



January 17, 2014

Ms. Kate Whitney  
Montana Public Service Commission  
1701 Prospect Avenue  
P.O. Box 202601  
Helena, MT 59620-2601

RE: Docket No. D2013.12.85  
PPLM Hydro Assets Purchase  
PSC Set 1 Data Requests (001-035)

Dear Ms. Whitney:

Enclosed for filing is a copy of NorthWestern Energy's responses to select data requests as listed below from PSC Set 1. A hard copy will be mailed to the most recent service list in this Docket this date. The Montana Public Service Commission and the Montana Consumer Counsel will be served by hand delivery this date. These data responses will also be e-filed on the PSC website and emailed to counsel of record.

PSC-001	PSC-027	PSC-034
PSC-012b	PSC-029	
PSC-015	PSC-030	
PSC-016 d & e	PSC-031	
PSC-018	PSC-032	

Should you have questions please contact Joe Schwartzberger at 406 497-3362.

Sincerely,

Nedra Chase  
Administrative Assistant  
Regulatory Affairs

NC/nc  
CC: Service List

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of NorthWestern Energy's responses to select data requests in PSC Set 1 which are data request numbers PSC-001, PSC-012(b), PSC-015, PSC-016 (d & e), PSC-018, PSC-027, PSC-029, PSC-030, PSC-031, PSC-032 & PSC-034 in Docket D2013.12.85, the PPLM Hydro Assets Purchase, has been hand delivered to the Montana Public Service Commission and to the Montana Consumer Counsel this date. They will be e-filed on the PSC website and served on the most recent service list by mailing a copy thereof by first class mail, postage prepaid. They will also be emailed to counsel of record.

Date: January 17, 2014



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Nedra Chase  
Administrative Assistant  
Regulatory Affairs

**Docket No D2013.12.85**  
**Hydro Assets Purchase**  
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**NorthWestern Energy  
Docket D2013.12.85  
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)  
Set 1 (001-035)**

**Data Requests served December 27, 2013**

PSC-001      Regarding:      Confidential Information Memorandum  
                 Witness:          Rowe

Please provide the Seller's Confidential Information Memorandum referred to at TEM-7:13-14 and on JMS:7 and JMS:14. If NWE believes a new Protective Order is necessary for this material, please provide, simultaneously with a Motion for Protective Order by the response deadline, a redacted copy of the CIM that includes that information for which protection is not sought.

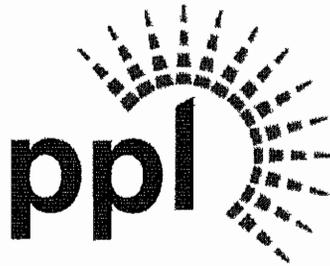
RESPONSE (January 17, 2014):

On January 10, 2013, NorthWestern filed two motions for protective order regarding certain information contained within the Seller's Confidential Information Memorandum (CIM). A redacted public version of this CIM was provided with both motions, and it is attached here as well.

NorthWestern will update this response by providing this information in the appropriate format after the Commission rules on the motions for protective order.

In the event that the Commission does not grant the protective orders sought by NorthWestern, NorthWestern objects to the question to the extent the request seeks information that is irrelevant, outside the reasonable scope of this proceeding, and not calculated to lead to the discovery of admissible evidence; to the extent that it seeks information or documents relating to entities other than NorthWestern; and to the extent that it requires public disclosure of information that is confidential or commercially sensitive to entities other than NorthWestern.

## Confidential Information Memorandum



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### Project Mustang Hydro Facilities

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# Notice to Recipients

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UBS Securities LLC (the "Advisor"), has been retained to serve as financial advisor to PPL Corporation ("PPL" or the "Company") in connection with a potential sale (the "Transaction") of its fleet of hydroelectric electric generation facilities located in Montana (each a "Facility" and together the "Facilities" or the "Hydro Facilities") and its western power marketing business.

This Confidential Information Memorandum (the "Memorandum") is being delivered to potential purchasers to assist them in deciding whether to proceed with their investigation of the Transaction in accordance with procedures established by the Company and the Advisor. This Memorandum does not purport to contain all of the information that may be required to evaluate all of the factors that would be relevant to a recipient considering entering into any Transaction and any recipient of this Memorandum should conduct its own investigation and analysis. The Company and the Advisor reserve the right to update, amend or replace this Memorandum in whole or in part at any time. However, neither the Company nor the Advisor undertakes any obligation to do so or to provide the recipient with any additional information.

The distribution and use by each recipient of the information contained herein, and any other information provided to the recipient by or on behalf of the Company or the Advisor in connection with recipient's evaluation of the Transaction, are governed by a confidentiality agreement, a copy of which has been executed and delivered by each recipient and which strictly limits the circulation and copying of the information contained in this Memorandum. **IF YOU HAVE NOT EXECUTED AND DELIVERED SUCH A CONFIDENTIALITY AGREEMENT, YOU HAVE RECEIVED THIS MEMORANDUM IN ERROR. IF SO, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE, AND RETURN THE MEMORANDUM TO US AT THE ADDRESS BELOW.** Except as provided in such confidentiality agreement, this Memorandum may not be distributed, reproduced or used without the express consent of the Company or for any purpose other than the evaluation of the Transaction by the person to whom this Memorandum has been delivered.

In addition, this Memorandum includes certain projections and forward-looking statements provided by the Company with respect to the anticipated future performance of the Facilities and the western power marketing business. Such projections and forward-looking statements reflect various assumptions of management concerning the future performance of the Facilities and the western power marketing business, and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of the Company. Accordingly, there can be no assurance that such projections or the outcomes that are the subject of forward-looking statements will be realized. The actual results may vary from the anticipated results and such variations may be material.

**THE ADVISOR HAS NOT INDEPENDENTLY VERIFIED ANY OF THE INFORMATION CONTAINED HEREIN. NEITHER THE COMPANY NOR ANY OF ITS AFFILIATES OR REPRESENTATIVES, NOR THE ADVISOR OR ANY OF ITS AFFILIATES OR REPRESENTATIVES, MAKES ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN OR ANY OTHER WRITTEN, ELECTRONIC OR ORAL COMMUNICATION TRANSMITTED OR MADE AVAILABLE TO ANY RECIPIENT. THE COMPANY, THE ADVISOR AND THEIR RESPECTIVE AFFILIATES AND REPRESENTATIVES EXPRESSLY DISCLAIM ANY AND ALL LIABILITY BASED, IN WHOLE OR IN PART, ON SUCH INFORMATION, ERRORS THEREIN OR OMISSIONS THEREFROM. ONLY THOSE PARTICULAR REPRESENTATIONS AND WARRANTIES, IF ANY, THAT MAY BE MADE TO A RECIPIENT IN A DEFINITIVE WRITTEN AGREEMENT, IF AND WHEN EXECUTED, AND SUBJECT TO SUCH LIMITATIONS AND RESTRICTIONS AS MAY BE SPECIFIED THEREIN, WILL HAVE ANY LEGAL EFFECT WITH RESPECT TO ANY INFORMATION PROVIDED TO ANY RECIPIENT. THE DELIVERY OF THIS MEMORANDUM DOES NOT OBLIGATE THE COMPANY OR THE RECIPIENT TO ENTER INTO THE TRANSACTION OR ANY OTHER TRANSACTION, AND THE COMPANY OR THE RECIPIENT MAY CEASE DISCUSSIONS OR NEGOTIATIONS CONCERNING THE TRANSACTION AT ANY TIME.**

The Company and the Advisor are free to conduct the process for the Transaction as they in their sole discretion determine (including, without limitation, negotiating with any recipient and entering into an agreement with respect to a Transaction without prior notice to recipient or to any other person) and any procedures or negotiations relating to such Transaction may be changed or terminated at any time without notice to recipient or any other person.

All communications or inquiries relating to the Company or the Transaction should be directed to the Advisor. No personnel of the Company should be contacted directly under any circumstances, unless otherwise agreed by the Company.

Some of the information included herein has not been publicly disclosed. The recipient is referred to limitations of state and federal securities laws of the United States restricting trading while in possession of material non-public information. Under no circumstances shall this Memorandum be deemed or construed to be an offer to sell or the solicitation of an offer to buy or sell securities.

# Notice to Recipients

## PROCEDURES FOR OBTAINING ADDITIONAL INFORMATION OR SUBMITTING QUESTIONS

You should communicate exclusively with UBS with respect to any requests for additional information or questions in connection with your evaluation of the Transaction. **Unless otherwise directed, you should not contact employees or representatives of PPL under any circumstances.** Requests for additional information and questions should be directed to UBS.

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Note:

1 Identifies Key Contacts.

## SECTION 1

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# Executive Summary

# Executive Summary

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## A. Overview of the Opportunity

PPL Corporation ("PPL" or the "Company") is considering the sale (the "Transaction") of its fleet of hydroelectric generating facilities located in the State of Montana (each a "Facility" and together the "Facilities" or the "Hydro Facilities"). PPL is also considering the sale of its western power marketing business (the "Western Power Marketing Business"), which includes PPL's portfolio of wholesale and retail contracts and transmission rights in the northwestern U.S. (the "Book"). Potential bidders for the Facilities will have the opportunity to bid separately on the Western Power Marketing Business as part of the Transaction process. The Company has retained UBS as its financial advisor in connection with the potential sale. The Company is exploring the Transaction as it continues to focus on its operations and growth opportunities in the eastern United States and in the United Kingdom.

The Transaction represents a unique opportunity to acquire a highly attractive hydroelectric generation fleet within the Western Electricity Coordinating Council's ("WECC") Northwest region ("Northwest"). Historically, many regional utilities have been materially net short on generation resources, and rely heavily on purchased power to meet load needs. As a result, the Facilities' electricity output serves a critical function to the electrical infrastructure of the region. Demand for generation is expected to further increase the Facilities' attractiveness in the region, especially as new transmission investments continue to come on-line, enhancing export capabilities, and approximately 4.7 GW of generation is expected to retire within the next 20 years.

The 11 hydroelectric facilities are situated in two separate river basins, benefitting from a diverse, reliable water supply. The Facilities also benefit from a history of prudent capital expenditures, as well as the low variable operating costs and favorable environmental qualities inherent with hydroelectric generation. In addition, recently completed capital projects have increased operating capacity by over 30 MW.

The Facilities have a longstanding track record of strong and reliable operating performance. This success is in large part due to the highly experienced management team and workforce. The dedicated employees have been working at the Facilities for an average of more than 16 years. As a result of their skill, experience and tenure, the team has built strong working relationships with customers, suppliers, regulators and other energy companies in the region.

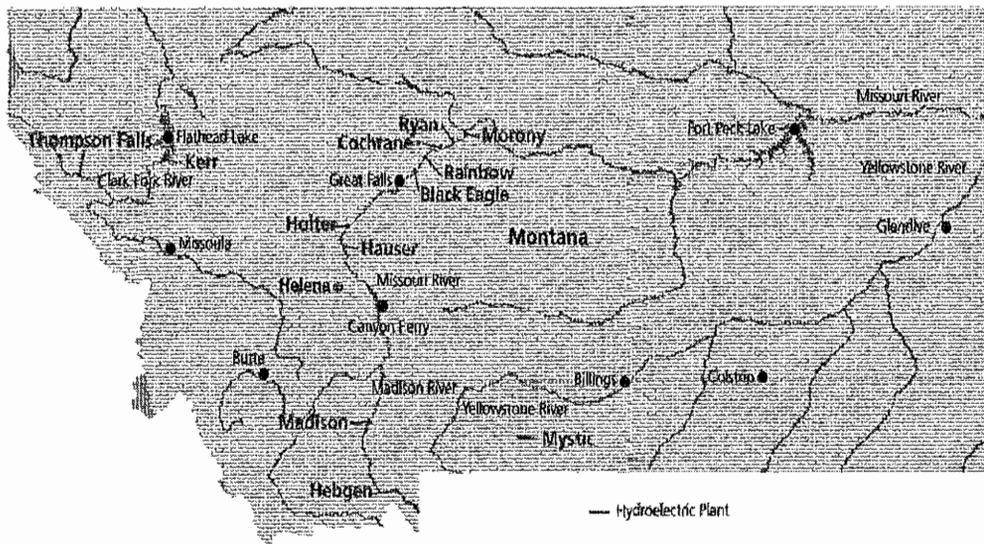
# Executive Summary

## B. Summary of the Facilities

PPL Montana, LLC ("PPL Montana"), a wholly owned, indirect subsidiary of PPL, owns and operates eleven hydroelectric generation facilities and one storage reservoir located throughout the State of Montana. Combined, the Facilities represent a net aggregate capacity of 633 MW.

The Facilities provide a reliable, zero-emission energy source. The projects benefit from a diverse water supply because they are located in two different river basins. They also lack the salmon-related issues attendant to most Northwest hydro facilities.

Figure 1 The Facilities



# Executive Summary

Figure 2 Hydro Facilities Overview

Hydro Facilities:	Hebgen	Madison	Hauser	Holtei	Black Eagle	Rainbow	Cochrane	Ryan	Morony	Kerr	Thompson Falls	Mystic
Ownership Interest (%)	100	100	100	100	100	100	100	100	100	100	100	100
Commercial Operation Date	1915	1906	1911	1918	1927	1910 <sup>2</sup>	1958	1915	1930	1938	1915	1925
Location Near	West Yellowstone	Ennis	Helena	Helena	Great Falls	Great Falls	Great Falls	Great Falls	Great Falls	Polson	Thompson Falls	Fishtail
River Source	Madison	Madison	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Flathead	Clark Fork	West Rosebud Creek
Net Capacity (MW)	—	8	19	48	21	60 <sup>2</sup>	69 <sup>2</sup>	60	48	194	94	12
Technology	—	Sampson horizontal, center discharge Francis	S. Morgan Smith horizontal, Francis type	S. Morgan Smith, Francis type	S. Morgan Smith, fixed lade propeler	Andritz Kaplan	S. Morgan Smith, Kaplan type	Francis, vertical type	IP Morris (vertical Francis)	Newport News/BLH-IP Morris (vertical Francis)	Allis Chalmers, vertical Francis/Kvaerner, vertical Kaplan	Pelton water wheels

Notes:

- 1 Ownership expected to cease in 2015 (for additional detail see Kerr Plant section of Facilities Overview).
- 2 The Rainbow redevelopment project, which entered commercial operation in April 2013, increased the operating capacity at the Rainbow and Cochrane facilities to 60 MW and 69 MW, respectively, from historical operating capacities of 36 MW and 64 MW, respectively.

# Executive Summary

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## C. Key Investment Highlights

- **Unique opportunity to acquire a highly attractive, reliable hydroelectric generation fleet**

The sale of the Facilities represents a unique opportunity to acquire a high-quality asset fleet with significant capacity in the Northwest. The buyer of the Facilities will reap the benefits of both location and scale, significantly expanding its generation capabilities in the Northwest generation market. The Facilities are reliable, renewable sources of generation that are critical to the infrastructure supporting load in the Northwest region.

- **Strategically located and positioned in the Northwest region**

The Facilities have a significant presence in the Northwest, serving as critical load support to the electrical infrastructure of the region. Historically, many regional utilities have been materially net short on generation resources and rely heavily on purchased power to meet load needs. Furthermore, the Mid-C price curve should receive significant uplift with economic growth, which would have a positive impact on the Facilities' gross margins.

- **Diverse and plentiful hydroelectric generation sources**

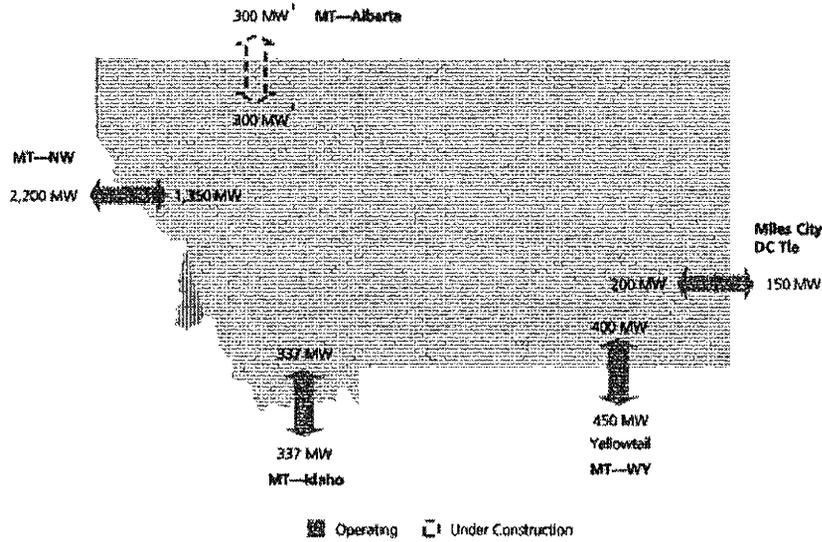
The Facilities represent an aggregate net capacity of 633 MW and are located in central and western Montana. Hydroelectric generation is a proven, reliable, and zero-emission energy source. The projects are located in two different river basins, with approximately half of the capacity east of the Continental Divide and half of the capacity west of the Continental Divide, thereby benefiting from a diversity of water sources. The projects are operated in compliance with applicable environmental laws, have long-term FERC licenses in place and lack the salmon-related issues attendant to most Northwest hydro facilities.

- **Transmission capacity currently being added in Montana and the WECC region will benefit the Facilities**

Transmission projects under development in the WECC region are expected to have a positive impact on the Facilities' ability to deliver electricity to regional customers with load needs. The Montana-Alberta Tie Line ("MATL"), a 300 MW, 230 kV electrical transmission line allowing for the movement of power between Alberta and Montana, is currently under construction and is expected to be one of the first to come on line. This project is expected to expand the market for the Facilities' generation and provide access to the higher-priced Alberta power market.

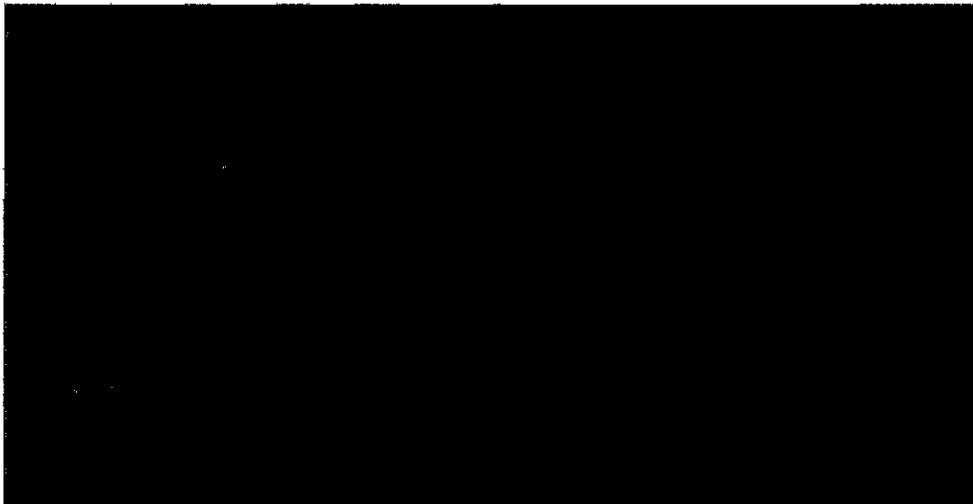
# Executive Summary

Figure 3 Transmission Transfer Capabilities



- **Very low variable cost Facilities allow for favorable positioning on the dispatch curve**

There is a finite amount of low-variable-cost and low-emission generation capacity available in the U.S., which becomes increasingly important as reliance on natural gas generation to meet electric demand increases. The Facilities' operating capacity comes from hydroelectric generation, which is one of the lowest variable-cost sources of electricity. Ownership of the Facilities as a portfolio of generation assets, as well as the location of several of the facilities within the Great Falls area, allows for staff to be shared across many of the facilities, further driving down costs. Given the low variable costs, the hydroelectric facilities are amongst the first units to dispatch within the Northwest as shown in the following dispatch curve.



Source: PA Consulting

Note:

1 Capacity as currently proposed

## Executive Summary

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- **High-quality, proven, efficient technology**

The Facilities have been reliably producing clean generation for over a century, with technology that incurs minimal variable operating costs, and are expected to continue reliable production for decades to come.

- **Strong, stable performance and proven track record**

The Facilities have a strong and proven operational record, with high levels of reliability and strong operating histories. The Facilities benefit from longevity and a steady supply of a clean, renewable source of energy.

