BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of Rocky Mountain Power for Alternative Cost Recovery for Major Plant Additions of the Populus to Ben Lomond Transmission Line and the Dunlap I Wind Project	)	Docket No. 10-035-89 DPU Exhibit No. 2.0

Pre-Filed Direct Testimony

of

Joni S. Zenger, Ph.D.

on behalf of the

Utah Division of Public Utilities

October 26, 2010

PUBLIC

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I. INTRODUCTION

Q. Please state your name and occupation.

A. My name is Dr. Joni S. Zenger. I am employed by the Division of Public Utilities (Division) of the Utah Department of Commerce as a Technical Consultant.

Q. What is your business address?

A. Heber M. Wells Office Building, 160 East 300 South, Salt Lake City, Utah, 84114.

Q. On whose behalf are you testifying?

A. The Division.

Q. Please describe your education and work experience.

A. I received my Doctorate degree in economics from the University of Utah in early 2001. Prior to that, I earned my Bachelor's degree and Master's degree, also in economics, from the University of Utah. I began working for the Division in the fall of 2000. In addition, I taught various economics and statistics courses for a ten-year period from 1996 through 2006, first at the University of Utah and then at the University of Phoenix. I have worked on transmission and wind-related projects at the Division as well as general rate cases and lead the Division's team on PacifiCorp' Integrated Resource Plan. I serve on the Cost Allocation Committee of the Northern Tier Transmission Group and am a member of the NARUC staff committee on electricity.

Q. Have you previously testified before the Public Service Commission (Commission) of Utah?

A. Yes. I have testified numerous times in Utah. In particular I testified in Docket No. 08-035-42 that established the general need and necessity of the construction of the Populus to Terminal transmission line associated with this docket.

II. PURPOSE AND RECOMMENDATION

Q. What is the purpose of the testimony that you are now filing?

A. My testimony presents the Division's analysis and recommendations to the Commission regarding PacifiCorp's (Company)[1] application for alternative cost recovery of the major plant addition investments for the construction of the Populus to Ben Lomond transmission line and the construction of the Dunlap I wind project, specifically addressing the capital costs and prudence of both projects. The Company seeks to recover an increased revenue requirement of $39 million for the two major plant additions. Utilizing the Company's application, supporting documents, and answers to data requests, I have analyzed and investigated the capital costs associated with these projects. I present to the Commission my analysis and conclusion regarding these costs as well as my analysis and conclusion regarding the general prudence of the projects.

[1] Rocky Mountain Power is a division of PacifiCorp. PacifiCorp is an Oregon corporation that provides electric service to retail customers through its Rocky Mountain Power division in the states of Utah, Wyoming, and Idaho, and through its Pacific Power division in the states of Oregon, California, and Washington.

Q. What is the Division's recommendation with respect to the capital costs and the prudence of the two major plant additions?

A. As described in more detail below, the Division believes the Company's capital expenditure costs for the Populus to Ben Lomond transmission line and the Dunlap I wind project appear to be generally reasonable, but with a few exceptions as described below. In addition, the Division believes that both projects are prudent investments that will benefit Utah ratepayers by providing a demonstrated source of needed renewable energy as well as improved reliability and transfer capability in the transmission system.

III. THE POPULUS TO BEN LOMOND TRANSMISSION SEGMENT

Q. Please describe the Populus to Ben Lomond Transmission segment project.

A. The Populus to Ben Lomond transmission line constitutes the second and remaining section of the Populus to Terminal transmission line, otherwise known as Segment B or Gateway Central of the overall Energy Gateway Transmission Project. The first section of Gateway Central (Ben Lomond to Terminal) was placed in service on March 7, 2010. The Populus to Ben Lomond segment in this rate case (hereafter referred to as "the Line") is on schedule and expected to be completed and placed in service on November 16, 2010. The Line is comprised of 90 of the total 145 miles of the Populus to Terminal 345 kV line, as well as upgrades to the existing Ben Lomond substation and a new Populus substation near Downey, Idaho. The total capital investment in the Populus to Ben Lomond section is expected to be approximately $548.1 million. Of this amount, approximately $225.5 million will be allocated to Utah.

