectric, LLC	73945582	GARRISON230	50 MW
Gaelectric, LLC	73945596	GARRISON230	25 MW
Gaelectric, LLC	73945627	GARRISON230	25 MW
CFRY-LOMO, GASH		**16 TSRs**	**530 MW**
Gaelectric, LLC	73945637	GARRISON230	15 MW
Gaelectric, LLC	73945645	GARRISON230	15 MW
Gaelectric, LLC	73949544	GARRISON500CLS	50 MW
Gaelectric, LLC	73949568	GARRISON500CLS	50 MW
Gaelectric, LLC	73949767	GARRISON500CLS	50 MW
Gaelectric, LLC	73949776	GARRISON500CLS	25 MW
Gaelectric, LLC	73949785	GARRISON500CLS	25 MW
Gaelectric, LLC	73949801	GARRISON500CLS	25 MW
Gaelectric, LLC	73949807	GARRISON500CLS	25 MW
Gaelectric, LLC	73950004	GARRISON500CLS	50 MW
Gaelectric, LLC	73950013	GARRISON500CLS	50 MW
Gaelectric, LLC	73950023	GARRISON500CLS	50 MW
Gaelectric, LLC	73950027	GARRISON500CLS	25 MW
Gaelectric, LLC	73950032	GARRISON500CLS	25 MW
Gaelectric, LLC	73950038	GARRISON500CLS	25 MW
Gaelectric, LLC	73950044	GARRISON500CLS	25 MW
GASH		**1 TSRs**	**14 MW**
Avista Corporation	74364914	GARRISON500CLS	14 MW

Customer	AREF	Source	Demand
I-5Project, WOMR		**1 TSRs**	**33 MW**
PPM Energy, Inc.	73658753	LONGVW230COWL	33 MW
I-5 Project, WOMR, CFRY-LOMO, NI (East): North-South		**2 TSRs**	**100 MW**
PWX	73199072	USCNDNBDRE230	50 MW
PWX	73199075	USCNDNBDRE230	50 MW
I-5 Project, WOMR, CFRY-LOMO, NI (East): North-South, CUP (West)		**1 TSRs**	**75 MW**
PWX	73297674	USCNDNBDRE230	75 MW
I-5 Project, WOMR, NI (West): North-South		**9 TSRs**	**825 MW**
PWX	73199071	USCNDNBDRW500	50 MW
PWX	73199074	USCNDNBDRW500	50 MW
PWX	73299780	USCNDNBDRW500	125 MW
PWX	74403811	USCNDNBDRW500	100 MW
PWX	74403813	USCNDNBDRW500	100 MW
PWX	74403815	USCNDNBDRW500	100 MW
PWX	74403818	USCNDNBDRW500	100 MW
PWX	74403820	USCNDNBDRW500	100 MW
PWX	74403822	USCNDNBDRW500	100 MW
NI (East): South-North, CUP (West)		**1 TSRs**	**50 MW**
PWX	73199076	GARRISON230	50 MW
Redmond 230/115 kV Transformer		**1 TSRs**	**20 MW**
PacifiCorp†	73437624	PONDEROSA500	20 MW
Redmond 230/115 kV Transformer, Ponderosa 500/230 kV Transformer		**1 TSRs**	**40 MW**
PacifiCorp	74411012	PONDEROSA500	40 MW
WOMR		**24 TSRs**	**1,489 MW**
PPM Energy, Inc.	73280124	KLONDIKESH230	50 MW
Public Utility District No 1 of Lewis Co	73322570	FCRPS	6 MW
Cowlitz County PUD	73840965	ROCKCREEK230	29 MW
Cowlitz County PUD	74024843	ROCKCREEK230	4 MW
Swaggart Energy Transmission, LLC	74300041	McNary 500	50 MW
Swaggart Energy Transmission, LLC	74300044	McNary 500	50 MW
Swaggart Energy Transmission, LLC	74300047	McNary 500	50 MW
Swaggart Energy Transmission, LLC	74300051	McNary 500	50 MW
Swaggart Energy Transmission, LLC	74300055	McNary 500	50 MW
Swaggart Energy Transmission, LLC	74300082	McNary 500	50 MW
Diversified Energy Transmission LLC	74404387	McNary 500	50 MW
Diversified Energy Transmission LLC	74404390	McNary 500	100 MW
Diversified Energy Transmission LLC	74404392	McNary 500	50 MW
Diversified Energy Transmission LLC	74404394	McNary 500	100 MW
Diversified Energy Transmission LLC	74404396	McNary 500	50 MW
Diversified Energy Transmission LLC	74404399	McNary 500	100 MW
Diversified Energy Transmission LLC	74404401	McNary 500	50 MW

Customer	AREF	Source	Demand
Diversified Energy Transmission LLC	74404404	McNary 500	100 MW
Diversified Energy Transmission LLC	74404409	McNary 500	100 MW
Diversified Energy Transmission LLC	74404414	McNary 500	100 MW
PPM Energy, Inc.	74407694	Rock Creek 500	50 MW
PPM Energy, Inc.	74407698	Rock Creek 500	50 MW
PPM Energy, Inc.	74412693	Slatt 500	100 MW
PPM Energy, Inc.	74412731	Slatt 500	100 MW
WOMR, NI (West): South-North		**1 TSRs**	**50 MW**
PWX	73199078	ROCKCREEK230	50 MW

† – Full TSR is for 40 MW. Cluster Study findings support a partial offer of service for 20 MW.