- **Rainbow redevelopment provides efficient low-maintenance facilities**

PPL Montana recently doubled the amount of electricity produced at the Rainbow hydroelectric facility, located on the Missouri River near Great Falls, by constructing a new powerhouse with a single vertical shaft Kaplan type 60 MW turbine that has an improved, fish-friendly design. The new powerhouse also allows the immediately downstream Cochrane hydroelectric plant to operate with about 6 feet of additional head as compared to historical operations, increasing the capacity of the Cochrane plant by about 5 MW to 69 MW.

- **Highly experienced management team and workforce with outstanding operating and safety track record**

The Facilities have essentially been operated by the same management team for the last 13 years, with a highly skilled workforce having an average tenure of over 17 years. Collectively, the management team has industry experience averaging 29 years. PPL Montana has also been a leader in employee safety, becoming the first private company in Montana to earn the federal government's highest recognition for excellence in voluntary occupational safety and health programs. PPL Montana's Kerr, Madison, Hebgen, Holter, Hauser and Thompson Falls plants have been designated by OSHA as "VPP Star" plants.

- **Opportunity to separately acquire power marketing business**

PPL's Western Power Marketing Business, which interested bidders will have an opportunity to separately include in their proposals, has employees with deep experience in scheduling and marketing the output of the Facilities. These marketing skills, combined with strong relationships with retail customers and wholesale counterparties, have led to enhanced margins on the sale of the Facilities' output, creating significant value. The group is well known throughout the WECC and respected as an innovative organization and fair commercial counterparty. Their familiarity with the Facilities, combined with their skill and presence within the market, allows them to provide for reliable supply to customers while optimizing bottom-line results.

### **D. Northwest Market Overview**

The Facilities are located in the Northwest, one of the United States sub-regions of the Western Electricity Coordinating Council. WECC is the regional organization responsible for the coordination, operation, and planning of the bulk power electric systems in the western United States.

# Executive Summary

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## Supply and Demand

The supply and demand balance in power markets is one of the most critical factors in determining asset value. While the Northwest region as a whole is projected to require additional supply to meet electric demand early in the next decade, some electric utilities that can be served by the Facilities are projected to be short of supply to meet electric demand even sooner.

The Northwest region is projected to have approximately [REDACTED] GW of supply for the peak season of 2013, of which approximately [REDACTED] % is hydroelectric. The remaining [REDACTED] % of capacity consists of natural gas, nuclear power, coal and other renewable generation, with coal comprising a majority of the non-hydro generation ([REDACTED] % of total capacity). The Northwest's fuel mix for capacity and projected energy generation is shown in Figure 5. While the Northwest, as a whole, is not expected to require additional amounts of supply to meet electric demand until [REDACTED], many electric utilities in the region project supply deficits earlier than [REDACTED].

Approximately [REDACTED] GW of coal, natural gas, and oil capacity currently in the Northwest market is expected to retire within the next twenty years, with [REDACTED] GW retiring by the end of [REDACTED]. The majority of new capacity construction in the region is expected to be natural gas generators, along with renewables and demand side resources.

- Average annual demand and energy growth rates are both projected to be [REDACTED] % from 2013–2032



## "New-Build" Cost Estimates

New plant construction costs (also referred to as capital costs) help define the premium a market places on capacity, particularly when existing capacity becomes insufficient to meet demand. Capital costs for the power generation industry increased dramatically in the mid-to-late 2000s,

## Executive Summary

increasing by more than █% over a 5-year period. Since then, the growth rate has subsided, although capital costs have not undergone recessionary declines. However, in some regions a shift in power generator development from merchant developers with high return requirements to utility developers with more conservative requirements may serve to reduce new entrant costs.

- PA Consulting's estimate for installed new-build CCGT in the Northwest is █/kW (2014 dollars)

## E. Summary Financials

Figure 6 Summary Financials (Hydro Facilities Only)

(\$ in millions)	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2032E
<b>Revenues</b>												
Merchant Energy Revenue <sup>1</sup>	90	106	101	86	94	103	113	129	161	168	175	233
Other Revenues, Net	0	0	(0)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(3)
<b>Total Revenues</b>	<b>91</b>	<b>106</b>	<b>100</b>	<b>84</b>	<b>92</b>	<b>101</b>	<b>111</b>	<b>127</b>	<b>158</b>	<b>166</b>	<b>172</b>	<b>230</b>
Cost of Fuel	-	-	-	-	-	-	-	-	-	-	-	-
<b>Gross Margin</b>	<b>91</b>	<b>106</b>	<b>100</b>	<b>84</b>	<b>92</b>	<b>101</b>	<b>111</b>	<b>127</b>	<b>158</b>	<b>166</b>	<b>172</b>	<b>230</b>
<b>Operating Expenses</b>												
Plant O&M Expense	(23)	(22)	(22)	(19)	(20)	(21)	(21)	(22)	(22)	(23)	(23)	(29)
Kerr - CSKT Annual Rent Expense	(19)	(20)	(14)	-	-	-	-	-	-	-	-	-
Property Taxes	(14)	(15)	(14)	(14)	(14)	(14)	(14)	(15)	(15)	(15)	(15)	(17)
Generation Taxes	(1)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
<b>Total Plant Operating Expenses</b>	<b>(57)</b>	<b>(57)</b>	<b>(51)</b>	<b>(34)</b>	<b>(35)</b>	<b>(35)</b>	<b>(36)</b>	<b>(37)</b>	<b>(38)</b>	<b>(38)</b>	<b>(39)</b>	<b>(47)</b>
PPL Montana Corporate Expenses	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(7)	(7)	(8)
<b>Total Operating Expenses</b>	<b>(63)</b>	<b>(63)</b>	<b>(56)</b>	<b>(39)</b>	<b>(40)</b>	<b>(41)</b>	<b>(42)</b>	<b>(43)</b>	<b>(44)</b>	<b>(45)</b>	<b>(46)</b>	<b>(56)</b>
<b>EBITDA</b>	<b>28</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>57</b>	<b>60</b>	<b>69</b>	<b>80</b>	<b>114</b>	<b>121</b>	<b>125</b>	<b>174</b>
<b>EBITDA Margin (%)</b>	<b>31%</b>	<b>41%</b>	<b>44%</b>	<b>54%</b>	<b>56%</b>	<b>59%</b>	<b>62%</b>	<b>66%</b>	<b>72%</b>	<b>73%</b>	<b>73%</b>	<b>76%</b>
Plus: Pre-Tax Proceeds from Sale of Kerr	-	-	52	-	-	-	-	-	-	-	-	-
Less: Capital Expenditures	(16)	(12)	(9)	(9)	(12)	(12)	(13)	(13)	(13)	(14)	(14)	(17)
<b>Pre-Tax Net Cash Flow</b>	<b>12</b>	<b>31</b>	<b>87</b>	<b>36</b>	<b>40</b>	<b>47</b>	<b>56</b>	<b>71</b>	<b>101</b>	<b>107</b>	<b>112</b>	<b>157</b>

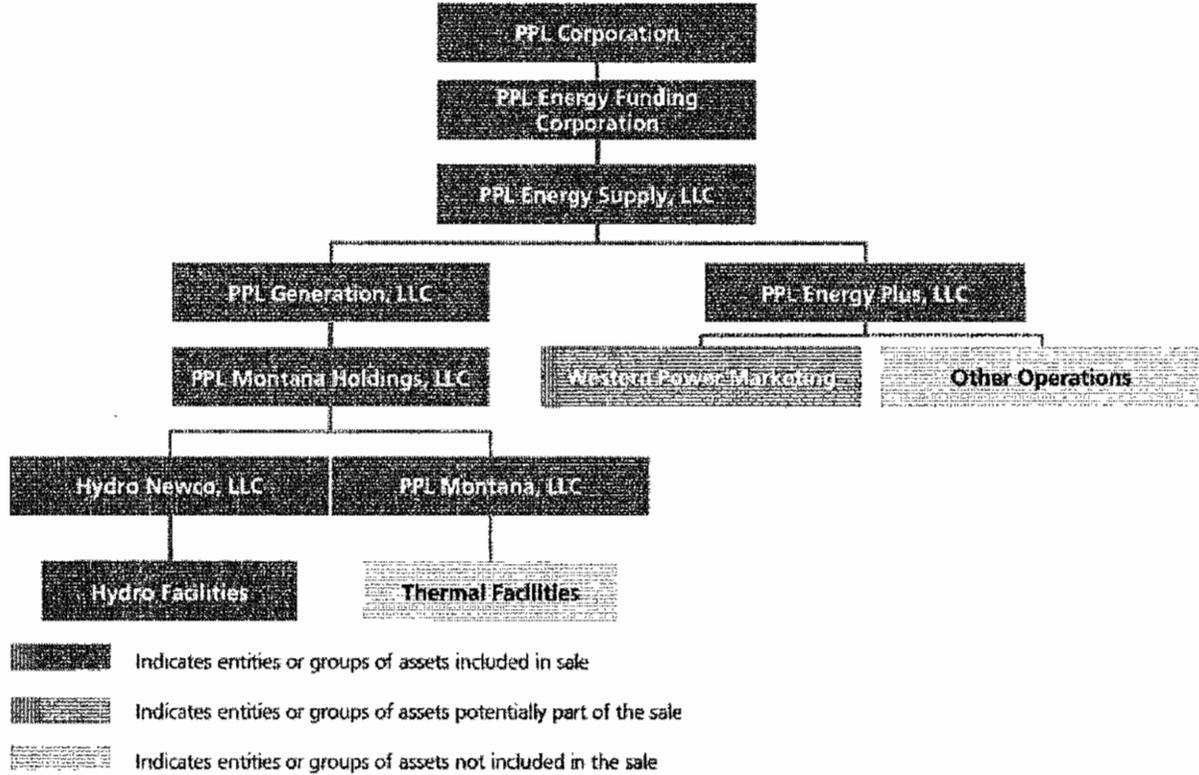
Note:

<sup>1</sup> Additional detail regarding merchant and contracted revenues can be found in the Financial Information section of this Memorandum.

# Executive Summary

## F. Corporate and Transaction Structure

Figure 7 Corporate Structure



PPL Montana currently owns and operates the Hydro Facilities, and also owns interests in and operates the Colstrip and Corette coal-fired electric generation facilities. Prior to closing of the Transaction, PPL expects to transfer the Hydro Facilities and related assets and employees to an affiliate of PPL Montana that would be formed for this purpose ("Hydro Newco"). The membership interests in Hydro Newco would be transferred to the buyer at closing.

PPL EnergyPlus, LLC ("PPL EnergyPlus") is a wholly owned, indirect subsidiary of PPL and acts as its power marketing arm, managing wholesale supply portfolios and aggregating retail load throughout the Mid-Atlantic, Northeast and West. PPL Montana sells the output of all of its facilities to PPL EnergyPlus, which resells the output in wholesale and retail transactions that form the bulk of PPL's Western Power Marketing Business. This business has 21 employees located in Butte, Montana that perform power marketing activities exclusively relating to PPL Montana. Interested bidders will have the opportunity to bid separately on the Western Power Marketing Business as part of the Transaction process.

SECTION 2

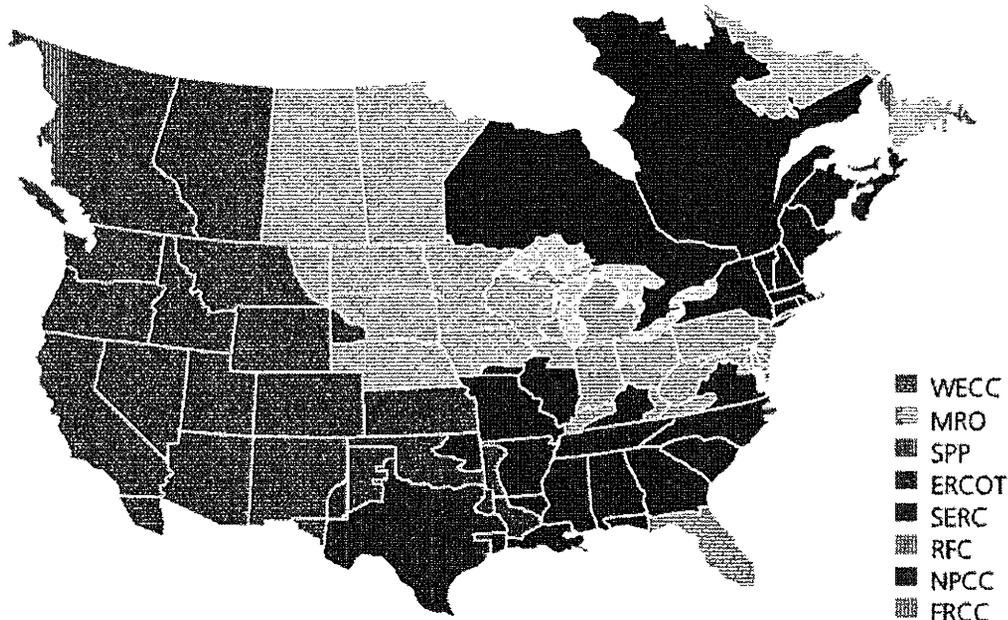
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## Northwest Market Overview

# Northwest Market Overview

## A. Overview

Figure 8 U.S. Power Regions



Source: NERC

On April 18, 2002, the Western Systems Coordinating Council ("WSCC"), Southwest Regional Transmission Association ("SWRTA"), and Western Regional Transmission Association ("WRTA") merged to form the Western Electricity Coordinating Council. WECC is the regional organization responsible for the coordination, operation, and planning of the bulk power electric systems in the western United States, with the mission to promote system stability and reliability. Stretching from Canada to Mexico, WECC spans all or portions of 14 western U.S. states (as well as two Canadian provinces and certain portions of northern Mexico), encompasses nearly 1.8 million square miles, and serves more than 70 million customers. The Northwest, as defined herein, is a sub-region of WECC and is comprised of portions or all of the states of Oregon, Washington, Idaho, Utah, Montana, Wyoming, California and Nevada. Some of the key highlights of the Northwest are:

- Significant hydroelectric generation and transmission export capabilities
- Region currently oversupplied as a whole; however, a number of sub-areas are undersupplied
- Relatively stable market structure

The Northwest is predominantly an informal market, without a centralized wholesale market structure. Most capacity, energy, and ancillary services are either self-supplied by one of the region's incumbent electric utilities, or supplied through short or long-term bilateral transactions or purchases / sales at liquid transaction hubs such as Mid-C. The Bonneville Power Administration

# Northwest Market Overview

("BPA") is the Northwest's largest supplier, with the majority of its generation produced through a network of federal hydroelectric dams. The majority of BPA's power is sold at cost-based rates to public and municipal utilities, electric cooperatives, and commercial entities, with any uncommitted surplus sold at market rates to other market participants.

The Northwest is characterized by large amounts of hydro generation and is a winter peaking electric system. The large geographic area of the region creates a situation in which the individual members face unique challenges, and as such, resource planning generally occurs at the electricity provider level. See Figure 9 below for a list of the largest electricity providers in the Northwest.

Figure 9 Largest Electricity Providers in the Northwest <sup>1</sup>

Electricity Providers	Winter Peak Load (GW)	Total Retail Electric Sales (GWh)	Market Purchases (GWh)
Bonneville Power Admin. <sup>2</sup>			
PacifiCorp			
Puget Sound Energy Inc.			
Portland General Electric Co.			
NorthWestern Energy			
Seattle City Light			
Avista Corp.			
Snohomish County PUD			
Energy Northwest <sup>3</sup>			
Tacoma Public Utilities			

Sources: PA Consulting, Verityx, SNL Financial  
 Notes:

- 1 Largest is defined by winter peak load greater than 1 GW in 2010. All data is from 2010.
- 2 Total retail electric sales for BPA include total retail electric sales and sales for resale through all-requirements contracts.
- 3 Energy Northwest does not provide direct retail service, but is a Joint Operating Agency comprised of 27 member electric utilities which it serves through all-requirements contracts.

## B. Northwest Market

### Energy Market

The Northwest is one of four United States sub-regions of the WECC, with approximately [REDACTED] GW of supply projected to be available to meet [REDACTED] GW of demand in 2013, resulting in a near-term reserve margin of [REDACTED]. While the Northwest region as a whole is not expected to need incremental supply to meet electric demand until [REDACTED], some electric utilities such as PacifiCorp, NorthWestern Energy, Portland General Electric, Idaho Power, and Puget Sound Energy project a shortage of supply sooner.

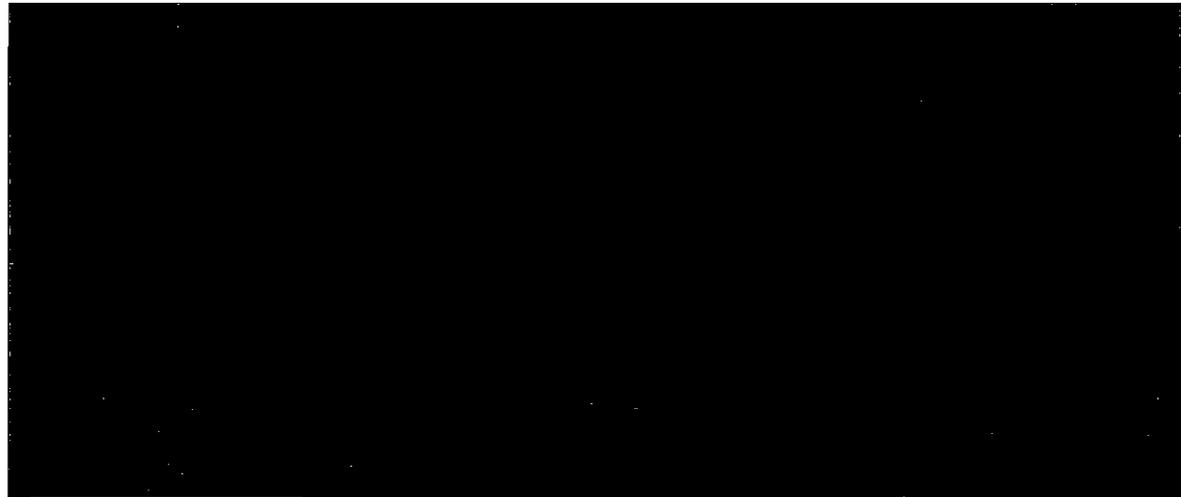
The PA Consulting base case projects the Northwest to be short of supply to meet demand in the [REDACTED] time frame. The PA Consulting base case projects approximately [REDACTED] GW of firm capacity additions through [REDACTED] and [REDACTED] GW of retirements by the end of [REDACTED].

## Northwest Market Overview

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The Northwest is predominantly an informal bilateral market which lacks many of the wholesale market features of the Northeast U.S., Midwest U.S., PJM, Texas, and California. The Northwest has substantial access to surrounding markets such as California, and California's electricity market significantly contributes to the electricity economics of the Northwest.<sup>1</sup>

The hydroelectric generation in the Northwest generally results in lower prices at Mid-C relative to regions to the south, which drives significant sales volumes to the electric utilities throughout the Northwest and West looking to benefit from the purchase of low-cost generation.



Sources: PA Consulting, Platts Data

### Recent Market Developments

In March 2012, BPA instituted a new policy of compensating wind generators that BPA forces to curtail during the spring season. The spring runoff creates a situation for BPA in which supply at times outpaces demand, as hydro operators are forced to operate in a manner that regulates stream flow for environmental concerns. The spring runoff happens to coincide with peak wind season for the region's wind generators, further exacerbating the seasonal oversupply. In 2011, rivers in the region were at their fourth highest levels since 1929, which led to BPA-initiated wind curtailments during 53 days causing wind generators to lose a portion of their production tax credit benefits. In 2012, BPA curtailed power on at least 5 days with at least 37 GWh of wind being curtailed, which was considerably less than the approximately 97 GWh of curtailment in 2011. The BPA policy to compensate for wind curtailment follows a FERC ruling that BPA's curtailment practice was discriminatory.

Note:

<sup>1</sup> The Northwest has approximately [redacted] MW of export capacity into California markets, with additional export capacity to other surrounding markets

# Northwest Market Overview

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## C. Transmission

The Montana transmission system consists of an east-to-northwest 230 kV backbone with an underlying 115 kV transmission serving most of the state. While Montana’s transmission system is not as robust as some others in the West, it is adequate for local service. NorthWestern Energy owns a 230 kV and a 115 kV transmission system that serves the western two-thirds of Montana. The 500 kV Colstrip Transmission System (“CTS”) is owned by the non-PPL owners of the Colstrip facility. The CTS was initially constructed for transmitting the output of the Colstrip facility from Colstrip to an interconnection with BPA near Townsend. With the exception of the CTS, which provides a strong path from the Colstrip facility to points further west on BPA’s system, the Montana system was designed primarily for delivery within the state. Imports and exports to and from the state are subject to various constraints. However, under normal dispatch conditions these constraints rarely limit output. While a portion of the Facilities’ power is sold within Montana, there is generally significant capacity available for exports to elsewhere in the Northwest, including Mid-C.