Q. What were the results of the Division's investigation of the Line?

A. The Division found that several contractors submitted bids for the EPC (engineer, procure, and construct) contract. We reviewed the scoring sheets of the final four potential contractors and found that the highest scoring EPC contractor was awarded the bid. The Company considered project management experience, environmental, safety, general engineering, transmission, substation, protection and control, communications, legal, and pricing as components of the bid process. The Division confirms that the lowest cost bidder with the highest ranking score was awarded the bid.

The original EPC contract was in the amount of [redacted] million of the total $548.1 million estimated plant in service as of November 30, 2010. The rest of the costs are for materials purchased by PacifiCorp, communications, right-of-way acquisitions, legal fees, internal labor, purchased services, AFUDC, and capitalized taxes. Subject to the adjustments discussed herein, the Division recommends that any cost recovery be trued to actuals as they become available during the case.

In its review of documents, the Division became concerned that, as of October 4, 2010, the Company issued 95 EPC work change orders affecting the original EPC contract. While some of the change order costs were negative, in aggregate the changes orders added approximately $9 million to the initial EPC contract. Five of the changes range in amounts from about $1 million to $4 million. The Division, along with Mr. Kenneth

Slater, a consultant retained by the Division to help review the Line, reviewed the invoices and the purpose for each change order. We requested further clarification and explanation of the change orders in data requests, the responses to which were analyzed by both the Division and Mr. Slater. Mr. Slater will provide the analysis of the change orders in his testimony.

Q. What were the results of Mr. Slater's investigation?

A. Mr. Slater found two areas in which the Company could not adequately justify the costs for change in work orders. The first area deals with re-routing certain segments of the line. As described further in Mr. Slater's testimony, submitted as DPU Exhibit 3.0 in this docket, in addition to the re-rerouting change orders, Mr. Slater also has concerns with the communication and microwave equipment for which the Company is seeking recovery. Together these adjustments total $16, 492,497 plus any associated AFUDC costs. Mr. Slater found that other project costs are within a reasonable range based on his research, experience, and comparison with other similarly-sized projects. Mr. Slater's testimony and report provide greater detail on these points, and Division witness Ms. Brenda Salter addresses the effect of these adjustments on the revenue requirement in her testimony.

Q. With the exception of the Division's proposed adjustments, please explain why the Line is prudent and in the public interest?

A. The general need and necessity for the Line was previously demonstrated in Docket No. 08-035-42. In that docket, the Commission granted a Certificate of Convenience and Public Necessity (CPCN) for the construction of the Populus to Terminal line and found the line to be in the public interest and necessary for the Company to continue to serve its load obligation and maintain reliability on its transmission network system.[2]

The Division finds, in this docket, that the Company should be granted cost recovery for the Line, except for our adjustments described above. The Company selected the EPC contractor that received the highest ranking score and that was the most reasonably priced to build the line. The Line completes the first section of the Energy Gateway Project—the Populus to Terminal line. This provides to Utah customers enhanced reliability to our electric infrastructure and facilitates the delivery of current and future renewable resources within the Company's six-state serving area. The Line has been needed for some time (a large portion of the Line was previously called Path C, which was congested), and now customers will have increased transmission capability coming from southeastern Idaho into Utah. As part of the Company's strategy, the completion of this Line makes the Terminal hub in Salt Lake City a key link to other segments of the overall Energy Gateway Project. The Line will facilitate a stronger interconnection to Idaho, Wyoming, Oregon, and Washington as future segments are built. The Company has the ability to finance the Line (as evidenced in Mr. Bruce William's Testimony),[3] and the investment in the Line is prudent and beneficial to Utah customers in that it will allow

[2] Report and Order, Docket No. 08-035-42, September 4, 2009.
[3] Direct Testimony of Bruce N. Williams, August 3, 2010, lines 22-24.

load to be brought from southeastern Idaho to the Wasatch Front where demand is most needed. Based on these factors, the Company should receive cost recovery for its investment in this Line.

IV. THE DUNLAP I WIND PROJECT

Q. Please describe the Dunlap I wind project.

A. The Dunlap I wind project (Dunlap) is a 111 MW wind project located in Carbon County, Wyoming. The project consists of seventy-four General Electric (GE) 1.5 MW sle wind turbine generators, as well as access roads, an electrical collector system, a 34.5 kV to 230 kV collector substation, a 230 kV transmission line (approximately 11.6 miles in length), 230 kV breakers, a 230 kV Shirley Basin substation, an operations and maintenance building, and communication and control facilities. The Dunlap project was completed and in service on October 1, 2010. It has an estimated capacity factor of [redacted] percent.[4] According to the Company's Application, the Company is seeking recovery for total capital costs associated with Dunlap of approximately $264.5 million, with $108.8 million allocated to Utah.

Q. Please describe how the Division evaluated the reasonableness of the costs of Dunlap as well as the general prudence of the project.

Let me begin by stating that two factors facilitated the Division's review and analysis in this docket. First, as a result of the wind prudence review of the McFadden Ridge wind

[4] Company's 1st Supplemental Data Response to DPU Data Request 2.6, October 4, 2010.

project in the last general rate case in Docket No. 09-035-23, the Company agreed to provide with its filing a breakdown of capital costs for wind projects.[5] The Division worked with the Company and the Office of Consumer Services (Office) to develop the "wind plant fact sheet" that was filed with this Application. Second, Dunlap was acquired as part of a competitive bidding process in the 2009 Renewable Request for Proposals (2009R RFP) that was overseen by an independent evaluator (IE) in Oregon. The 111 MW Dunlap I self-build project was used as the cost-based alternative (or benchmark) in the 2009R RFP.

The Division examined appropriation request forms, wind assessment reports, wind turbine generator (WTG) costs and purchase dates, balance of plant (BOP) costs, interconnection and substation costs, and other documents that were submitted with the Company's application. In addition, we asked several sets of data requests and reviewed all responses from the Company to data requests from the Division and other parties. The Division looked at the major cost components and the economics of wind resources in its analysis.

Q. What are the Division's preliminary findings?

A. First, the WTGs comprise the largest portion of the project's cost.[6] The Division found that the Company purchased GE WTGs for this project in two separate contracts. The [redacted]

[5] Report and Order on Revenue Requirement, Docket No. 09-035-23, February 18, 2010, p. 113.
[6] Confidential RMP Exhibit SAB-4, September 11, 2009.

[redacted] The Company was able to obtain a favorable price for all 74 turbines for the Dunlap site, given the dates of purchase and the then-current industry demand and supply factors.

Q. Was Dunlap always slated to be a 111 MW project?

A. No. Originally the Dunlap project was intended to be only a [redacted] project, using the [redacted] GE WTGs that the Company bought at the time it acquired WTGs for [redacted] and [redacted].[8] The originally planned [redacted]

Q. Why did the Company change the scope and size of Dunlap?

[7] Company's Application, A.3, Wind Plant Fact Sheet. See also Confidential DPU Data Request (a) and (b).
[8] Confidential PacifiCorp Energy Memo from Mark Tallman to Rob Lasich, July 20, 2009. (Confidential A.1 in the filing).
[9] Id.

A. The Company states [redacted]

[redacted][10]

Q. What other cost components did the Division review?

A. The other major cost components that the Division looked at is the balance of plant (or BOP) costs. BOP consists of all the balance of plant engineering, procurement, equipment, construction, and commissioning services for the project. The BOP costs and equipment to complete the Dunlap project and make it operational are all contained in the BOP contract, which was awarded to RES America Construction, Inc. (RES) via a sole-source price agreement. RES was also the BOP contractor for the Company's High Plains and McFadden Ridge I wind projects. According to the Company, [redacted]

[redacted]

Finally, the Division reviewed the remaining capital cost items, such as administrative costs, transmission substation charges, capital surcharges, access roads and communications charges, network integration charges, and other miscellaneous costs relating to getting the wind-generated power to the grid. The Dunlap project includes a $10.8 million total Company investment ($4.4 million on a Utah basis) for transmission plant required to interconnect the wind generating plant to the transmission network