Consistent with the nature of the system and the significant east-to-west flows under almost all system conditions, there are several constraints in the east-to-west direction. The constrained transmission lines include these systems: West of Colstrip, West of Crossover, and West of Broadview. There is also a bidirectional constraint on power imported to or exported from the Montana Control Area in the southeast.

The Montana-Alberta Tie Line, a merchant line connecting Alberta and Montana for the first time, is expected to be completed in June 2013. The Montana section was completed in February 2013 and all indications are that the Alberta section will be completed as planned such that the entire line should be operational by June 2013. The 300 MW of firm capacity has been fully subscribed in both directions. While doubling the line’s capacity has been proposed, no significant action has been taken to date.<sup>1</sup>



A relatively low-cost upgrade to the CTS has been proposed that would increase east-to-west capacity by about 520 MW. To date there has been only tentative commitment to the project. However, BPA is preparing an Environmental Impact Statement (“EIS”) and has transmission requests that support the upgrade. Proposed power generation developments in eastern and central Montana will probably not be viable without this upgrade or new line construction.

Other major transmission projects have been proposed to allow substantial exports from Montana to the southwest. Both the Chinook DC project, proposed by TransCanada, and the 500 kV Mountain States Transmission Intertie (“MSTI”), sponsored by NorthWestern Energy, are currently on hold, with uncertain prospects for future development. Announcements from NorthWestern Energy and the MSTI Review Project indicate that the projects are not likely to move forward in the foreseeable future due to permitting issues, market uncertainty and the choice by BPA to prioritize other transmission projects.

Note:

<sup>1</sup> Given that wind generators have subscribed a significant portion of the line, it is expected that there will be significant availability on the line given wind facilities’ low capacity factor.

# Northwest Market Overview

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## D. Supply and Demand

The supply and demand balance in power markets is one of the most critical factors in determining asset value. While the Northwest region as a whole is projected to require additional supply to meet electric demand early in the next decade, some electric utilities that can be served by the Facilities are projected to be short of supply to meet electric demand sooner.

The Northwest region is projected to have approximately [REDACTED] GW of supply<sup>1</sup> for the peak season of 2013, of which approximately [REDACTED]% is hydroelectric. The remaining [REDACTED]% of capacity consists of natural gas, nuclear power, coal and other renewable generation, with coal constituting a majority of the non-hydro generation [REDACTED]% of total capacity). The Northwest's fuel mix for capacity and projected energy generation is shown in Figure 11. While the Northwest, as a whole, is not expected to require additional amounts of supply to meet electric demand until [REDACTED] many electric utilities in the region project supply deficits earlier than [REDACTED]

Approximately [REDACTED] GW of coal, natural gas, and oil capacity currently in the Northwest market is expected to retire from [REDACTED], with [REDACTED] GW retiring by the end of [REDACTED]. The majority of new capacity construction in the region is expected to be natural gas generators, along with some renewables and demand side resources.

- Average annual demand and energy growth rates are both projected to be [REDACTED]% from 2013–2032



Notes:

- 1 The Northwest is projected to have approximately [REDACTED] GW of installed capacity in 2013, which includes derates to hydro and wind capacity for reliability but does not include the impact of exports from the region.
- 2 This figure includes the impact of wind and hydroelectric capacity derates and net exports from the region.

# Northwest Market Overview

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## Cost of New Entry

New plant construction costs (also referred to as capital costs) help define the premium a market places on capacity, particularly when existing capacity becomes insufficient to meet demand. Capital costs for the power generation industry increased dramatically in the mid-to-late 2000s, increasing by more than █% over a 5-year period. Since then, the growth rate has subsided, although capital costs have not undergone the recessionary declines experienced by many other industries. However, in some regions a shift in power generator development from merchant developers with high return requirements to utility developers with more conservative requirements may serve to reduce new entrant costs. See Figure 12 below for the base case assumptions for new power generator construction costs.



### Notes:

- 1 Based on these financial assumptions, the resulting levelized cost for a CC and CT is \$█ per kW-year respectively in 2014\$
- 2 Capital costs may vary substantially in actual development projects, but are expected to generally range between \$█ /kW for CC and \$█ /kW for CT projects.
- 3 Winter heat rate is listed. Summer heat rate is █% higher for a CC and █% higher for a CT.

For natural gas power generation technologies, larger combined cycle units are on the whole more efficient (lower heat rates), have lower installed capital costs per kilowatt, and have lower annual fixed operation and maintenance costs per kilowatt. While such economies of scale tend to favor the economics of large generating units over small units, there are potential concerns in a region of Montana's size that market depth may not support the development of large natural gas combined cycles.

## Fuel Prices

### *Natural Gas*

After experiencing significant volatility for the decade leading up to 2008, U.S. natural gas prices have declined substantially since mid-2008, driven largely by a structural market change brought about by improved shale gas and liquids production techniques. In early 2012, NYMEX briefly

## Northwest Market Overview

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crossed below the \$2/mmBtu threshold, at least partially impacted by relatively high natural gas storage levels and a mild winter, and despite increased demand for natural gas from the power generation sector. In the long term, natural gas prices are projected to increase to approximately \$2.50/mmBtu in the early 2020s and approach \$3.00/mmBtu by 2032 (in real 2012 dollar terms).

PA Consulting's Henry Hub natural gas price forecast incorporates Henry Hub forwards as of June 29, 2012 for the 2012-2015 period, and trending gradually to long-term consensus levels by the 2019 timeframe. PA Consulting's long-term third party consensus forecast is based on a sample of publicly and privately available natural gas price forecasts.



### *Coal*

Coal has long been a stable source of low-cost fuel for power generation throughout the United States. In the eastern U.S., Appalachian coal has historically been a major player in fueling coal-fired plants due to their high calorific content and proximity to eastern generators; however, low-cost and lower-sulfur Powder River Basin ("PRB") coal use has increased significantly over the past 10-15 years, largely in response to increasingly stringent air emissions regulations. In addition to emissions-related regulatory drivers, pricing for many Appalachian coals has generally been increasing, largely due to three factors: (1) declining reserves, both in quantity and quality; (2) increasing mining regulations due to both environmental and safety concerns; and (3) increasing, albeit sporadic, demand from seaborne players for Central Appalachia thermal, metallurgical, and cross-over tonnage as supply issues have arisen in other parts of the world. In general, all three of these factors create upward price pressure on traditional Appalachian coal supplies, further increasing the attractiveness of PRB as an alternative.

While recent declines in natural gas prices and declining near-term demand from coal-fired generators have forced many mines to price spot coal sales at or near cash mining costs, such a

# Northwest Market Overview

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pricing environment is unlikely to exist on a widespread basis over the long term. These same mines are hesitant to commit significant tonnages at these lower prices over a significant contract tenor.

In addition to understanding the commodity price dynamics for coal power generation, the price of delivered coal (and the types of coal that can be burned at a coal-fired facility) can vary substantially from facility to facility due to transportation costs and delivery options available at the plant. Transportation costs are a function of routing, distance traveled, and method of shipping, as well as whether or not coal plants are "captive" to a single shipper or can be supplied competitively. Transportation prices are projected to increase at rates driven by factors such as the cost of steel, labor, and diesel fuel, and vary for each of the primary transport types (truck, rail, barge, and ocean vessel).

## Power and Fuel Projected Prices



# Northwest Market Overview

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## Northwest Dispatch Curves



## SECTION 3

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# Facilities Overview

# Facilities Overview

## A. Facilities Overview

The Facilities include 11 hydroelectric plants and one storage reservoir located in central and western Montana along the Missouri, Flathead, Clark Fork, and Madison Rivers and Rosebud Creek. The net aggregate generating capacity of these facilities is 633 MW. Eight of the Hydro Facilities, along with the storage reservoir, are collectively licensed as the Missouri-Madison Project, FERC Project No. 2188. Each of the remaining three Hydro Facilities is licensed by FERC as a separate project as further described below.

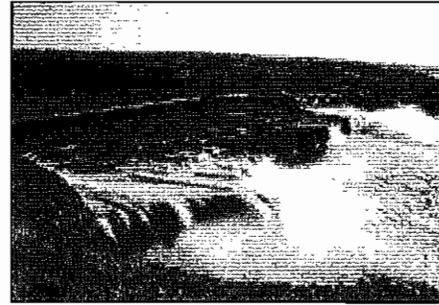
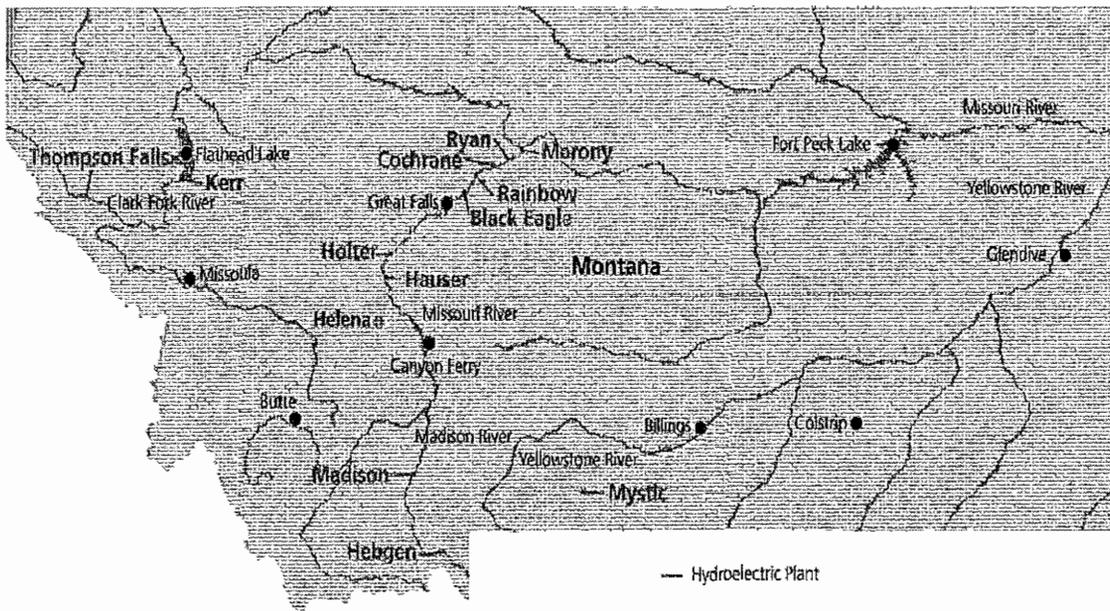


Figure 17 The Facilities



PPL Montana sells the output of the Facilities to PPL EnergyPlus, which resells the output in wholesale and retail transactions.<sup>1</sup> Historically, approximately 80% of PPL Montana’s generation is sold to the wholesale market, with the remaining 20% sold to the retail market. For more information on this power marketing portfolio, please see the Western Power Marketing Business section.

Note:

<sup>1</sup> Approximately 7.5 MWs (January – March and November – December) and 11.2 MWs (April – October) are sold directly by PPL Montana to Mission Valley Power pursuant to the FERC project license for the Kerr Facility. This obligation would be assumed by the Confederated Salish and Kootenai Tribes of the Flathead Nation upon their acquisition of the project in 2015.

# Facilities Overview

Figure 18 Facility Characteristics

	Hobgen	Madison	Hauser	Holter	Black Eagle	Rainbow
FERC Project No.	2188	2188	2188	2188	2188	2188
Net Generating Capacity (MW)	—	8	19	48	21	60 <sup>2</sup>
Commercial Operation Date	1915	1906	1911	1918	1927	1910 <sup>2</sup>
Location Near	West Yellowstone	Ennis	Helena	Helena	Great Falls	Great Falls
FERC License Expiration	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040
Turbine Technology	—	Sampson horizontal, center discharge Francis	S. Morgan Smith horizontal, Francis type	S. Morgan Smith vertical, Francis type	S. Morgan Smith, fixed blade propeller	Andritz Kaplan

	Cochrane	Ryan	Morony	Korr <sup>1</sup>	Thompson Falls	Mystic
FERC Project No.	2188	2188	2188	5	1869	2301
Net Generating Capacity (MW)	69 <sup>2</sup>	60	48	194	94	12
Commercial Operation Date	1958	1915	1930	1938	1915	1925
Location Near	Great Falls	Great Falls	Great Falls	Polson	Thompson Falls	Fishtail
FERC License Expiration	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Part of Missouri-Madison Project, expires Aug. 31, 2040	Expires Dec. 31, 2035	Expires Dec. 31, 2025	Expires Dec. 31, 2050
Turbine Technology	S. Morgan Smith, Kaplan type	Francis, vertical type	IP Morris (vertical Francis)	Newport News/BLH-IP Morris (Vertical Francis)	Allis Chalmers, vertical Francis/Kvaerner, vertical Kaplan	Pelton water wheels

Notes:

- 1 Ownership expected to cease in 2015 (for additional detail see Hydroelectric License Commitments).
- 2 The Rainbow redevelopment project, which entered commercial operation in April 2013, increased the operating capacity at the Rainbow and Cochrane facilities to 60 MW and 69 MW, respectively, from historical operating capacities of 36 MW and 64 MW, respectively.

# Facilities Overview

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## B. Facility Descriptions

The Missouri-Madison Project consists of the Hebgen Reservoir and the Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Plants. These facilities are collectively licensed as FERC Project No. 2188. The current license was issued on September 27, 2000 and expires on August 31, 2040.

### *Hebgen Reservoir*

The Hebgen Reservoir is located near the southern border of Montana on the Madison River. The reservoir is formed by the Hebgen Dam, a 721-foot long, 81-foot high earthfill gravity dam with a concrete core wall. The dam was completed in 1915. The spillway is a 375-foot long side channel with a capacity of 7,000 cubic feet per second. The Hebgen Reservoir is used as a storage facility to regulate downstream flows for power production and FERC license compliance, as well as for flood control on the Madison River.

### *Madison Plant*

The present Madison Plant was constructed in 1906, replacing a predecessor facility that commenced operations in 1901. It is located on the Madison River about 60 miles downstream of the Hebgen Reservoir. It includes a 257-foot long, 38.5-foot high dam, a 140-foot long spillway, an intake, and a 7,500-foot long, 13-foot diameter steel pipe flowline, concrete surge chamber, four 9-foot diameter penstocks, and a masonry powerhouse. The powerhouse contains four Sampson horizontal shaft Francis turbines connected to electric generators with a total capacity of 8 MW.

### *Hauser Plant*

The Hauser Plant is located on the Missouri River about 14 miles northeast of Helena and downstream of the U.S. Bureau of Reclamation's Canyon Ferry Project. The Hauser Plant was completed in 1911 and includes a 700-foot long, 80-foot high concrete gravity dam with a spillway, an intake and forebay at the right abutment, steel penstocks, and a masonry powerhouse. The powerhouse contains six S. Morgan Smith horizontal, Francis type turbines connected to electric generators with a total capacity of 19 MW.

### *Holter Plant*

The Holter Plant is located on the Missouri River about 25 miles downstream of the Hauser Plant. It was completed in 1918 and the plant facilities include a 1,364-foot long, 124-foot high concrete gravity dam with a 682-foot long controlled overflow spillway section, and an intake section at the left abutment with steel penstocks leading to a powerhouse integral with the intake. The powerhouse is a 208-foot long concrete and steel structure housing four S. Morgan Smith vertical, Francis type turbines and electric generators with a total capacity of 48 MW.

# Facilities Overview

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## *Black Eagle Plant*

The Black Eagle Plant first went on line in 1891, and was completely rebuilt in 1927. It includes a 782-foot long, 34.5-foot high concrete gravity dam with a controlled ogee crest spillway section that is 646 feet long, a 421 foot by 96 foot forebay that forms the left abutment of the dam, and an integral intake and powerhouse. The powerhouse contains three vertical S. Morgan Smith fixed propeller turbines and electric generators with a total capacity of 21 MW.

## *Rainbow Plant*

The original Rainbow Plant was completed in 1910. It includes a 1,146-foot long, 43.5-foot high rockfill timber crib and concrete gravity dam with an integral overflow spillway, two intake structures leading to steel flowlines, surge tank and chamber, penstocks to the powerhouse, and a brick masonry powerhouse.

In April 2013, PPL Montana completed a redevelopment project that increased Rainbow's operating capacity from 36 MW to 60 MW. To achieve the increased capacity, PPL Montana constructed a new powerhouse with a single 60 MW Andritz Kaplan turbine that has an improved, fish-friendly design. A new intake structure was constructed adjacent to the existing intake with controls provided by gates and an automated trash rake. A new open channel flowline including a new forebay/surge facility was also constructed. The new powerhouse was built about 200 feet downstream of the existing powerhouse, which was shut down upon commercial operation of the new powerhouse in April 2013.

## *Cochrane Plant*

The Cochrane Plant was completed in 1958 and includes an 856-foot long, 100-foot high concrete gravity dam with a 334-foot long overflow spillway section controlled by radial gates, an integral intake, and powerhouse section that is 188 feet long. The powerhouse is a 130 foot by 65 foot reinforced concrete structure, housing two vertical S. Morgan Smith, Kaplan-type turbines and electric generators. The redevelopment of the Rainbow Plant with a new powerhouse will allow the Cochrane pool to operate with about 6 feet higher head than it has historically operated, increasing the capacity of the Cochrane Plant by about 5 MW to 69 MW.

## *Ryan Plant*

The Ryan Plant was completed in 1915 and consists of a 1,465-foot long, 82-foot high concrete gravity dam with an overflow spillway, and an intake to six steel penstocks leading to a brick masonry powerhouse. The powerhouse contains six vertical Francis turbines and electric generators with a total capacity of 60 MW.

## *Morony Plant*

The Morony Plant was completed in 1930 and consists of an 842-foot long, 96-foot high concrete gravity dam with an overflow spillway, and two 21-foot diameter penstocks leading to the powerhouse which is integral with the intake section of the dam. The powerhouse contains two I.P. Morris vertical Francis type turbines and electric generators with a total capacity of 48 MW.

## Facilities Overview

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### *Kerr Plant*

The Kerr Plant is located on the Flathead River approximately six miles downstream from the south end of Flathead Lake. It is licensed by the FERC as Project No. 5 and is a joint license to PPL Montana and the Confederated Salish and Kootenai Tribes of the Flathead Nation (the "CSKT"). The license expires December 31, 2035, but under its terms the CSKT have the option to purchase the Kerr Plant at any time between 2015 to 2025, as further described below under "Hydroelectric License Commitments."<sup>1</sup>

The Kerr Plant was originally constructed in 1938 and consists of a 380-foot long, 200-foot high concrete arch dam with 14 overflow spillway gates across the crest, a concrete intake on the left abutment of the dam, three concrete and steel lined penstock tunnels, and a concrete powerhouse containing two Newport News vertical Francis type turbines, one BLH—I.P. Morris vertical Francis type turbine that was added in 1954, and electric generators with a total operating capacity of 194 MW.<sup>2</sup>

### *Thompson Falls Plant*

The Thompson Falls Plant is licensed by the FERC as Project No. 1869 and is located on the Clark Fork River at the town of Thompson Falls. The current license was issued on December 28, 1979 and expires December 31, 2025. The license was amended in 1990 to allow for the construction of Unit 7.

The Thompson Falls Plant consists of two dams (the main dam and the dry channel dam), the original intake and powerhouse, and the Unit 7 powerhouse and intake. The main dam is a 913-foot long, 18-foot high concrete gravity structure with 38 bays with removable panels, flashboards, and stanchions. The dry channel dam has two sections: a non-overflow sluiceway section that is 122 feet long and 38 feet high, and an overflow ogee section that is 289 feet long and has 12 bays with removable panels, flashboards, and stanchions. The original intake and powerhouse is a steel and concrete structure with a cut rock exterior, and the intake is integral with the powerhouse. It contains six Allis Chalmers vertical Francis type turbines and electric generators with a total capacity of 36 MW. The original plant was constructed in 1915. Unit 7 was completed in 1995 and is a reinforced concrete structure containing one 50 MW Kvaerner vertical Kaplan type turbine and electric generator. Unit 7 is located between the original powerhouse and the dry channel dam.