[10] Confidential PacifiCorp Energy Memo from Mark Tallman to Rob Lasich, July 20, 2009. (A.1 in the filing).
[11] Id.

system at a new Shirley Basin Substation. As a requirement by the Federal Energy Regulatory Commission (FERC), the Company submitted to FERC its estimated transmission network costs and Large Generator Interconnect Agreement (LGIA). The FERC LGIA study process requires the Company to estimate all costs that are directly associated with interconnection from the generation resource (Dunlap) to the Company's transmission network at the point of interconnection. The FERC found the Company's LGIA compliant, and as such, the Division believes such costs are reasonable.

Q. What other analyses and findings did the Division make with respect to the reasonableness of Dunlap's costs?

A. The Division reviewed the 2009R RFP documents and the Oregon IE's initial and final closing reports on the RFP. The 111 MW Dunlap I self-build project was used as the cost-based alternative (or benchmark) in the 2009R RFP. The analysis of the PacifiCorp Benchmark bid looked at overall capital cost levels by comparing them to bids received in the recently completed 2008R-1 RFP (2008R RFP).[12] Although Utah's IE consultant, Merrimack Energy, did not review the 2009R RFP, the 2008R RFP, which Merrimack reviewed, commented on, and oversaw, is modeled similarly to the 2009R RFP. The Oregon IE's analysis and final report on the 2009R RFP demonstrated the overall reasonableness of the Benchmark capital costs. The Oregon IE found that all capital costs were properly included and that the capital costs for the Benchmark were characterized accurately. The Oregon IE also compared the capital costs per kW of the

[12] Id.

Benchmark to Build-Own-Transfer (BOT) bids from the RFP-1 bids and found the Benchmark to be comparable to other nearby projects. After the completion of the final shortlist, the Oregon IE found Dunlap to have the lowest nominal levelized costs and the highest ranking score in all other categories. Therefore, PacifiCorp was determined to be the lowest bidder in the 2009R RFP.

Next, the Division reviewed the same capital costs filed in this docket (See RMP-A.3) to the previously-mentioned capital costs contained in the 2009R RFP and found that there were no material variances. As previously indicated, Dunlap became commercially operational on October 1, 2010. Although the Division has requested the final actual costs for the project, the Company's response is not likely to be available in time for this filing. Therefore, the Division recommends that recoverable amounts be trued to actual costs as they become available in this proceeding.

In performing its overall reasonableness test, the Division also compared the capital costs of Dunlap to other similarly located wind plants in Wyoming. The table below lists six Wyoming projects that are within the general vicinity of each other, along with their total capital costs per kW (See Confidential Exhibit DPU 2.1).

Six Wyoming Wind Sites

Project	Project Nameplate MW	Total Cost per kW
Seven Mile Hill II	19.5	[redacted]
Glenrock III	39.0	
Rolling Hills	99.0	
High Plains	99.0	
McFadden Ridge I	28.5	
Dunlap I	111.0	

Dunlap comes in about at [redacted] kW lower than High Plains and [redacted] kW higher than McFadden Ridge on a total cost per kW basis.[13] This is not unreasonable given that each distinct resource acquisition decision takes place at different times and is affected by the then-market for major equipment, construction services, commodities, permitting, legal, or other project management costs.

Support was added to the Division's evaluation of costs per kW by reviewing the 2009 Department of Energy (DOE) Wind Technologies Market Report. The DOE report sampled wind projects built in 2009 and found the average capacity weighted installed cost of wind projects was $2,120 per kW, an increase of 9 percent from 2008.[14] The Dunlap cost of [redacted] per kW is slightly higher than the average of the sample projects in the DOE report of $2,120 per kW. The Dunlap cost of [redacted] per kW is slightly higher than the average of the sample projects in the DOE report of $2,120 per kW. However, if we add 9 percent to the DOE figure of $2,120 per kW, (since Dunlap is built a year later

[13] Dunlap cost do not include $10.8 million transmission interconnection costs in order to make it comparable to the other wind projects above that also do not include transmission interconnection costs.
[14] U.S. Department of Energy 2009 Wind Technologies Market Report, August 2010, p. 45.

than the DOE sample projects) we get a cost of $2,311 per kW, which is [redacted] than the Dunlap costs. Thus, the Dunlap costs appear to be consistent with the DOE report and support the Division's findings that Dunlap capital costs are reasonable and within an expected range.