In late 2010, PPL Montana completed construction at the main dam of a 75-foot high steel and concrete fish ladder consisting of 48 step pools. It commenced operations in 2011 and is the first in the United States specifically designed to accommodate bull trout, a federally listed threatened species.

### *Mystic Plant*

The Mystic Plant is located at the headwaters of West Rosebud Creek high in the Beartooth Mountains of south central Montana. It is licensed by FERC as Project No. 2301. The current license was issued on December 17, 2007 and expires December 31, 2050.

#### Notes:

- 1 PPL Montana financial projections assume conveyance of the Kerr Plant to the CSKT in September 2015. Revenues and costs for Kerr are excluded thereafter.
- 2 The Kerr Plant has a nameplate capacity of 206 MW, but due to transmission constraints is currently limited to operating at 194 MW

## Facilities Overview

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The Mystic Plant was originally constructed in 1925 and consists of a concrete arch dam that is 388 feet long and 41 feet high, a 150-foot long earth filled dike with a concrete core, a concrete intake, a 10,000-foot long flowline, a 118.5-foot high surge tank, a steel penstock that is 2,566 feet long between the surge tank and powerhouse, and a reinforced concrete powerhouse with two horizontal Pelton turbines and electric generators with a total installed capacity of 12 MW. In 1978 a re-regulating dam was constructed downstream of the powerhouse.

### C. Key Agreements

#### *The Pacific Northwest Coordination Agreement*

The Pacific Northwest Coordination Agreement (the "PNCA") is an agreement among the various owners of major hydroelectric plants and electric systems in the Pacific Northwest. The PNCA provides the framework for optimizing the energy production in the Pacific Northwest, primarily by coordinating the operation of the hydro facilities in the Columbia River Basin. A map of facilities subject to the PNCA, which include PPL Montana's Kerr and Thompson Falls plants, is shown in Figure 19 below.

Participants in the PNCA submit their hydroelectric resources (with operating constraints, if any) and their desired loads to a planning process that determines the total firm load that the system can serve over the "critical period." Each participant is assigned an allocated share of "firm load carrying capability" as a result of that planning process. Operating the entire system to produce optimum energy can produce mismatches between project generation and the project owner's concurrent needs, so the PNCA includes provisions that require individual plants to operate in a certain manner to participate in the overall benefits of coordination. Scheduling of "interchange energy" from parties who have excess energy during a time period to parties that have a concurrent deficiency ensures that each party to the agreement can serve their firm load while operating their facilities in compliance with the optimization plan developed under the PNCA. The interchange energy is returned as conditions change or is settled out for cash if imbalances remain at the end of the reservoir refill period.

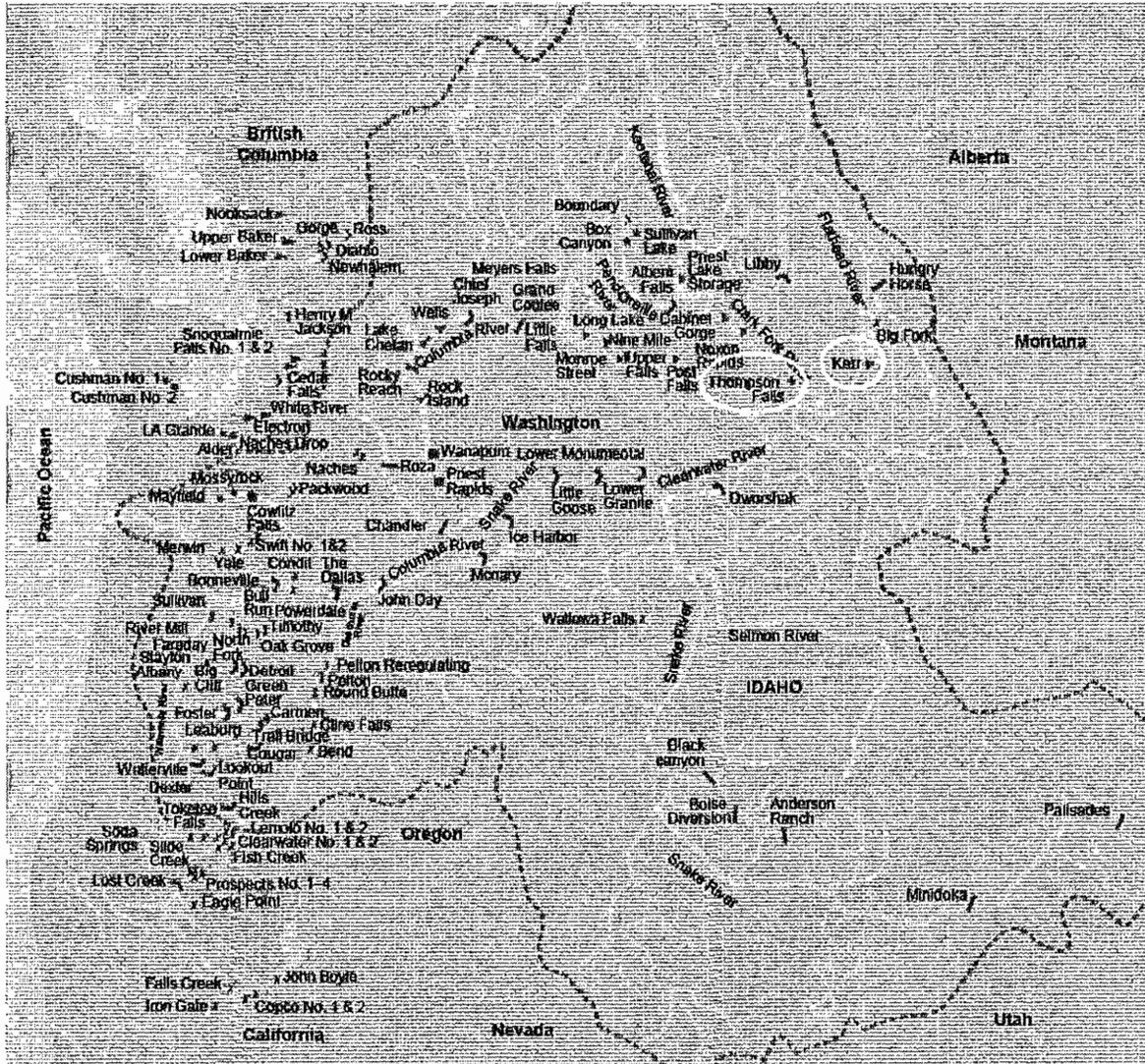
The PNCA provides for headwater benefits<sup>1</sup> to be paid to reservoir operators by all downstream entities under a FERC-approved methodology. Under the PNCA, PPL Montana pays for benefits received at Kerr and Thompson Falls from the storage in the Hungry Horse Project, and PPL Montana receives payment for benefits downstream projects receive from the storage at Kerr.

Note:

<sup>1</sup> Under section 10(f) of the Federal Power Act, an owner of a hydropower project is required to reimburse upstream headwater project owners for an equitable part of the benefits it receives. These benefits, referred to as headwater benefits, are the additional energy production possible at a downstream hydropower project resulting from the regulation of river flows by an upstream storage reservoir.

# Facilities Overview

Figure 19 Hydroelectric Projects Owned by PNCA Parties



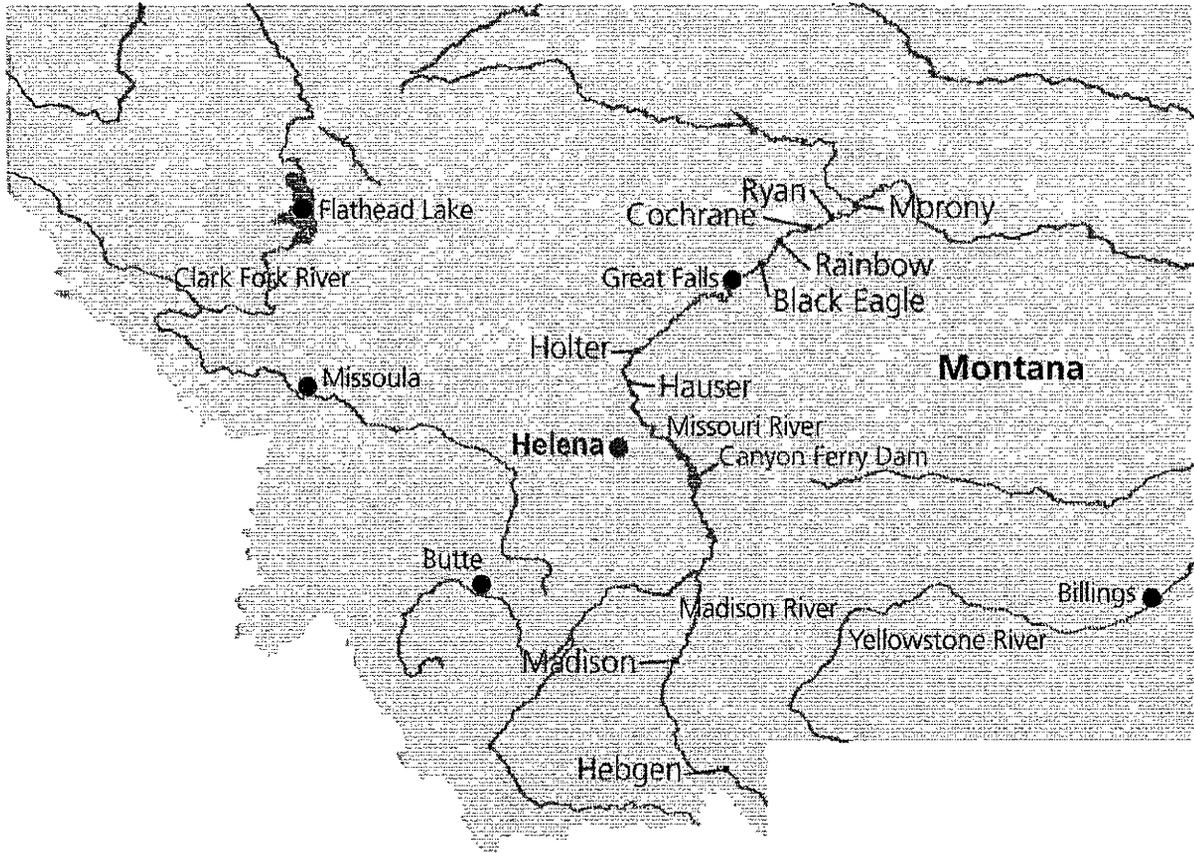
## The Missouri River Coordination Agreement

PPL Montana and the U.S. government (acting through the U.S. Bureau of Reclamation (“BOR”)) are parties to the Missouri River Coordination Agreement (the “MRCA”). This agreement, which was originally signed in 1972, is intended to optimize the generation on the Missouri and Madison Rivers to protect the generating capability that existed before the BOR’s Canyon Ferry Hydroelectric Project was built, and to provide for the payment of headwater benefits for the extra useable water that Canyon Ferry’s construction provides PPL Montana. The Hebgen Reservoir and the Madison plant are on the Madison River, upstream of Canyon Ferry, while Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony plants are on the Missouri River downstream of

# Facilities Overview

Canyon Ferry.

Figure 20 Hydroelectric Projects Coordinated by MRCA



The MRCA generally provides that Canyon Ferry will release enough water to provide PPL Montana with a specific minimum amount of generation from its seven downstream plants. This provision has been implemented in some dry years. The MRCA also provides that in an extended drought, the Hebgen and Canyon Ferry projects will be drafted to specified levels. If an extreme drought persists, all the Missouri-Madison reservoirs could potentially be emptied.

PPL Montana and PPL EnergyPlus's Western Power Marketing group have established a good working relationship with the BOR for coordinating the operations on the Missouri River. That cooperation goes beyond, and sometimes supplants, the strict procedures in the MRCA, especially with respect to current conditions that were not anticipated or provided for when the MRCA was prepared.

## Hydroelectric License Commitments

### *Kerr Project*

The Kerr project license was jointly issued by the FERC to The Montana Power Company and the

## Facilities Overview

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CSKT in 1985 for a 50-year term. Between 2015 and 2025, the CSKT have the option to purchase, hold and operate the project for the remainder of the license term, which term expires in 2035. PPL Montana's current calculation of the conveyance price is \$51.6 million. The CSKT disputed this calculation and the parties are currently involved in the preliminary stages of discovery for binding arbitration before a panel of the American Arbitration Association pursuant to the license. Hearing of the matter before the panel is currently scheduled to begin January 22, 2014 and the FERC license provides that the arbitration panel is to issue a decision on or before March 5, 2014. PPL Montana expects the CSKT to exercise the purchase option and pay the conveyance price at their earliest opportunity in September 2015, at which time PPL Montana's interest in the project will vest in the CSKT without further action.

Under the terms of the license, PPL Montana must pay an annual rent to the CSKT for use of their property on which the Kerr project is located. Rent expense for 2011 was \$18.4 million and the rent expense for 2012 was \$19.0 million. The rent is escalated annually based on changes in CPI. The obligation to pay rent will terminate if the CSKT exercise their purchase option.

The license also requires PPL Montana to continue to implement a plan to mitigate the impact of the Kerr project on fish, wildlife and their habitats. Under this arrangement, PPL Montana has a remaining commitment to spend \$6 million between 2013 and 2015, at which time the CSKT is expected to take ownership of the project.

### *Missouri-Madison Project*

PPL Montana entered into two Memoranda of Understanding (the "MOUs") with state, federal and private entities related to the issuance in 2000 of the FERC renewal license for the nine dams comprising the Missouri-Madison Project. The MOUs are periodically updated and renewed and require PPL Montana to implement plans to mitigate the impact of its projects on fish, wildlife and their habitats, and to increase recreational opportunities. The MOUs were created to maximize collaboration between the parties and enhance the possibility to receive matching funds from relevant federal agencies. Under these arrangements, PPL Montana has a remaining commitment to spend \$30 million between 2013 and 2040. A majority of the commitment will be expensed as incurred.

## **D. Employees**

The Hydro Facilities are operated by a staff of 73 full-time employees (49 union, 24 non-union) and are generally staffed eight hours per day, five days per week by a team of operators who live either in PPL Montana-provided housing or in the area. An operator is on call 24 hours per day for each plant. The five plants near Great Falls are staffed collectively and are controlled from a central control room located at the Rainbow Plant, which is staffed 24 hours per day. For major maintenance in Great Falls, PPL Montana maintains a maintenance staff at the Rainbow shop located in Great Falls. The shop is staffed with 14 union employees.

The 49 unionized Hydro Facilities employees are members of IBEW Local 44.

## Facilities Overview

Figure 21 Hydro Employees

Project/Plant	Union	Non-Union
Hebgen	(staffed from Madison)	—
Madison	4	—
Hauser	4	—
Holter	3	—
Black Eagle	(staffed from Great Falls)	—
Rainbow	(staffed from Great Falls)	—
Cochrane	(staffed from Great Falls)	—
Ryan	(staffed from Great Falls)	—
Morony	(staffed from Great Falls)	—
Kerr	3	—
Thompson Falls	4	—
Mystic	3	—
Great Falls Operations	14	—
Great Falls Maintenance (located at Rainbow shop)	14	—
Great Falls Management & Engineering	—	10
Hydro Engineering (located in Butte)	—	10
Hydro Compliance (located in Butte)	—	4
<b>Total Employees</b>	<b>49</b>	<b>24</b>

Figure 22 Historical Performance

Plant	No. of Units	Total Capacity (MW)	5 Year Historical Average Annual Generation (GWh)	5 Year Historical Plant Capacity Factor (%)
Black Eagle	3	21	136	73.6
Cochrane	2	64	276	49.1
Hauser	6	19	132	79.3
Holter	4	48	305	72.4
Kerr	3	194	1,098	64.5
Madison	4	8	63	89.2
Morony	2	48	268	63.8
Mystic	2	12	51	48.2
Rainbow (data shown for units to be retired)	8	36	245	77.5
Ryan	6	60	420	79.8
Thompson Falls	7	94	496	60.1
<b>Total</b>		<b>604</b>	<b>3,488</b>	<b>65.8</b>

## SECTION 4

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# Management and Support

# Management and Support

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## A. Compliance

### Health and Safety

PPL Montana is a leader in employee safety, becoming the first private company in Montana to earn the federal government's highest recognition for excellence in voluntary occupational safety and health programs. The Kerr, Madison, Hebgen, Holter, Hauser and Thompson Falls plants have been designated by OSHA as "VPP Star" plants. The Voluntary Protection Program ("VPP") is an OSHA cooperative program that recognizes employees and workers in private industry and state agencies for the implementation of effective health and safety management systems that maintain injury and illness rates below the respective averages for their industries. VPP participants are exempt from OSHA programmed inspections while they maintain their VPP status.

The table below provides an overview of PPL Montana's OSHA reportable incident rates for the Facilities, which have been consistently below the average for electric power generators:

Figure 23 Employee Incidents

	2008	2009	2010	2011	2012
OSHA Recordables	1	2	3	4	0
OSHA Incident Rate <sup>1</sup>	1.33	2.71	4.2	5.04	0
Severity Rate <sup>2</sup>	2.65	0	5.36	8.83	0
Lost Time Incidents	1	1	2	1	0

Notes:

- 1 Equals number of injuries and illnesses multiplied by 200,000 divided by employee hours worked.
- 2 A mathematical calculation that describes the number of lost days per number of recordable incidents.

### Environmental

PPL Montana endeavors to generate electricity in an efficient manner, and to meet or exceed all applicable environmental laws and regulations. PPL Montana has a solid record of environmental compliance at the Hydro Facilities and maintains an excellent relationship with the Montana Department of Environmental Quality. When non-compliance has been identified, PPL Montana has moved quickly to address the issue. Since PPL Montana acquired the Facilities there have been no material penalties imposed with respect to their operation. Figure 24 lists the notices of violation received by PPL Montana with regards to the Facilities within the previous five years.

## Management and Support

Figure 24 Facilities Notices of Violations and Penalties

Year	Location	Type	Description
2010	Thompson Falls	NOV – No Fine	During fish ladder construction, frost on equipment melted during warm day, carrying small amount of oil (~1/4 ounce) into water causing a sheen. Implemented corrective actions to contain oil residual from equipment.
2010	Madison	NOV – No Fine	Boulder fell on dam, damaged hydraulic lines and spilled about 12 gallons of hydraulic oil into river. Oil booms placed downstream to capture oil. Rock cliff anchors installed along with a rock fence to prevent this type of incident from occurring in future.
2012	Ryan	NOV – No Fine	Violation letter for failure to maintain proper chlorine residual of the drinking water system

### Environmental and Community Investment

PPL Montana's commitment to the environment is reflected in its financial contributions in support of environmental and community development initiatives throughout the State of Montana. Along the rivers and streams where it operates, PPL Montana has invested millions in fisheries, wildlife habitat and recreational improvements, and its investments have in many cases attracted matched funding from federal, state and non-governmental entities. The Facilities are situated in some of the most scenic areas of the state, and PPL Montana works with a variety of stakeholders to provide recreation opportunities that benefit Montana residents and create business opportunities for recreation providers.

Additionally, PPL Montana supports various local organizations that are addressing issues related to the environment, economic development and education, and has awarded 160 grants and donated \$1 million over the past five years to such programs. Also, more than 50 business and community leaders from across the state have served at various times on an advisory board established by PPL Montana to guide these contributions.

### Water Rights

PPL Montana owns water rights necessary for the operation of the Facilities. All water rights claims throughout the state are currently being adjudicated in the Montana Water Court and PPL Montana believes its rights will be finally adjudicated as filed.

Water use in Montana is generally guided by the prior appropriation doctrine common in the West. One of the legal principles under the prior appropriation doctrine is "first in time is first in right" – i.e., the first person to use water from a source establishes the first right, the second person is free to divert flows from what is left, and so on. During a dry year, the person with the earliest priority date has the first chance at the available water to the limit of the person's established right. The holder of the second priority date has the next chance, and so on.

## Management and Support

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PPL Montana's water rights associated with the Facilities are considered "senior" water rights because those rights generally have very early priority dates and because the flow of the source is considered more than adequate. It appears unlikely that those water rights claims would be adversely affected through the adjudication process in a manner that would be expected to materially affect the operation of the hydro projects. PPL Montana's water rights associated with the Hydro Facilities would be transferred to Hydro Newco as part of the pre-closing reorganization.

### **FERC & NERC**

PPL Montana is certified as an Exempt Wholesale Generator ("EWG") with FERC and is authorized by FERC to sell electricity at market-based rates. Additionally, as discussed more fully in "Facilities Overview" above, the Facilities operate under various hydroelectric licenses issued by FERC.

PPL Montana assets are in the WECC's NERC Region. WECC is charged with monitoring and enforcing compliance with the NERC Reliability Standards in its region. PPL Montana is registered with NERC in the following functional categories: Generator Owner, Generator Operator and Purchasing-Selling Entity. In addition, PPL EnergyPlus is also registered in WECC as a Purchasing-Selling Entity.

In 2010, WECC completed a non-CIP legacy standards audit of PPL Montana. There were no findings of non-compliance. To date, PPL Montana has not been subject to an audit for compliance with NERC's Critical Infrastructure Protection ("CIP") Cyber Security Reliability Standards.

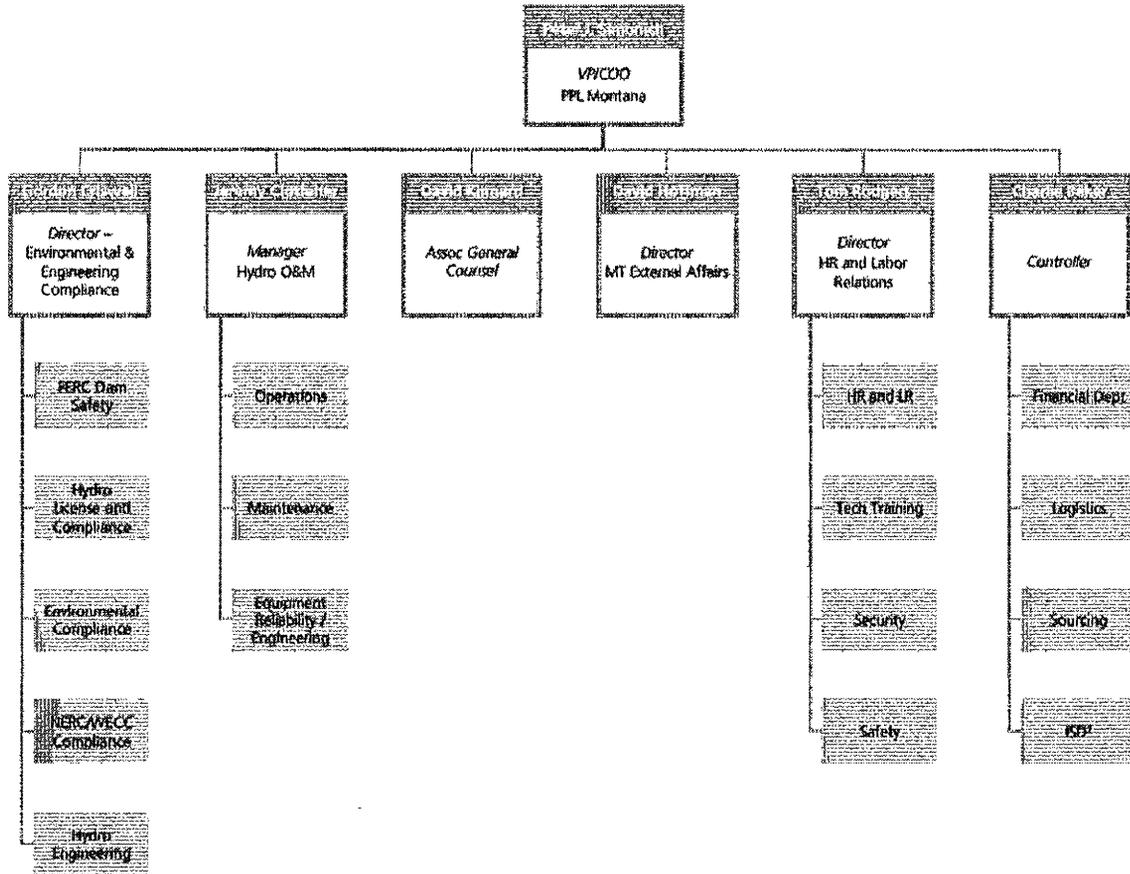
From time to time, PPL Montana has identified potential noncompliance with the NERC Reliability Standards and has self-reported such issues to WECC. The penalties assessed by WECC have been minor (both on an individual and on an aggregate basis) in recognition of the nature of the alleged violations and the quality of PPL Montana's NERC compliance program.

It is expected that prior to completing the pre-closing reorganization, Hydro Newco would be certified as an EWG with FERC and obtain market-based-rate authorization, and would be registered with NERC as a Generator Owner, Generator Operator and Purchasing-Selling Entity. The FERC hydro licenses for the Facilities would be transferred to Hydro Newco as part of the reorganization.

# Management and Support

## B. Management Organization

Figure 25 Leadership Team<sup>1</sup>



Notes:

- 1 Excludes Western Power Marketing Business, shown in Figure 27, as well as those employees who are exclusively associated with the thermal facilities.
- 2 Information Services Department.

PPL Montana’s experienced management team is based primarily at the company’s corporate headquarters in Billings. Most of this team has been with PPL Montana since it acquired the Facilities, and its members have an average of 29 years of experience in the industry.

# Management and Support

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## Leadership Team Biographies

Peter Simonich, *Vice President & Chief Operating Officer*

Pete, with more than 30 years of experience in the industry, serves as PPL Montana's vice president and chief operating officer with responsibility for management and operation of PPL's hydroelectric and fossil-fuel generating plants in the state. Prior to his current position, Pete served as manager of generating assets responsible for PPL Montana hydro and environmental compliance areas and Colstrip plant manager.

Charlie Baker, *Controller*

Charlie has more than 15 years of auditing and accounting experience, much of it in the utility industry. Baker joined PPL Montana in November 2000 as manager of Financial Reporting and was promoted to financial controller of PPL Montana in 2002. Prior to joining PPL, Baker was an audit manager with KPMG, LLP.

David Kinnard, *Associate General Counsel*

Dave joined PPL in 1999 as one of its first Montana employees and supervised the final legal details of the acquisition of generation assets of the Montana Power Company. Before joining PPL, he was vice president and general counsel for United Tote Company of Shepherd, MT for nine years.

Gordon Criswell, *Director – Environmental and Engineering Compliance*

Gordon has worked with Montana generation since 1980 in the areas of engineering and environmental. He oversees NERC compliance, environmental compliance, hydro dam safety and hydro licensing compliance. Prior to his current position, Criswell worked at the Colstrip Facility for 28 years in the design, start-up, environmental and plant engineering areas.

Jeremy Clotfelter, *Plant Manager – Hydro O&M*

Jeremy joined PPL Montana in 1993 at the Colstrip power plant and has nearly 20 years of electric generating experience. He moved to the hydroelectric side of PPL Montana in 2006 and is responsible for the operation and maintenance of PPL Montana's hydroelectric facilities. Prior to joining PPL Montana, Jeremy worked at the Anaconda Smelter superfund site as an environmental engineer.

David Hoffman, *Director – Montana External Affairs*

David joined PPL in 2002 as the director of external affairs for PPL Montana. His duties include oversight of government relations, regulatory affairs and community relations. Prior to joining PPL, Hoffman practiced law in Montana, served in the Montana House of Representatives and was an administrator of the Utility Division of the Montana Public Service Commission ("MPSC"). David is based in Helena, MT.

## Management and Support

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Tom Rodgers, *Director – Human Resources and Labor Relations*

Tom joined PPL in 2009 and has more than 20 years of experience as a human resources professional with expertise in labor relations and organizational development. In addition to having previous experience as an independent consultant providing guidance and leadership to numerous companies, Rodgers was formerly vice president of human resources for Alliant Techsystems Inc.

### **C. Compensation and Employee Benefits**

PPL Montana maintains competitive compensation and benefit programs for its employees consisting of base pay and incentive compensation as well as a comprehensive benefits package. Generally, all of PPL Montana's employees participate, or have the opportunity to participate, in tax qualified defined benefit and/or defined contribution pension plans, as well as a variety of health and welfare plans and programs. Additionally, PPL Montana's non-union employees are eligible for certain forms of incentive compensation. A brief description of the employee benefit programs available to the PPL Montana hydro employees is set forth below.

#### **Pensions and Post-Retirement Benefit Plans**

PPL Services Corporation sponsors a defined benefit (cash balance) pension plan for PPL Montana employees, and PPL Montana sponsors an unfunded other postretirement benefit plan providing for certain retiree medical benefits.<sup>1</sup> The pension plan is closed to salaried (non-union) employees hired on or after January 1, 2012. Both plans are closed to IBEW Local 44 employees hired on or after July 1, 2013.

The defined benefit pension plan is invested in the PPL Services Corporation Master Trust that also includes other subsidiary pension plans and two 401(h) accounts that are restricted for certain other postretirement benefit obligations. It is anticipated that at or prior to the closing of the Transaction, Hydro Newco would become the sole sponsor of the pension plan covering the PPL Montana hydro employees and that following closing, the Master Trust assets attributable to the pension plan covering the PPL Montana hydro employees would be transferred to a new or existing pension trust established by Hydro Newco or the new owner. Hydro Newco would also adopt a post-retirement medical benefits plan substantially the same as the existing PPL Montana plan.

Note:

<sup>1</sup> PPL Montana is also a sponsor of the pension plan; PPL Services Corporation is the plan's sponsor for administrative and reporting purposes

# Management and Support

## Health Plans & Other Benefits

The PPL Montana hydro employees participate in PPL's health plan, which consists of medical and dental coverage, including a prescription drug plan.

Other PPL benefits provided to the PPL Montana hydro employees include:

- Life insurance
- Accidental death and dismemberment insurance
- Short-term disability
- Long-term disability
- Dependent life insurance
- Vision
- Flexible Spending Accounts
- 401(k) plan supplementing defined benefit pension plan (PPL Subsidiary Savings Plan)<sup>1</sup>
- 401(k) plan with enhanced employer matching (PPL Retirement Savings Plan)<sup>2</sup>

## D. Offices

In addition to the Facilities, which are located throughout Montana, PPL Montana maintains office space in Billings, Butte and Helena. PPL Montana owns the Butte office and leases the office space in Billings and Helena.

Figure 26 Office Space Overview

	Billings	Butte	Helena
Function	Management, Financial, Compliance, HR, Legal, ISD, <sup>3</sup> Records Management	EPlus Trading Floor, ISD, <sup>3</sup> Hydro Engineering	Govt. Affairs, Compliance
Lease Expiration	04/30/2021	N/A – owned	04/30/2015
Annual Base Rent	\$241,185 (5/1/13 – 4/30/14; escalates ~ 2.5% per annum)	N/A – owned	\$29,979 (escalates 3% per annum)

Notes:

- 1 Non-union employees hired before January 1, 2012 and Local 44 employees hired before July 1, 2013.
- 2 Non-union employees hired on or after January 1, 2012 and Local 44 employees hired on or after July 1, 2013
- 3 Information Services Department.

# Management and Support

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## E. Collective Bargaining Agreements

PPL Montana has maintained a positive labor-management working relationship – in the 13 years since PPL Montana acquired the Facilities, there have been no material labor disputes. PPL Montana recently agreed with IBEW Local 44 upon a new collective bargaining agreement that will remain in effect through April 30, 2017. This agreement was ratified by the union in May 2013. Hydro Newco would assume the collective bargaining agreement with respect to the union employees transferred to Hydro Newco in connection with the pre-closing reorganization.

## F. Shared Services

Management of the Facilities requires utilization of several shared business services supplied by other PPL affiliates such as corporate accounting, corporate tax, financial reporting, legal, supply chain, and compensation and benefits administration. These services are performed locally at both the Montana office locations as well as in the field along with support from PPL corporate headquarters in Allentown. These services are performed across both the thermal and hydro facilities. As the Allentown-based employees are expected to remain with PPL, a prospective buyer will need to make its own assessment regarding the need for these services after closing.

Information technology is a centrally managed service within PPL using standard processes and common technology. Very little technology is deployed locally; most application systems used to support the Facilities are used across all sectors of the Company. These applications are accessible via PPL's proprietary data network ("PPLNet") and are normally served from PPL's central computer centers across this network. As such, and with very few exceptions, the licenses for the business systems and applications in use by PPL for management of the Facilities, and by PPL EnergyPlus in Montana, will not transfer with the sale and will remain with PPL.

To support access to information technology, including internet and intranet access, use of business applications, and use of corporate email and calendars, network connectivity has been established between the Montana offices and PPL's headquarters in Allentown. Local area networks are in place within Montana to serve the Facilities as well as the Montana office locations. These local area networks exist on a wide area network backbone that provides connectivity to the corporate IT assets.

Corporate supplied end-point devices, including workstations, laptops and printers are in use at the various facilities; these devices typically use corporate supplied software including Microsoft Office, Symantec end-point virus protection, and other personal productivity tools. License rights to these products will remain with PPL; the devices themselves will be transferred.

PPL is willing to consider providing transition services covering these shared services as part of the Transaction, for a limited time and on a negotiated basis.

## G. Legal

### Riverbed Litigation

Over the past decade, PPL Montana has been involved in litigation with the State of Montana as to

## Management and Support

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whether lease payments or other compensation is owed to the State by PPL Montana for its use of certain of the Facilities and occupancy of riverbeds in Montana for the period following PPL Montana's acquisition of the hydroelectric facilities in December 1999. The State contends that the beds of Montana's navigable rivers became state-owned trust property upon Montana's admission to statehood, and that the use of them should, under a 1931 regulatory scheme enacted after all but one of the Facilities in question were constructed, trigger lease payments for use of land beneath. PPL Montana contends that the riverbeds were not navigable at the time of Montana's admission to statehood and therefore title to the riverbeds remains with the U.S.

In June 2008, the Montana District Court awarded the State retroactive compensation of approximately \$34.7 million for the 2000-2006 period and approximately \$6.2 million for 2007 compensation. Those unpaid amounts continued to accrue interest at 10 percent per year. The Montana District Court also deferred determination of compensation for 2008 and future years to the Montana State Land Board. In October 2008, PPL Montana appealed the decision to the Montana Supreme Court, requesting a stay of judgment and a stay of the Land Board's authority to assess compensation for 2008 and future periods.

In March 2010, the Montana Supreme Court substantially affirmed the June 2008 Montana District Court decision. PPL Montana appealed this decision to the U.S. Supreme Court, and on February 22, 2012, the U.S. Supreme Court issued a unanimous decision overturning the Montana Supreme Court decision and remanded the case to the Montana State courts for further proceedings consistent with the U.S. Supreme Court's opinion. Further proceedings have not yet been scheduled by the Montana District Court nor has the Montana Attorney General attempted to take any further action with regards to the litigation since the issuance of the U.S. Supreme Court decision.

PPL Montana believes the U.S. Supreme Court decision resolves certain questions of liability in this case in favor of PPL Montana and leaves open for reconsideration by the Montana courts, consistent with the findings of the U.S. Supreme Court, certain other questions. Specifically, the U.S. Supreme Court held, as a matter of law, that the segments of the Missouri River involving PPL Montana's dams near Great Falls (Black Eagle, Rainbow, Cochrane, Ryan and Morony) were not navigable at the time of statehood. As to the remaining five dams involved (Hebgen, Madison, Hauser, Holter, and Thompson Falls), the Court noted there is a "significant likelihood" that the river segments at issue would also fail the federal navigability test. Upon issuance of the U.S. Supreme Court's decision, PPL Montana reversed its loss contingency accrual of approximately \$89 million. Any future losses arising from this matter are not expected to be material.

# Management and Support

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## H. Insurance

PPL maintains usual and customary insurance programs for the Facilities.

Property coverage is provided under the PPL Corporate All Risk Property insurance program, which is provided by FM Global and has a per-accident limit of \$4.0 billion and a per-accident deductible of \$2.5 million.

PPL Montana is insured for public liability claims under the PPL Corporate Liability insurance program, which has a per claim limit of \$225 million and a per claim deductible of \$4 million.

PPL Montana maintains a \$500,000 vehicle liability policy covering the operation of PPL Montana vehicles

For workers' compensation, PPL Montana is insured under the PPL Corporate Statutory Workers' Compensation policy, which has a deductible of \$5,000,000 per accident. PPL Montana also maintains a claim accrual account for the cost of workers' compensation claims that fall under the deductible.

PPL Montana is a member of the Western Interconnected Electric Systems Insurance Program ("WIES"), which protects against third party liability claims arising out of electrical disturbances from the Western Interconnected Transmission System. The coverage limit is \$9,000,000 and the deductible is \$1,000,000.

PPL would maintain similar coverage for Hydro Newco prior to closing of the Transaction, and the buyer would be responsible for replacement coverage going forward.

## I. Affiliate Credit Facility and Credit Support

PPL Montana funds capital expenditures and otherwise satisfies its liquidity needs in part pursuant to a \$100 million credit facility provided by its affiliate, PPL Investment Corporation. This facility would be terminated and amounts due repaid or cancelled at or prior to closing of the Transaction.

SECTION 5

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# Western Power Marketing Business

# Western Power Marketing Business

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## A. Western Power Marketing Business Overview

PPL EnergyPlus is a wholly owned, indirect subsidiary of PPL and acts as its power marketing arm, managing wholesale supply portfolios and aggregating retail load throughout the Mid-Atlantic, Northeast and West. PPL Montana currently has a contract to sell the output of its facilities to PPL EnergyPlus, which resells the output in wholesale and retail transactions.<sup>1</sup> PPL EnergyPlus owns the Book and has a group of 21 employees located in Butte, Montana that perform power marketing activities, as well as various asset management activities, exclusively relating to PPL Montana. Bidders interested in acquiring this Western Power Marketing Business will have the opportunity to bid separately for this business in connection with the Transaction process.

PPL EnergyPlus's marketing objective with respect to the PPL Montana facilities is to maintain a strong competitive position as an asset-backed marketer of energy products and services in the WECC at the wholesale and retail levels. To achieve this objective, PPL EnergyPlus:

- Endeavors to penetrate high-value markets and optimize the facilities to increase revenue and profitability
- Markets diverse energy products and services by developing a profitable menu of structured financial and physical products that meet customer needs
- Maintains a risk and credit management program to quantify, manage, and hedge risks and exposures

PPL EnergyPlus's primary market objective is to develop a portfolio of wholesale term contracts, spot market sales, and retail contracts in regions throughout the WECC to ensure a diversity of revenue streams and avoid over-reliance on any one market or customer class. PPL EnergyPlus's portfolio approach helps ensure positive margins for a significant amount of available energy and enables PPL EnergyPlus also to benefit from short-term price variations.

Generally, PPL EnergyPlus strives to sell as much power as possible from the facilities within Montana, given the proximity of the generating assets and in order to minimize transmission costs. However, PPL EnergyPlus is a net exporter of power into other markets within the regional Northwest market and a substantial portion of exports occurs in off-peak periods during the night. Transmission capacity both in and out of the state comes from four major transmission paths: west to the Northwest, southwest to Idaho, southeast to Wyoming and east to North Dakota through the AC/DC transmission interconnection (See Figure 3). Following the completion of the Montana-Alberta Tie Line, a fifth transmission path will be added north to Alberta, Canada.