Q. How did you evaluate wind project economics in your analysis?

A. The Division focused on the projected capacity factor used to evaluate the economics for Dunlap. This is because wind projects largely derive their economics from the capacity factor: the higher the capacity factor, ceteris paribus, the lower the cost per MWh. Accordingly, a project with higher capital costs but with a higher capacity factor could show better economic results than a project with lower capital cost but a lower capacity factor.

In DPU Confidential Exhibit 2.1, the Division calculated the adjusted costs of the six previously discussed wind projects in Wyoming after accounting for the respective net capacity factors of each project. Column F sets forth the adjusted total cost per kW by taking the total cost per kW (Column E) and dividing by the net capacity factor (Column C). By this measure Seven Mile Hill is the only project under [redacted] per kW, and High Plains is by far the highest cost at [redacted] per kW. Using this measure, Dunlap, at [redacted] per kW, is the second to the highest of the six Wyoming projects. However, Dunlap falls within the range of the previous five projects, and the adjusted total cost per kW of Dunlap is reasonable.

Column G provides a simplified comparison of Dunlap to the other five Wyoming wind projects on the basis of the initial cost per megawatt-hour of expected output, using a 25-year project life. This example does not take into account the time value of money, operating and maintenance costs, etc. Using this relative measure Dunlap comes in at [redacted] per MWh, again the second highest next to High Plains at [redacted] per MWh, but well within the range of the lowest cost of expect output, Seven Mile Hill II [redacted] per MWh) and High Plains, the highest output cost.

The average net capacity factor of the first five similarly located wind plants is 36.10 percent. The Division finds the final [redacted] percent forecasted net capacity factor for Dunlap is also reasonable.

Q. Does the Company have the ability to finance Dunlap?

A. Yes. Company witness Mr. Williams testifies that the Company would be able to finance Dunlap through a January 2009 long-term debt issuance and capital infusions from the Company's parent company, MEHC.[15] Based on the above and the Division's review of financial statements, the Division believes the Company can adequately fund Dunlap.

Q. Does the Division have any adjustments or disallowances it is making to the Dunlap major plant addition?

[15] Direct Testimony of Bruce N. Williams, August 3, 2010.

A. The Division is making a $1,000,000 adjustment to the total capital cost based on the Company's response to Data Request #4.6. The contingency for the project was originally approved and forecasted to be [redacted] as contained in RMP (SAB-4) with the Company's Application,[16] but was reduced to the amount of $1,000,000 in DPU Data Request 4.6. The Company responded in DPU Data Request 4.6 that, "No contingency has been authorized for spend on the project to date." The Division received a response from the Company in a follow-up data request stating that the remaining $1,000,000 would not be used,[17] and the Division removed that amount from the capital cost of the project.

In addition, the Division received the Company's response to DPU Data Request 13.1 on October 20 that contains updated and actual costs associated with the Shirley Substation and other transmission interconnection facilities. Therefore, the Division makes a negative adjustment to the transmission portion of Dunlap in the amount of $408,000, resulting in a final cost of [redacted].

Q. How did the Division determine the need for the acquisition of Dunlap?

A. The Company, through its IRP, models load growth and resource need on a long-term basis, to determine how it will provide an adequate and reliable electric supply at the lowest reasonable cost and in a manner consistent with the public interest. The 2008 IRP

[16] RMP Exhibit SAB-4(Highly Confidential), September 11, 2009.
[17] Company's Response to DPU Data Request 11.5, October 5, 2010.

used east-and west-side proxy wind resources to meet its resource mix in the Company's 2008 preferred portfolio.

Q. Does Dunlap fit within the preferred portfolio selection of east side wind?

A. Yes. The 2008 IRP preferred portfolio identifies the need for a total of 1,598 MW of installed east-side wind for the years 2009 through 2021.[18] In the 2008 IRP Update, the Company's action plan places 227 MW of east side wind in service in 2010.[19] Dunlap is consistent with the Company's 2008 IRP and IRP Update, contributes to the Company's renewable resource needs, and helps the Company to meet its action plan.

Q. Does the Division agree with the selection of wind in the preferred portfolio?

A. Yes. Wind is a zero cost fuel source that is increasingly being selected in the Company's IRP process as an attractive resource choice.

Q. Are Dunlap's characteristics (e.g. capacity factor, output, etc.) comparable to the east side proxy used in the IRP modeling?

A. Dunlap's capacity factor of [redacted] percent is slightly higher than the 35 percent proxy capacity factor for east side (Wyoming) wind.[20] The 111 MW output of Dunlap exceeds the average capacity of 100 MW used as the proxy in the IRP modeling. East-side Wyoming wind is modeled at a capital cost of $2,215 per kW on the low end to $2,954

[18] PacifiCorp's 2008 IRP, May 28, 2009, pp. 240-241.
[19] Id.
[20] Id. at p. 102.

per kW for the high end in the IRP.[21] The capital costs for Dunlap on a per kW basis fall within the range of the IRP proxy capital costs. The operating and maintenance costs are consistent with those in the IRP[22] as well as with those modeled in the 2009R RFP.[23] Overall, Dunlap's characteristics are consistent with those modeled in the Company's IRP.

Q. What can you conclude about the overall prudency of Dunlap?

A. As outlined above, the capital costs associated with Dunlap are reasonable. The Company's decision to acquire Dunlap went through a competitive bidding process that was overseen by an independent evaluator. The IE found that Dunlap represented the resource with the highest net benefits to customers, that the bidding process was fair and competitive, and that Dunlap was the lowest cost alternative for customers. The project takes advantages of federal production tax credits that have been extended through 2012.[24] In addition, Dunlap contributes to state and potential federal renewable portfolio standard requirements. The Division has determined that the acquisition and capital costs associated with Dunlap are prudent and in the public interest.

V. CONCLUSIONS AND RECOMMENDATIONS

[21] Id.
[22] Id.
[23] Company's Application. Supporting Documents, A5. September 11, 2009, p. 11 and Exhibit Four.
[24] Under the Energy Policy Act of 1992, an income tax credit of 2.1 cents/kilowatt-hour is allowed for the production of electricity from utility-scale wind turbines. Through the American Recovery and Reinvestment Act (passed in February 2009), Congress extended the PTC through December 31, 2012. Additionally, wind project developers can choose to receive a 30 percent investment tax credit (ITC) in place of the PTC for facilities placed in service in 2009 and 2010. In lieu of tax credits, wind projects can receive a grant of up to 30 percent of the basis of the property's value.

Q. What conclusions have you reached?

A. The Division concludes that the costs of the Line are reasonable, with the exception of the costs associated with line rerouting and communications described by Mr. Slater. The Division finds that the Dunlap project is a prudent investment and will benefit Utah ratepayers by providing a zero incremental cost fuel source of renewable energy. The capital costs associated with the Dunlap project are overall reasonable with the exception of the $1,000,000 contingency fee and subject to review of the actual costs as compared to the forecasted costs. At this time only the transmission interconnection costs associated with Dunlap have been updated to include actuals.

Q. What do you recommend?

A. The Division recommends that the Commission approve the capital costs of the Populus to Ben Lomond transmission line after reducing them by $16, 492,497 and the associated AFUDC costs that are presented by Ms. Salter. The Division requests that the Commission approve the capital costs of the Dunlap wind project as reasonable, less the $1,000,000 contingency fee that was not used. The Division requests that the Commission approve a negative $408,000 adjustment to reflect the actual costs of the transmission piece associated with Dunlap and find the acquisition of Dunlap is prudent and in the public interest. Otherwise, the Division recommends that the Commission grant the Company cost recovery for these major plant additions.

Q. Does this complete your testimony?

396 A. Yes it does.