Note:

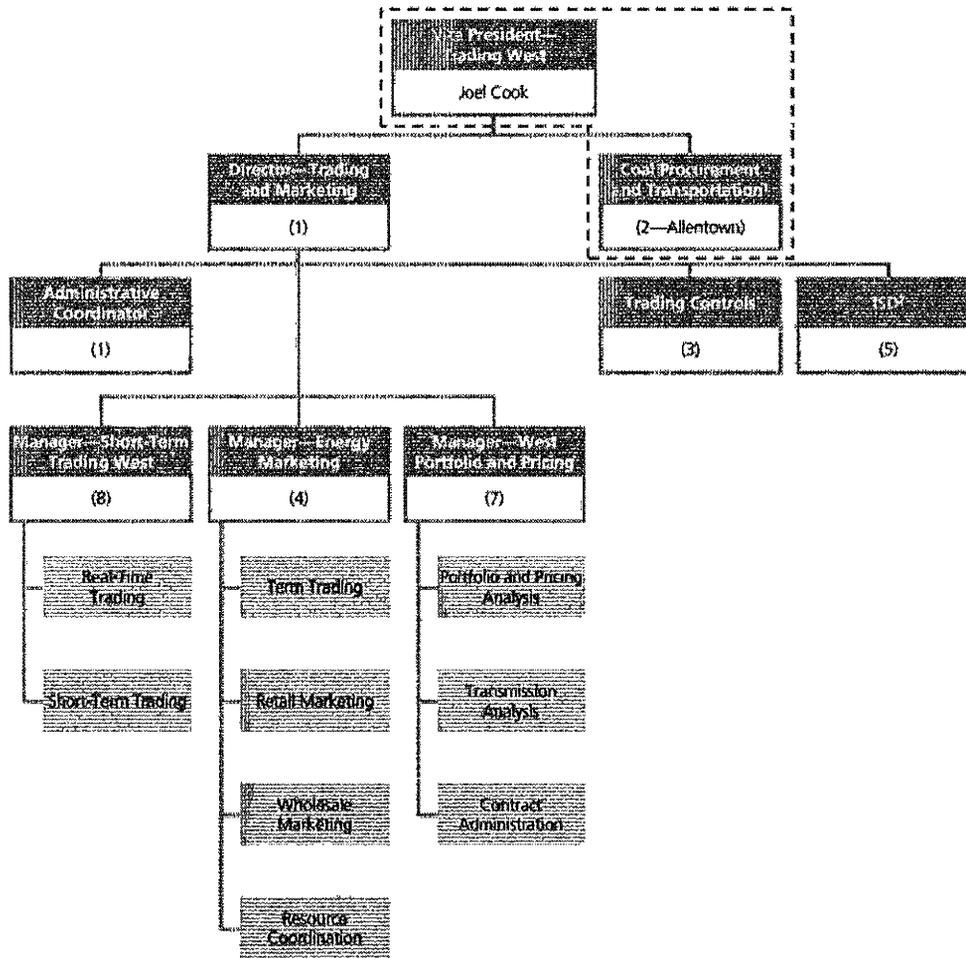
<sup>1</sup> This agreement is expected to be terminated with respect to the Facilities upon closing of the Transaction, subject to any transitional requirements of PPL EnergyPlus with respect to the Western Power Marketing Business.

# Western Power Marketing Business

## Organization

Below is a chart that shows the organizational structure of the Western Power Marketing Business:

Figure 27 PPL EnergyPlus Western Power Marketing Organizational Chart



  Indicates positions that are not included in the sale; all others are intended to be included

**Notes:**

- 1 Fuel procurement is provided by PPL EnergyPlus in Allentown, not by the Western Power Marketing staff in Montana. However, employees located in Montana have the necessary expertise to perform the fuel procurement function.
- 2 Refers to Information Services Department, which supports both the Western Power Marketing Business and the PPL Montana hydro operations.

## Management

Joel Cook is Vice President of Retail Marketing and Western Trading of PPL EnergyPlus. Joel oversees PPL EnergyPlus's Western Marketing and Trading activities in the western U.S. as well as all oil and natural gas trading and marketing in the northeast U.S. Cook joined PPL in 1999 and was named vice president in June 2008. Prior to joining PPL, Cook served as director of trading and operations for Montana Power Company.

# Western Power Marketing Business

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## Wholesale

The Western Power Marketing Business has the resources and expertise necessary to succeed in the wholesale markets throughout the WECC. Its employees possess valuable experience marketing the output of the PPL Montana facilities that enhances PPL EnergyPlus's access to wholesale markets. Their experience and familiarity with the assets and the WECC market provide a unique opportunity to leverage existing experience and relationships. The excellent staff of professional power industry personnel has many decades of experience related to the generation, production, marketing, dispatching, transmission, and distribution of energy. Western Power Marketing employees are well known throughout the WECC, and the group is respected as an innovative organization and fair partner. The Western Power Marketing staff knows and understands the market, the players, and the transmission infrastructure in the WECC. The Western Power Marketing trading floor is staffed around-the-clock, 24 hours/day, 365 days/year to ensure that the supply of energy meets the demand. The staff has marketed power on a real-time basis for decades. The team supplies customers' load through a combination of long-term purchase contracts and purchases in the spot market. The personnel have extensive experience in commodity risk management and have attended to supply reliability issues for decades.

## Retail

PPL EnergyPlus has also implemented a retail marketing plan aimed at optimizing the value of PPL Montana's facilities. The primary target of PPL EnergyPlus's retail marketing efforts is the large end users within Montana who have peak demands of approximately 5 MW or more, and those who currently have choice above 1 MW. These end users, who (subject to certain restrictions) have the ability to choose alternate energy suppliers, represent a large portion of the state's end-use consumption. PPL EnergyPlus, through the Western Power Marketing Business, is in the best position to serve these customers, due to its employees' experience and knowledge of the market, their excellent customer service, and proximity to the customers. The valuable experience and customer connections of PPL EnergyPlus's Western Power Marketing employees significantly enhance the retail marketing effort.

## Western Power Marketing Business

The following table illustrates the estimated historical incremental revenue generated from PPL Montana's facilities by the operations of the Western Power Marketing Business:

Figure 28 Western Power Marketing Business Historical Incremental Revenue

	2009	2010	2011	2012
<b>Revenues (\$mm)</b>				
Wholesale Revenues	429.1	403.9	383.0	219.5
Retail Revenues	109.4	100.4	83.8	76.1
<b>Volumes (GWhs)</b>				
Wholesale Volumes	10,075	9,146	8,034	6,062
Retail Volumes	2,199	2,049	2,137	2,217
<b>Prices (\$/MWh)</b>				
Wholesale Price	42.59	44.16	47.67	36.21
Retail Price	49.76	49.01	39.23	34.30
ATC Mid-C Price <sup>1</sup>	32.58	32.82	23.80	19.32
<b>Incremental Revenue (\$mm)</b>				
Wholesale	100.9	103.7	191.8	102.4
Retail	37.8	33.2	33.0	33.2
<b>Total Incremental Revenue</b>	<b>138.7</b>	<b>136.9</b>	<b>224.8</b>	<b>135.6</b>

Note:

<sup>1</sup> Reflects average yearly around-the-clock (ATC) price.

### Future Impact of Existing Contracts

PPL EnergyPlus currently has several wholesale and retail contracts which are projected to account for more than 8.0 million MWh through 2017. The following table shows the volumes, average prices and projected incremental revenue from the wholesale and retail contracts that PPL EnergyPlus has entered into as of March 1, 2013 and which are expected to remain in place on or after July 1, 2013. For the wholesale contracts, first the differences between average contracted peak and off-peak prices and the average peak and off-peak realized merchant prices projected by PA Consulting as part of its Independent Energy Market Expert Report are calculated. The price differences are then multiplied by total peak and off-peak contracted fixed price volumes to produce the total incremental revenue for each year. Since all of the retail contracts are based on around-the-clock (ATC) prices, the differences between the average ATC prices and the average realized merchant prices projected by PA Consulting are calculated. Similar to the wholesale contracts, the price differences for the retail contracts are then multiplied by ATC contracted fixed price volumes to produce the total incremental revenue for each year.

# Western Power Marketing Business

Figure 29 Projected Incremental Revenue from Existing Contracts

(US\$, unless noted)	2H 2013E	2014E	2015E	2016E	2017E	2018E	2019E
<b>Wholesale Contracts</b>							
Average Peak Price - Contracted							
Average Peak Price - PA Realized Merchant Price							
Delta							
Total Wholesale Peak Generation (MWh)							
<b>Wholesale Peak Adjustment</b>							
Average Off-Peak Price - Contracted							
Average Off-Peak Price - PA Realized Merchant Price							
Delta							
Total Wholesale Off-Peak Generation (MWh)							
<b>Wholesale Off-Peak Adjustment</b>							
<b>Total Wholesale Adjustment</b>							
<b>Retail Contracts</b>							
Around-The-Clock Price - Contracted							
Around-The-Clock Price - PA Realized Merchant Price							
Delta							
Total Retail Around-The-Clock Generation (MWh)							
<b>Total Retail Adjustment</b>							
<b>Contract Projected Incremental Revenue</b>							

The direct overhead costs associated with the Western Power Marketing Business were \$4,675,810 in 2012. These costs include the wages and benefits for the 21 employees within the business and other operating costs including travel, information systems, building, office supplies and utilities expenses. These direct overhead costs do not include indirect costs associated with services and allocations from PPL EnergyPlus headquarters and its affiliates in Allentown.

## Transmission

PPL EnergyPlus procures transmission rights necessary to move the power generated by the PPL Montana facilities to fulfill PPL EnergyPlus's wholesale and resale contract obligations. The Hydro Facilities are interconnected to NorthWestern Energy's system pursuant to two generation interconnection agreements ("GIAs") between PPL Montana and NorthWestern Energy: one for the Rainbow Facility, which became effective upon completion of the Rainbow redevelopment contract (the "Rainbow GIA"), and one that covers the remainder of the Facilities (the "Grandfathered GIA").<sup>1</sup> PPL EnergyPlus uses the NorthWestern Energy system, which is directly interconnected with systems owned by other energy companies and federal power authorities, to move energy from the Facilities to delivery points inside and outside of Montana. As NorthWestern Energy's transmission system has become fully subscribed over recent years, largely as a result of new generation projects interconnecting to its system, PPL EnergyPlus has increased the amount of long-term transmission rights it procures to provide for unconstrained delivery of its generation output. In addition, PPL EnergyPlus sells a significant amount of its generation output to large end-users and resellers in Montana who then utilize their network transmission rights to move the purchased energy to their respective delivery points. The table below highlights the long-term point-to-point transmission rights currently held by PPL EnergyPlus.

Note:

<sup>1</sup> The Grandfathered GIA also covers PPL Montana's thermal facilities. It is expected that prior to closing of the Transaction the Hydro Facilities covered under the Grandfathered GIA would be covered under a separate GIA containing substantially the same terms as those within the Grandfathered GIA. This separate agreement would be transferred, along with the Rainbow GIA, to Hydro Newco in connection with the pre-closing reorganization.

# Western Power Marketing Business

Figure 30 Transmission Provider: NorthWestern Energy

Ref. #	Receipt Point	Destination Point	Price \$/MW-yr	MW	Expiration Date
72618976	Colstrip <sup>1</sup>	BPAT.NWMT	\$37,920	100	1/1/2014
72618977	NWMT.System <sup>1</sup>	JEFF	\$37,920	66	1/1/2014
72618979	NWMT.System <sup>1</sup>	JEFF	\$37,920	7	1/1/2014
73048841	NWMT.System	BRDY	\$37,920	4	5/1/2015
75012342	NWMT.System	JEFF	\$37,920	7	1/1/2016
76563427	NWMT.System <sup>2</sup>	BRDY	\$37,920	7	7/1/2018
72815335	Great Falls	BPAT.NWMT	\$37,920	25	1/1/2022
74322887	Crossover	BRDY	\$37,920	15	11/1/2015
74322920	Crossover	AVAT.NWMT	\$37,920	25	11/1/2015
74322926	Crossover	BPAT.NWMT	\$37,920	25	11/1/2015
<b>Total</b>				<b>281</b>	

Figure 31 Transmission Provider: BPA

Ref. #	Receipt Point	Destination Point	Price \$/MW-mo	MW	Expiration Date
73063071	BPAT.NWMT	MIDCREMOTE	\$1,312	50	7/1/2020
72408392	BPAT.NWMT	BPAT.PSEI	\$1,312	50	7/1/2020
<b>Total</b>				<b>100</b>	

PPL EnergyPlus's access to markets and loads is heavily contingent on this regional transmission interconnection system. However, the Montana-Alberta Tie Line, which is currently under construction, provides a new opportunity for upside to the Facilities through access to additional markets. The new merchant line with expected capacity of 300 MW is expected to provide additional opportunities to move surplus energy north into Alberta. Although the line is currently fully subscribed by wind resources, given the nature of the intermittent wind generation pattern, it is anticipated that significant opportunities will exist to utilize this new transmission capacity on a short-term or non-firm basis to enhance margins.

Additionally, in February 2008, PPL Montana submitted a generation interconnection request to the BPA to begin the process of interconnecting the Thompson Falls Plant with the BPA's 230 kV transmission system. In order to mitigate any potential effects to NorthWestern Energy's transmission system, it is expected that Thompson Falls will continue to maintain an interconnection with NorthWestern Energy. PPL Montana and BPA have completed the GIA Feasibility Study, the System Impact Study, and the Facility Study agreements. Work continues with the NEPA Study and BPA's internal Project Review Determination, which are expected to be completed and a record of decision issued in 2013. If the decision is made to move forward with the project, completion could be expected in late 2015 or early 2016. Significant expected benefits for the Western Power Marketing Business as a result of this project would include the ability to eliminate existing NorthWestern Energy transmission costs currently associated with Thompson Falls, as well as the ability to directly access the Mid-C market and loads further west. In anticipation of this new interconnect, PPL EnergyPlus has also secured 100 MW of long-term firm

Notes:

- 1 The generation point of receipt for these transmission service agreements is currently being challenged by NorthWestern Energy in a proceeding at FERC, whereby NorthWestern desires to change the point of receipt in each case to a specific generating unit to be designated by PPL.
- 2 Transmission right commences upon completion of NorthWestern upgrades not anticipated until 2014.

# Western Power Marketing Business

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transmission rights that can be redirected to the new Thompson Falls/BPA interconnect in order to provide for delivery to points west on BPA's system. The majority of the costs associated with this new interconnect are expected to be recoverable through BPA transmission credits.

## **B. Affiliate Credit Support**

PPL EnergyPlus utilizes letters of credit, as well as guarantees and cash collateral, provided by PPL Energy Supply, LLC to support the Western Power Marketing Business. A buyer purchasing the Western Power Marketing Business from PPL EnergyPlus would be expected to replace the credit support solely relating to that business upon closing. As of March 1, 2013, the total amount of letters of credit issued for the account of PPL EnergyPlus solely with respect to the Western Power Marketing Business was \$25 million.

SECTION 6

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## Financial Information – Hydro Facilities Only

# Financial Information – Hydro Facilities Only

## A. Historical Financials

The historical financial data (2009–2012) presented herein is derived from PPL Montana’s audited financials for the years ended December 31, 2009, 2010, 2011 and 2012, which were prepared in accordance with Generally Accepted Accounting Principles (“GAAP”) and have been adjusted to exclude non-recurring litigation expenses and cost allocations for shared services provided to PPL Montana by its affiliates. Revenues and margin-related expenses were allocated between the thermal and hydro facilities based on MWhs of generation for each group of assets. Net revenues include wholesale and retail revenues offset by energy purchases and other miscellaneous items. PPL Montana corporate expenses were allocated to its hydro assets based on those costs that are directly attributable to the hydro assets and costs not directly attributable to any specific assets based on MWhs of generation. Marketing expenses associated with the Western Power Marketing Business are detailed separately in Section 5.

Figure 32 Historical Financial Information related to the Facilities (hydro assets only)

(\$ in millions)	Fiscal Year Ended December 31,			
	2009A	2010A	2011A	2012A
<b>Net Revenues<sup>1</sup></b>	<b>164</b>	<b>165</b>	<b>200</b>	<b>199</b>
Cost of Fuel and Purchased Power	-	-	-	-
<b>Gross Margin</b>	<b>164</b>	<b>165</b>	<b>200</b>	<b>199</b>
<b>Operating Expenses</b>				
Other O&M Expense	(19)	(9)	(22)	(22)
Kerr - CSKT Annual Rent Expense	(18)	(18)	(18)	(19)
Property Taxes	(10)	(11)	(12)	(13)
Generation Taxes	(1)	(1)	(1)	(1)
<b>Total Plant Operating Expenses</b>	<b>(48)</b>	<b>(39)</b>	<b>(53)</b>	<b>(55)</b>
PPL Montana Corporate Expenses	(6)	(4)	(6)	(5)
<b>Total Operating Expenses</b>	<b>(54)</b>	<b>(43)</b>	<b>(59)</b>	<b>(60)</b>
<b>EBITDA</b>	<b>110</b>	<b>122</b>	<b>141</b>	<b>139</b>
<i>EBITDA Margin (%)</i>	<i>67%</i>	<i>74%</i>	<i>71%</i>	<i>70%</i>
<b>Capital Expenditures</b>				
General Hydro	19	22	18	18
Rainbow Redevelopment Project	16	82	61	27
<b>Total Capital Expenditures</b>	<b>35</b>	<b>104</b>	<b>79</b>	<b>45</b>

Note:

<sup>1</sup> Net revenues include allocated portions of wholesale and retail revenues noted in Figure 28 offset by energy purchases of \$51mm, \$37mm, \$32mm and \$23mm in 2009, 2010, 2011 and 2012, respectively, and other miscellaneous items. The revenues and energy purchases were allocated to the Facilities based on MWhs of generation as described above.

# Financial Information – Hydro Facilities Only

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## Discussion of Historical Results

### Revenue and Gross Margin

The major drivers of the year-over-year changes in revenue and EBITDA are the market prices of power, as well as the generation output and forced and planned outages. PPL Montana has a power sales agreement with PPL EnergyPlus to sell the output from the Facilities to PPL EnergyPlus.<sup>1</sup> The sale occurs at each generating station, where PPL EnergyPlus takes ownership of the output. The revenue received by PPL EnergyPlus on resale to third parties, including revenue related to wholesale and retail contracts and other hedging activity, is reduced by energy purchases, transmission expenses and other sales-related costs, and then recorded as revenue for PPL Montana.

### Operating Expenses

Operating expenses are comprised of Facility-level operating and maintenance expenses (“O&M”), rent expense to the CSKT under the Kerr project license, property taxes, generation taxes and PPL Montana corporate expenses.

Plant O&M expenses include expenses generally associated with salaries and benefits for plant employees, professional services and expenses for routine maintenance of the Facilities (including outage projects not otherwise capitalized), and Facility insurance costs.

Property taxes are determined each year by the Montana Department of Revenue in an annual valuation process. The generation tax imposed by the State of Montana is \$0.20 per MWh of generation.

PPL Montana also provides several business services to each individual Facility including corporate accounting, financial reporting, supply chain, information services, legal, environmental and human resources. These services are performed locally at both the PPL Montana headquarters as well as in the field. PPL corporate support functions are charged to PPL Montana via direct charges as well as indirect corporate allocations. The historical financial information presented herein includes those direct charges for PPL corporate support associated with the hydro assets but excludes indirect corporate allocations.

### Capital Expenditures

Over the past 5 years, PPL Montana has invested approximately \$91 million at the Facilities, excluding the Rainbow redevelopment project. As a result, the Hydro Facilities are particularly well positioned to meet current environmental regulations and perform reliably into the foreseeable future.

Note:

<sup>1</sup> This agreement is expected to be terminated with respect to the Facilities upon closing of the Transaction, subject to any transitional requirements of PPL EnergyPlus with respect to the Western Power Marketing Business.

# Financial Information – Hydro Facilities Only

## B. Financial Projections

The financial projections for the fiscal years 2013 through 2032 are based on both the market assessment report prepared by PA Consulting (the "PA Report") and PPL internal estimates. The financial projections reflect the planned sale of the Kerr Facility to the CSKT in September 2015.

### Revenue and Gross Margin

The PA Report serves as the underlying basis for the gross margin forecast in the financial projections. For the Facilities, PA Consulting relied upon the market assumptions and studies it undertook as well as its proprietary stochastic dispatch optimization model to project asset dispatch and margins for each Facility. PA Consulting also input project-specific information related to the Facilities into their analysis, including startup parameters and variable O&M. A detailed discussion of the approach and underlying assumptions can be found in the PA Report.

PA Consulting has projected on-peak and off-peak revenues by Facility which have been aggregated for all Facilities within the operating model. The projected annualized on-peak and off-peak prices are provided in Figure 33 below.

Figure 33 Projected On-Peak and Off-Peak Annualized Prices for the Facilities

(US\$)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Projected Market Power Prices</b>										
On-Peak Price	████	████	████	████	████	████	████	████	████	████
Off-Peak Price	████	████	████	████	████	████	████	████	████	████
(US\$)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>Projected Market Power Prices</b>										
On-Peak Price	████	████	████	████	████	████	████	████	████	████
Off-Peak Price	████	████	████	████	████	████	████	████	████	████

In addition to the merchant energy revenue projections that have been provided by PA Consulting, PPL has projected other revenues which include operating reserves and wholesale energy transaction (WET) taxes which represent a tax of \$0.15/MWh on all exports from the State of Montana (assumed to be 45% of total generation, consistent with the historical trend). PPL Montana treats the operating reserves and WET taxes as a reduction of revenues.

## Financial Information – Hydro Facilities Only

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PPL has also forecasted other margin-related expenses for the Facilities. These expenses have been estimated for 2013 – 2017 and are assumed to grow at a rate of 2.5% per year after 2017, consistent with the growth rate assumed in the PA Consulting report.

### Operating Expenses

Projected operating expenses consist of Facility-level operation and maintenance expenses, Kerr rent expense paid to the CSKT, property taxes, generation taxes and PPL Montana corporate expenses. All expenses from 2013 through 2017 are based on PPL internal estimates, which after 2017 are assumed to grow annually at a 2.5% inflation rate, consistent with the 2.5% assumption in the PA Report, unless specified otherwise

- Plant O&M – Operating and maintenance expenses for the Facilities. Amounts are based on PPL internal estimates and escalated at 2.5% per year after 2017.
- CSKT rent expense – Rent expense pursuant to the Kerr project license. The financial projections assume that the CSKT will exercise its right to purchase and operate the Kerr project in September 2015.
- Property taxes – Property taxes are based on PPL internal estimates from 2013 through 2017 and then grow at 1.5% thereafter. After the projected sale of the Kerr Facility, property taxes related to the Hydro Facilities are expected to fall to \$13.8 million in 2015.
- Generation taxes – A tax of \$0.20 / MWh on all generation produced by the Facilities.
- PPL Montana corporate expenses – Expenses associated with corporate expenses in Montana and allocated to the hydro assets. These groups include financial, legal, information services, insurance, human resources, supply chain, training, security, and environmental. These services are provided for the benefit of both the thermal and hydro facilities; therefore, an allocation of such services to the Facilities has been reflected in Figure 35 and Figure 36.

Operating expenses are projected to decline in 2015 from 2014 due to the assumed sale of the Kerr Facility to the CSKT.

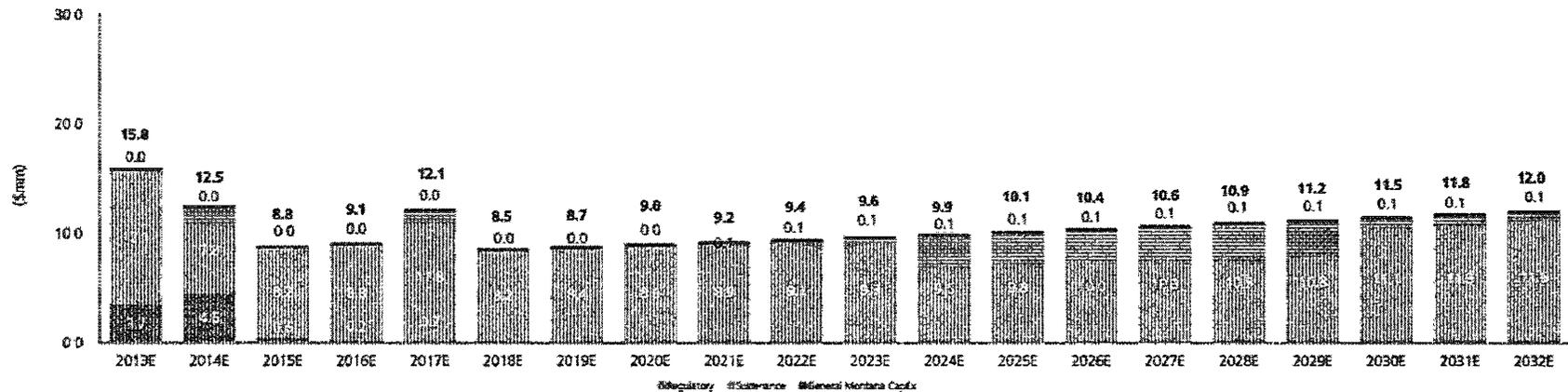
# Financial Information – Hydro Facilities Only

## Capital Expenditures

The Facilities' capital expenditures are projected to total approximately \$58 million over the next 5 years, consisting of environmental, sustenance and general capital expenditures as defined further below.

- Regulatory – Consists of projects required to meet regulations that may be required by local governments, the MPSC, FERC, safety or other regulatory or governmental agencies. The estimates for regulatory capital expenditures included in the financial projections are expected to meet all future required capital expenditures under current regulations. PPL Montana expects minimal additional expenditures beyond 2014.
- Sustenance – Sustenance capital is defined as the capital costs necessary to maintain the Facilities and to satisfy non-environmental requirements.
- General – Items are for general capital items for the various leased and owned office buildings (e.g. items such as furniture, office equipment, etc.) which have been allocated to the Facilities based upon MWs.

Figure 34 Capital Expenditure by Type



## Financial Information – Hydro Facilities Only

Figure 35 Consolidated Hydro Projected Financials

(\$ in millions)	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
<b>Revenues</b>										
Merchant Energy Revenue	90	106	101	86	94	103	113	129	161	168
Other Revenues, Net	0	0	(0)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
<b>Total Revenues</b>	<b>91</b>	<b>106</b>	<b>100</b>	<b>84</b>	<b>92</b>	<b>101</b>	<b>111</b>	<b>127</b>	<b>158</b>	<b>166</b>
Cost of Fuel	-	-	-	-	-	-	-	-	-	-
<b>Gross Margin</b>	<b>91</b>	<b>106</b>	<b>100</b>	<b>84</b>	<b>92</b>	<b>101</b>	<b>111</b>	<b>127</b>	<b>158</b>	<b>166</b>
<b>Operating Expenses</b>										
Plant O&M Expense	(23)	(22)	(22)	(19)	(20)	(21)	(21)	(22)	(22)	(23)
Kerr - CSKT Annual Rent Expense	(19)	(20)	(14)	-	-	-	-	-	-	-
Property Taxes	(14)	(15)	(14)	(14)	(14)	(14)	(14)	(15)	(15)	(15)
Generation Taxes	(1)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
<b>Total Plant Operating Expenses</b>	<b>(57)</b>	<b>(57)</b>	<b>(51)</b>	<b>(34)</b>	<b>(35)</b>	<b>(35)</b>	<b>(36)</b>	<b>(37)</b>	<b>(38)</b>	<b>(38)</b>
PPL Montana Corporate Expenses	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(7)
<b>Total Operating Expenses</b>	<b>(63)</b>	<b>(63)</b>	<b>(56)</b>	<b>(39)</b>	<b>(40)</b>	<b>(41)</b>	<b>(42)</b>	<b>(43)</b>	<b>(44)</b>	<b>(45)</b>
<b>EBITDA</b>	<b>28</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>52</b>	<b>60</b>	<b>69</b>	<b>84</b>	<b>114</b>	<b>121</b>
<i>EBITDA Margin (%)</i>	<i>31%</i>	<i>41%</i>	<i>44%</i>	<i>54%</i>	<i>56%</i>	<i>59%</i>	<i>62%</i>	<i>66%</i>	<i>72%</i>	<i>73%</i>
Plus: Pre-Tax Proceeds from Sale of Kerr	-	-	52	-	-	-	-	-	-	-
Less: Capital Expenditures	(16)	(12)	(9)	(9)	(12)	(9)	(9)	(9)	(9)	(9)
<b>Pre-Tax Net Cash Flow</b>	<b>12</b>	<b>31</b>	<b>87</b>	<b>36</b>	<b>40</b>	<b>51</b>	<b>60</b>	<b>75</b>	<b>105</b>	<b>111</b>

## Financial Information – Hydro Facilities Only

Figure 36 Consolidated Hydro Projected Financials (Continued)

(\$ in millions)	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
<b>Revenues</b>										
Merchant Energy Revenue	175	183	187	193	201	209	214	220	227	233
Other Revenues, Net	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
<b>Total Revenues</b>	<b>172</b>	<b>181</b>	<b>184</b>	<b>190</b>	<b>199</b>	<b>206</b>	<b>211</b>	<b>217</b>	<b>224</b>	<b>230</b>
Cost of Fuel	-	-	-	-	-	-	-	-	-	-
<b>Gross Margin</b>	<b>172</b>	<b>181</b>	<b>184</b>	<b>190</b>	<b>199</b>	<b>206</b>	<b>211</b>	<b>217</b>	<b>224</b>	<b>230</b>
<b>Operating Expenses</b>										
Plant O&M Expense	(23)	(24)	(25)	(25)	(26)	(27)	(27)	(28)	(29)	(29)
Kerr - CSKT Annual Rent Expense	-	-	-	-	-	-	-	-	-	-
Property Taxes	(15)	(15)	(16)	(16)	(16)	(16)	(17)	(17)	(17)	(17)
Generation Taxes	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
<b>Total Plant Operating Expenses</b>	<b>(39)</b>	<b>(40)</b>	<b>(41)</b>	<b>(42)</b>	<b>(43)</b>	<b>(44)</b>	<b>(44)</b>	<b>(45)</b>	<b>(46)</b>	<b>(47)</b>
PPL Montana Corporate Expenses	(7)	(7)	(7)	(7)	(7)	(8)	(8)	(8)	(8)	(8)
<b>Total Operating Expenses</b>	<b>(46)</b>	<b>(47)</b>	<b>(48)</b>	<b>(49)</b>	<b>(50)</b>	<b>(51)</b>	<b>(52)</b>	<b>(53)</b>	<b>(54)</b>	<b>(56)</b>
<b>EBITDA</b>	<b>126</b>	<b>134</b>	<b>136</b>	<b>141</b>	<b>149</b>	<b>155</b>	<b>159</b>	<b>164</b>	<b>169</b>	<b>174</b>
<i>EBITDA Margin (%)</i>	<i>73%</i>	<i>74%</i>	<i>74%</i>	<i>74%</i>	<i>75%</i>	<i>75%</i>	<i>75%</i>	<i>75%</i>	<i>76%</i>	<i>76%</i>
Plus: Pre-Tax Proceeds from Sale of Kerr	-	-	-	-	-	-	-	-	-	-
Less: Capital Expenditures	(10)	(10)	(10)	(10)	(11)	(11)	(11)	(11)	(12)	(12)
<b>Pre-Tax Net Cash Flow</b>	<b>117</b>	<b>124</b>	<b>126</b>	<b>131</b>	<b>138</b>	<b>144</b>	<b>148</b>	<b>153</b>	<b>157</b>	<b>162</b>

# Financial Information – Hydro Facilities Only

Figure 37 Consolidated Hydro Operating Metrics

	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Capacity (MW)	633	633	573	439	439	439	439	439	439	439	439	439	439	439	439	439	439	439	439	439
Ownership (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Peak Capacity Factor (%)	64%	64%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Off-Peak Capacity Factor (%)	64%	64%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Peak Generation (MWh)	1,989	1,989	1,811	1,388	1,385	1,385	1,385	1,388	1,385	1,385	1,385	1,388	1,385	1,385	1,385	1,388	1,385	1,385	1,385	1,388
Off-Peak Generation (MWh)	1,584	1,584	1,442	1,105	1,102	1,102	1,102	1,105	1,102	1,102	1,102	1,105	1,102	1,102	1,102	1,105	1,102	1,102	1,102	1,105
<b>Total Generation (MWh)</b>	<b>3,572</b>	<b>3,572</b>	<b>3,252</b>	<b>2,494</b>	<b>2,487</b>	<b>2,487</b>	<b>2,487</b>	<b>2,494</b>												

## APPENDIX A

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# Glossary

# Glossary

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- **Advisor** – UBS Securities LLC
- **Book** – Portfolio of wholesale and retail contracts and transmission rights associated with the Facilities
- **BOR** – U.S. Bureau of Reclamation
- **BPA** – Bonneville Power Administration
- **CC** – Combined Cycle
- **CIP** – Critical Infrastructure Protection
- **COD** – Commercial Operation Date
- **Company** – PPL Corporation
- **Corette** – J.E. Corette plant
- **CSKT** – Confederated Salish and Kootenai Tribes of the Flathead Nation
- **CT** – Combustion Turbine
- **CTS** – Colstrip Transmission System
- **EIS** – Environmental Impact Statement
- **EWG** – Exempt Wholesale Generator
- **Facilities or Hydro Facilities** – The eleven hydroelectric generation facilities and one storage reservoir that are operated and are wholly or partially owned by PPL Montana
- **FERC** – Federal Energy Regulatory Commission
- **GAAP** – Generally Accepted Accounting Principles
- **GIA** – Generation Interconnection Agreement
- **MATL** – Montana-Alberta Tie Line
- **Memorandum** – this Confidential Information Memorandum
- **MOU** – Memorandum Of Understanding
- **MPSC** – Montana Public Service Commission
- **MRCA** – Missouri River Coordination Agreement
- **MSTI** – Mountain States Transmission Intertie
- **Northwest** – a sub-region of WECC comprised of portions or all of the states of Oregon, Washington, Idaho, Utah, Montana, Wyoming, California and Nevada
- **NorthWestern Energy** – NorthWestern Corporation d/b/a NorthWestern Energy
- **PA Report** – market assessment report generated by PA Consulting
- **PNCA** – Pacific Northwest Coordination Agreement
- **PPL EnergyPlus** – PPL EnergyPlus, LLC
- **PPL Montana** – PPL Montana, LLC
- **PPL Montana Holdings** – PPL Montana Holdings, LLC

# Glossary

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- **PPL** – PPL Corporation
- **PPLNet** – PPL’s proprietary data network
- **PRB** – Powder River Basin
- **SWRTA** – Southwest Regional Transmission Association
- **Transaction** – Potential sale of the Facilities
- **VPP** – Voluntary Protection Program
- **WECC** – Western Electricity Coordinating Council
- **Western Power Marketing Business** – PPL EnergyPlus’s Western Power Marketing business
- **WIES** – Western Interconnected Electric Systems
- **WRTA** – Western Regional Transmission Association
- **WSCC** – Western Systems Coordinating Council

**NorthWestern Energy**  
**Docket D2013.12.85**  
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**Public Service Commission (PSC)**  
**Set 1 (001-035)**

Data Requests served December 27, 2013

PSC-012      Regarding:    Modeling of Risk to Dams' Output  
                 Witness:      Rhoads, part b

- a.      Did NWE conduct any versions of the DCF or LT Rev Req modeling runs where expected generation changed (for instance, as a result of a prolonged drought or major outage at a large dam), or was there only one deterministic estimate of Hydros' output for these models' purposes?
- b.      To what extent has NWE compared the 5- and 20-year production history to the longer history of flows on the Madison-Missouri, Clark Fork, and West Rosebud waterways? Provide any due diligence conducted in reference to this topic.

RESPONSE:

- a.
- b.      (Response provided January 17, 2014.)  
            The actual generation for the 2002-2011 period and the 25-year period was analyzed in the due diligence independent consultant report (Exhibit\_\_WTR-2). The 25-year period recognized the influence of Thompson Falls Unit 7 coming on line in 1995. The average annual generation for the 2002-2011 period was 3,505,000 megawatt-hours (MWh). The average annual generation for the 25-year period prior to excluding Kerr was 3,572,000 MWh. The 60-year average annual generation included on the monthly reporting is 3,600,304 MWh. Therefore, the three periods mentioned above – the 10-year, the 25-year, and the 60-year – compare within 3% of their values. The past 10 years represent the more conservative system production. Year 2001 was a below-average year with an annual production of 2,471,225 MWh. The years 2002-2005 were also below average production as the basins began to recharge from 2001.

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PSC-015      Regarding:    Carbon Forecast  
                 Witness:        Stimatz

- a.      How did NWE settle on 2021 as the year when a significant per-ton carbon price would take effect?
- b.      Did NWE run alternatives to the 2021 carbon price through its LT Rev Req or DCF models? If so, provide. If not, explain why not.
- c.      Please evaluate your DCF model using a carbon price equal to zero in all periods.
- d.      Is NWE aware of current and forward carbon prices where it is today traded, and did NWE attempt to make use of these indicators?
- e.      Did NWE make reference to other utilities' integrated resource plans (such as MDU's) and how they attempt to price the risk of carbon regulation, before settling on the method presented in your testimony?

RESPONSE (January 17, 2014):

- a.      Carbon pricing has been included in NorthWestern's price forecasts for several planning cycles. NorthWestern has discussed the timing and magnitude of potential carbon pricing with its Electric Technical Advisory Committee ("ETAC") in the process leading up to each Supply Plan, including the 2013 Plan. The 2011 Plan included a Delayed Carbon Case with implementation in 2019 along with the Base Carbon Case that had implementation in 2015. Based in part on Commission comments to the 2011 Plan (as described in the Prefiled Direct Testimony of Joseph M. Stimatz on pages 24-25), NorthWestern pushed the carbon price implementation from 2015 to 2021, which represents a further delay than was contemplated in the Delayed Carbon Case from the 2011 Supply Plan.
- b.      No. The purpose of the DCF was to arrive at a mid-range estimate of the market value of the Hydros, to be considered along with other valuation information as described in the Prefiled Direct Testimony of Brian B. Bird. The LT Rev Req model was used to estimate the revenue requirement given a purchase price.

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PSC-015 cont'd

- c. NorthWestern objects to this data request on the grounds that (1) it is beyond the proper scope of data requests in that it requires NorthWestern to make analyses that it did not make in evaluating the acquisition, (2) it can be prepared with equal ease by the Commission staff as NorthWestern has provided the electronic versions of the DCF model, and (3) the DCF model without consideration of carbon would be irrelevant and violate prior Commission orders and direction to include carbon in its planning and acquisition activities.
- d. NorthWestern is aware of carbon prices in some markets where it is traded. NorthWestern did not incorporate pricing from these markets in its estimates because the pricing is dependent on the rules specific to those markets and as such may or may not directly apply to the future regional carbon price that was needed for the DCF model.
- e. Yes. NorthWestern referred to the treatment of carbon in the planning documents of several other utilities. NorthWestern's view of the carbon price curve is toward the low end of the range of carbon prices that regional utilities have modeled. See Figure 6-11 on page 6-27 of the 2013 Supply Plan for a depiction of NorthWestern's carbon curve compared to other utilities' carbon curves. The methodology and approach used in the 2013 Supply Plan and in the evaluation of the Hydros is consistent with the modeling of carbon costs that has evolved over NorthWestern's planning cycles since the 2007 Supply Plan.

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PSC-016      Regarding:    PowerSimm  
                 Witness:        Stimatz, parts d & e

- a.      Does the “risk premium” in PowerSimm’s NPV calculations for various scenarios include a quantification of risk associated with water flows, major plant outages, and the liabilities inherent in owning large dam structures (such as plant failure due to seismicity)? Explain for each of these things how PowerSimm incorporates and measures the associated risk.
- b.      Ascend concludes, through its modeling, that “the expected cost of the Current Plus Hydro portfolio is lower than the expected cost of the Current Plus CC portfolio and the expected cost of the Current portfolio even before accounting for the differences in risk.” (JMS-44:1-4). In the LT Rev Req model, meanwhile, the “procure at market” scenario is less costly than the Hydro/Mustang portfolio, before accounting for risk. Please explain this discrepancy.
- c.      Was there any thought of using PowerSimm prior to NWE’s submission of a bid, and thus better inform the utility of the Hydros value on a portfolio basis?
- d.      Is Mr. Stimatz an expert with respect to the PowerSimm model? If so, please describe his experience with the model.
- e.      Please identify the Ascend consultant(s) who was responsible for running or helping to run the PowerSimm modeling for NWE.

RESPONSE:

- a.
- b.
- c.
- d.      (Response provided January 17, 2014.)  
            No.
- e.      (Response provided January 17, 2014.)  
            Gary Dorris.

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PSC-018      Regarding:    Cap-Ex Estimates  
                 Witness:       Rhoads

- a.      For each year represented in the LT Rev Req Model and the DCF Model, please provide an itemized list of the capital expenditures included in the exhibits as aggregate figures (i.e., Row 21 in TEM-2; Row 29 in JMS-1.)
- b.      With respect to the answer at JMS-14:5-11, further describe how these capital expenditure estimates were assembled.
- c.      Detail each instance where NWE's cap-ex estimates, represented in the above exhibits, departs from the PPLM estimates mentioned on JMS-14:7-8.
- d.      When did PPLM create its estimates of future cap-ex requirements?
- e.      Describe what NWE did to check the future cap-ex requirements of the Hydros against other similar hydro facilities in the United States and elsewhere.

RESPONSE (January 17, 2014):

- a.      Assuming that "itemized list of the Capital expenditures" means specific assets, the list exists only for 2013 through 2017. On January 17, 2014, NorthWestern filed a motion for protective order regarding the itemized list. Attached is a redacted public version of this itemized list.

NorthWestern will update this response by providing this information in the appropriate format after the Commission rules on the motion for protective order.

In the event that the Commission does not grant the protective order sought by NorthWestern, NorthWestern objects to the question to the extent the request seeks information that is irrelevant, outside the reasonable scope of this proceeding, and not calculated to lead to the discovery of admissible evidence; to the extent that it seeks information or documents relating to entities other than NorthWestern; and to the extent that it requires public disclosure of information that is confidential or commercially sensitive to entities other than NorthWestern.

- b.      The aggregate annual capital expenditures for 2013-2017 were based on the original PPLM data that was detailed by project and common costs. NorthWestern reviewed and used the PPLM forecast with two material adjustments. An amount of \$1,000,000 was included in year 2015 for disposition of the old Rainbow powerhouse. The powerhouse

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PSC-018 cont'd

status was undetermined at the time of valuation and currently is unknown. A \$1,000,000 timing adjustment was included in 2016 for a major unit upgrade at Holter prior to the 2023 planned upgrades to accelerate future upgrades for this plant.

The balance of unit upgrades will focus on Black Eagle, Hauser, and Madison. These plants' units are smaller than the majority of the larger unit plants. Therefore, the \$8,500,000 starting in 2018 and escalated forward is adequate for planned system upgrades and auxiliary capital expenditures.

PPLM also provided a detailed account of the projects and costs for years 2008-2012. These years were capital intensive including unique one-time expenditures including the Thompson Falls fish ladder, Rainbow new powerhouse, and the Great Falls Interconnection transmission and substation construction. Excluding these types of projects and the unanticipated Heben Intake work, annual capital expenditures for these years are comparable to those forecasted from 2018 forward. The 2008-2012 actual capital project lists identify the continuation of numerous auxiliary system upgrades supporting the substantial system upgrade summary provided by PPLM and confirmed through the due diligence work concluded in the CBI independent engineer's reports (Exhibit\_\_(WTR-2)).

- c. See the response to part b, above.
- d. PPLM created its five-year capex estimates prior to issuance of the CIM.
- e. NWE did not check the future cap-ex requirements of the hydros against other similar hydro facilities in the United States and elsewhere. However, NorthWestern employees are very knowledgeable about this hydroelectric system. NorthWestern and NorthWestern's independent consultant, CB&I, based their conclusions about the reasonableness of the PPLM forecasts through the due diligence process. The due diligence work, system familiarity, and professional experience provide the confidence for the NorthWestern capital forecast validity. The qualifications of the individuals whose resumes are included as Exhibit\_\_(WTR-1) reflect their professional knowledge and experience which qualifies them to evaluate these important hydro assets. There would be limited value gained in the short time and limited resources to seek such a comparison during its due diligence effort.

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The operating history of these projects provides the best benchmark for forecasts. Hydro facilities are unique based upon plant location, design, operation, and ongoing dam safety Part 12 analysis. Although generalizations may be made regarding plant upgrades and modernization at non-PPLM hydro plants, past capital expenditures and strategies for the existing PPLM system are a reasonable basis for possible future expenditures.

Capital Expense Summary  
 2013-2017

Budget Type	Fac/Dept	Project Description	2013	2014	2015	2016	2017
-------------	----------	---------------------	------	------	------	------	------

Capital	Madison						
Capital	Hebgen						
Capital	Ryan						
Capital	Hebgen						
Capital	Mystic						
Capital	Ryan						
Capital	Ryan						
Capital	Ryan						
Capital	Black Eagle						
Capital	Black Eagle						
Capital	Holler						
Capital	Holler						
Capital	Madison						
Capital	Madison						
Capital	Morony						
Capital	Morony						
Capital	Morony						
Capital	Morony						
Capital	Morony						
Capital	Mystic						
Capital	Rainbow						
Capital	Rainbow						
Capital	Tfalls						
Capital	Ryan						
Capital	Ryan						
Capital	Kerr						
Capital	Admin						
Capital	Admin						
Capital	Admin						
Capital	South						
Capital	Great Falls						
Capital	Admin						
Capital	Admin						
Capital	Cochrane						
Capital	Cochrane						
Capital	Cochrane						
Capital	Cochrane						
Capital	Morony						
Capital	Madison						
Capital	Hauser						
Capital	Rainbow Shop						
Capital	Tfalls						
Capital	Tfalls						
Capital	Black Eagle						
Capital	Holler						
Capital	Ryan						
Capital	Cochrane						
Capital	Black Eagle						
Capital	Tfalls						
Capital	Admin						
Capital	Black Eagle						
Capital	Tfalls						
Capital	Hebgen						
Capital	Mystic						
Capital	Holler						
Capital	Great Falls						
Capital	Morony						
Capital	Hebgen						
Capital	Holler						
Capital	Tfalls						
Capital	Hauser						
Capital	Hauser						
Capital	Hauser						
Capital	Hauser						
Capital	Mystic						
Capital	Holler						
Capital	Cochrane						
Capital	Mystic						
Capital	Hauser						
Capital	Madison						
Capital	Hauser						
Capital	Ryan						
Capital	Hebgen						
Capital	Holler						
Capital	Morony						
Capital	Ryan						
Capital	Cochrane						
Capital	Ryan						
Capital	Madison						
Capital	Hauser						



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PSC-027      Regarding:    Major Upgrades  
                 Witness:       Rhoads

On a Dec. 12, 2013 site visit to Rainbow Dam by MPSC staff, PPLM personnel noted that the Rainbow upgrade was undertaken in relation to the FERC re-licensing of the complex, since FERC expects greater and more efficient usage of dams than the federal agency licenses.

Please explain whether the forward cap-ex budget includes expectations of large upgrades of this variety. And, if not, explain why NWE believes that forecasting such upgrades is not necessary, for instance around 2025 when Thompson Falls' FERC license is up for renewal.

RESPONSE (January 17, 2014):

NorthWestern objects to the introductory sentence of this data request as hearsay, irrelevant, and inadmissible. Without waiving said objection, NorthWestern responds to the second sentence of this data request as follows:

The forward capex budget includes plans for generator and turbine upgrades at the projects. These were referred to in the response to Data Request PSC-018 for Black Eagle, Madison and Hauser. The timeframes are:

Madison:	2020-2023
Black Eagle:	2020-2022
Hauser:	2016-2021

Cost estimates for these upgrades are included on the NorthWestern capex forecast for these years and associated projects. Significant hydraulic capacity was added with the installation of the Thompson Falls Unit No. 7 in 1995.

The forward cap-ex budget does not include expectations of major upgrades of the variety as was done recently at Rainbow Dam. Any investments going forward will be evaluated and justified on the basis of economics and reliability. NorthWestern will follow the procedures necessary to amend the license as required through appropriate consultation with the resource agencies. The Prefiled Direct Testimony of John D. Hines states that NorthWestern will look at cost effective upgrades into the future. Greater and more efficient usage of dams for generation does not mean that retirement of entire turbine generator units may be necessary. Economic and reliability evaluations will be inputs to the decision-making process.

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PSC-029      Regarding:      Sufficiency of Capital Budget  
                 Witness:      Rhoads

Please explain the basis for this statement that “the capital upgrade program is consistent with industry practice to maintain reliability.” (31:6-7) To what extent has NWE conducted comparisons of the cap-ex program of PPLM assets to other dams of a similar vintage and design?

RESPONSE (January 17, 2014):

The reference to the Prefiled Direct Testimony of William T. Rhoads (31:6-7) pertains to the conclusions reached by both NorthWestern and NorthWestern’s independent engineer, CB&I. Neither NorthWestern nor NorthWestern’s independent engineer conducted a formal comparison of the cap-ex program of PPLM assets to other dams of a similar vintage and design.

See also the response to Data Request PSC-018e.

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PSC-030      Regarding:    Capital Budget for Environmental Upgrades  
                 Witness:       Rhoads

Is any significant cap-ex included in the capital budget forecast that concerns the environmental issues described on pages 35-45 of your testimony?

RESPONSE (January 17, 2014):

NorthWestern included \$1,000,000 in the capital budget forecast in 2015 for demolition of the old powerhouse at Rainbow.

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PSC-031      Regarding:      Risks Associated with Environmental Issues  
                 Witness:          Rhoads

Has NWE quantified the risk associated with the environmental issues described on pages 43-45 of your testimony. If so, please describe these efforts. If not, please explain why these risks have not been quantified and included within the models presented in the Stimatz and Meyer testimonies.

RESPONSE (January 17, 2014):

The environmental matters discussed in my testimony at pages 43-45 relate to potential future environmental liabilities. In conducting our analysis (which is discussed in the Prefiled Direct Testimony of Joseph M. Stimatz), we assessed each of these matters even though they are not current liabilities for the owner of the hydro facilities and they may never become such liabilities. We also made the following allowances in both models:

Contaminated Sediments near Black Eagle: A one-time estimate of \$375,000 in 2025 was included in the models.

Contaminated Sediments near Thompson Falls: Annual estimates of \$187,500 from 2021-2030 were included in the models.

Demolition of the Old Rainbow Powerhouse: A one-time sum of \$1,000,000 in 2015 was included in the models.

We did not make an allowance in the models for the possibility that the Arctic grayling might be listed under the Endangered Species Act because the listing is still uncertain, owner's responsibility and mitigation is not known with reasonable certainty, and if a listing is made it could be several years before costs arose and those costs would be incurred over multiple years.

We also did not include allowances in the models for potential future costs in the shoreline erosion cases. For the Kerr case (Flathead Lake), we addressed the future risk under the terms of the Purchase and Sale Agreement ("PSA"), which provides PPLM will be responsible for all pre-Closing damages which should constitute the majority of the damages. In addition, erosion mitigation measures are in place at Flathead Lake and they appear to be successful. For the Hauser case (Lake Helena), we found the claims had limited merit and the alleged damages were less than \$50,000.

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PSC-032      Regarding:    Forced Outages  
                  Witness:      Rhoads

- a.      Provide a description of the significant forced outages (for the purposes of answering this question, lasting more than a week) of the Hydros during PPLM's ownership of them. Please include details about their duration, their causes, and what was done to remedy the outage, including costs to PPLM.
- b.      Were adjustments for outages (both forced and voluntary, for instance during maintenance) made in the projection of generation of the Hydros that is used by Stimatz and Meyer?

RESPONSE (January 17, 2014):

- a.      PPLM provided the attached list of unit outages for the period January 1, 2003 to December 31, 2013. Costs for each outage are not available. The remedy for each outage is not included, but involved maintenance activity, or repair/replacement of the affected components.
- b.      Yes. The actual annual generation was used to develop economics that included outages affecting generation.

Adjustments to production for plant outages are inherently included in the actual annual plant production.

**PPL Montana**  
**Hydro Forced Outages Greater than 168 hours**  
**1-1-03 through 12-31-13**

Unit	Event Start	Event End	Event Duration (hrs)	Event Description
BLACK EAGLE 1	6/19/2011 7:47	7/6/2011 14:10	414.4	Plugged intake screens
BLACK EAGLE 1	7/12/2011 16:32	7/22/2011 8:02	231.5	Plugged intake screens
BLACK EAGLE 2	1/1/2004 1:00	1/31/2004 23:59	743.0	Water coming from generator leads
BLACK EAGLE 2	2/1/2004 1:00	2/12/2004 11:55	274.9	Maintenance
BLACK EAGLE 2	1/1/2005 1:00	1/20/2005 9:25	464.4	Water leaking on Generator Leads
BLACK EAGLE 2	7/6/2006 12:33	7/31/2006 23:59	611.4	Lighting arrestor failure on C phase Generator #2
BLACK EAGLE 2	8/1/2006 0:00	8/31/2006 23:59	744.0	Lightning Arrestor failure on C phase
BLACK EAGLE 2	9/1/2006 0:00	9/30/2006 23:59	720.0	Lightning arrestor failure on C phase
BLACK EAGLE 2	10/1/2006 0:00	10/31/2006 23:59	745.0	Lightning arrestor failure on C phase.
BLACK EAGLE 2	11/1/2006 0:00	11/10/2006 10:41	226.7	Lightning arrestor failure on C Phase
COCHRANE 1	6/1/2007 10:06	6/30/2007 23:59	709.9	Generator failure
COCHRANE 1	7/5/2011 15:58	7/15/2011 15:27	239.5	Leads going to field poles burned.
COCHRANE 2	1/1/2005 1:00	1/31/2005 23:59	743.0	Generator rewind
COCHRANE 2	6/11/2011 7:59	7/5/2011 18:31	586.5	Intake screens plugged, high water flows
HAUSER 4	9/1/2008 0:00	10/1/2008 0:00	720.0	Major overhaul (use for non-specific overhaul only; see page B-1)
HAUSER 5	2/29/2012 17:44	3/9/2012 17:44	216.0	Burned connection between field poles 22 & 23. Machine relayed off as designed. Had an over voltage alarm & ground fault alarm on exciter. Also had overcurrent impedance alarm on the breaker panel. Closed the headgate to stop generator. Machine left off line for inspection.
HAUSER 6	6/1/2005 1:00	6/30/2005 23:59	719.0	Static Exciter Installation
HAUSER 6	7/1/2005 1:00	7/18/2005 11:21	418.4	Static Exciter Startup
HOLTER 4	1/16/2012 10:30	2/20/2012 13:51	843.4	Wiped thrust bearing.
HOLTER 4	2/21/2012 15:04	3/1/2012 10:47	211.7	Excessive clearance in marine bearing. 10 MW at shut down, loss of only 2MW by picking up load on other units
KERR 1	6/1/2003 1:00	6/30/2003 23:59	719.0	Severe winding damage- removed enddate and reduced summer rating to 57 mw per Charly Baker : gah 15july03
KERR 1	7/1/2003 1:00	7/31/2003 23:59	743.0	Severe winding damage- removed enddate and reduced summer rating to 57 mw per Charly Baker : gah 15july03
MADISON 1	1/9/2009 23:40	3/16/2009 14:40	1574.0	Exciter failure, field ground
MADISON 1	8/12/2009 13:31	11/11/2009 15:10	2186.7	Winding failure
MADISON 3	6/1/2004 1:00	6/30/2004 23:59	719.0	Exciter Ground
MADISON 3	7/1/2004 1:00	7/31/2004 23:59	743.0	Exciter Ground
MADISON 3	9/1/2004 1:00	9/30/2004 23:59	719.0	Exciter Ground
MADISON 3	10/1/2004 1:00	10/31/2004 23:59	744.0	Bad Exciter
MADISON 3	11/1/2004 1:00	11/30/2004 23:59	719.0	Bad Exciter
MADISON 3	12/1/2004 1:00	12/31/2004 23:59	743.0	Exciter R&R
MADISON 3	1/1/2005 1:00	1/31/2005 23:59	743.0	Exciter
MADISON 3	2/1/2005 1:00	2/28/2005 23:59	671.0	#3 Generator Down to R&R Exciter
MADISON 4	4/7/2013 9:15	12/13/2013 17:26	6009.2	Main turbine shaft broke. Repair shaft. Also replaced wicket gates, welded up runners, and installed temperature probes in bearings.
MORONY 1	8/1/2012 8:14	8/20/2012 17:04	464.8	Lock Out relay tripped plant. Arc flash-over on one phase of generator bus connection.
MORONY 2	1/31/2011 5:30	4/6/2011 16:20	1569.8	Exciter Transformer Lead failure
RAINBOW 1	12/1/2006 0:00	12/31/2006 23:59	744.0	Fault, windings burned (still down)

RAINBOW 1	1/1/2007 0:00	1/31/2007 23:59	744.0	Generator winding failure
RAINBOW 1	2/1/2007 0:00	2/28/2007 23:59	672.0	Fault, windings burned
RAINBOW 1	3/1/2007 0:00	3/31/2007 23:00	742.0	Rewind
RAINBOW 1	4/1/2007 0:00	4/20/2007 18:44	474.7	Rewind
RAINBOW 2	1/1/2007 0:00	1/31/2007 23:59	744.0	Generator winding failure, rewind in progress.
RAINBOW 2	2/1/2007 0:00	2/28/2007 23:59	672.0	Fault, windings burned
RAINBOW 2	3/1/2007 0:00	3/31/2007 23:00	742.0	Rewind
RAINBOW 2	4/1/2007 0:00	4/14/2007 16:07	328.1	Rewind finished and unit online
RAINBOW 2	5/12/2011 15:18	6/1/2011 13:28	478.2	Generator Bearing Problems
RAINBOW 2	6/19/2011 9:17	7/22/2011 12:53	795.6	Cooling water line plugged - hot bearing
RAINBOW 2	7/25/2011 19:57	8/6/2011 11:01	279.1	# 2 Exciter Bearing is running hot
				High bearing temperature alarm that would not clear. Loss of generation is 4 MW. Evidence of foundation settling
RAINBOW 2	3/28/2012 5:47	5/2/2012 13:02	847.3	causing bearing misalignment.
RAINBOW 3	12/7/2010 17:37	12/31/2010 23:59	582.4	Generator Bearing Hot
RAINBOW 4	6/12/2011 10:35	6/22/2011 10:13	239.6	Packing Bad
RAINBOW 4	7/7/2011 9:02	7/23/2011 10:39	385.6	'B' side packing leaking heavy
RAINBOW 4	11/20/2011 10:35	11/30/2011 16:11	245.6	Bad brakes
RAINBOW 5	11/9/2011 14:00	12/16/2011 15:02	889.0	Burned brakes. Delayed in acquiring replacement brake shoes.
RAINBOW 7	10/1/2004 1:00	10/31/2004 23:59	744.0	Hole in penstock
RAINBOW 7	1/1/2005 1:00	1/31/2005 23:59	743.0	Leak in Penstock
RAINBOW 8	10/1/2004 1:00	10/31/2004 23:59	744.0	Hole in Penstock
RAINBOW 8	1/1/2005 1:00	1/31/2005 23:59	743.0	Leak in Penstock
RAINBOW 8	6/11/2011 12:52	6/22/2011 10:43	261.9	Wicket gates plugging with sticks, High water flows and trash.
RYAN 3	12/6/2008 15:02	12/23/2008 13:14	406.2	Lower guide bearing temperature
RYAN 4	8/5/2008 20:59	8/31/2008 23:59	627.0	#2 Transformer 86T P Lockout Relay/Fire
RYAN 4	10/1/2008 0:00	12/31/2008 23:59	2209.0	Generator rewind failed stator.
RYAN 4	11/1/2008 0:00	11/30/2008 23:59	721.0	Generator rewind
RYAN 4	1/1/2009 0:00	4/24/2009 17:20	2728.3	Rewind Generator Stator and replace core iron.
RYAN 5	1/20/2003 10:05	2/24/2003 14:16	844.2	Broken wicket gate
RYAN 6	6/8/2011 22:24	6/16/2011 7:24	177.0	Intake Screens plugging
RYAN 6	6/16/2011 8:07	6/29/2011 15:22	319.3	Tail water levels
THOMPSON FALLS 7	10/1/2004 1:00	10/8/2004 15:09	182.2	Broken stator bolts

**NorthWestern Energy**  
**Docket D2013.12.85**  
**PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)**  
**Set 1 (001-035)**

**Data Requests served December 27, 2013**

PSC-034      Regarding:      Projected Bill Impacts  
                  Witness:      DiFronzo and Stimatz

Please provide electronic copies of Exhibit\_(PJD-3) reworked to compare expected charges with and without the PPL hydro assets in July 2014, January 2015 and July 2015.

RESPONSE (January 17, 2014):

NorthWestern objects to this data request on the grounds that it is beyond the proper scope of data requests in that it requires NorthWestern to make analyses that it did not make in evaluating the acquisition or preparing its Application.

Without waiving said objection, NorthWestern responds as follows:

See the two files in the folder labeled "PSC-034" on the CD. The "PSC-034 Bill Impact" file reflects the projected residential bill impacts and the "PSC-034 Electric Supply Rates" file provides the support for the estimated supply rates without the PPL hydro assets for the period July 2014, January 2015 and July 2015.

Please note that Exhibit\_\_(PJD-3) was based on using the updated first-year revenue requirement of \$128.4 million as shown on Exhibit\_\_(PJD-1). This updated first-year revenue requirement amount is \$12.8 million less than the valuation first-year revenue requirement amount used in Exhibit\_\_(PJD-4). The primary differences in the revenue requirement amounts are described in the Prefiled Direct Testimony of Travis E. Meyer starting on page TEM-15. The other difference between Exhibit\_\_(PJD-3) and Exhibit\_\_(PJD-4) was the estimated net electric market purchases needed to serve our customers after the hydro assets are purchased. In Exhibit\_\_(PJD-3) the net electric market purchases were based on the 12-month period from October 2014 through September 2015. In Exhibit\_\_(PJD-4) the net electric market purchase amounts were based on calendar year periods.