<u>BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH</u>

In the Matter of the Voluntary Request of Rocky Mountain Power for Approval of Resource Decision to Repower Wind Facilities	**))))))))))**	**DOCKET NO. 17-035-39** **Exhibit No. DPU 4.0 D** **Direct Testimony of** **Charles E. Peterson**

THE DIVISION OF PUBLIC UTILITIES
DEPARTMENT OF COMMERCE
STATE OF UTAH

Direct Testimony of

Charles E. Peterson

September 20, 2017

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Direct Testimony of Charles E. Peterson

I. INTRODUCTION

Q. Please state your name, business address and title.

A. My name is Charles E. Peterson. My business address is 160 East 300 South, Salt Lake City, Utah 84114. I am a Technical Consultant in the Utah Division of Public Utilities (Division, or DPU).

Q. On whose behalf are you testifying?

A. The Division.

Q. Would you summarize your background for the record?

A. I am a Technical Consultant for the Division. I have been employed by the Division for over 12 years, during which time I have filed testimony and memoranda with the Public Service Commission of Utah (Commission) involving a variety of economic, financial, and policy topics. I have an M.S. in Economics and Master of Statistics degree, both from the University of Utah. My resume is attached as DPU Exhibit 4.1 D.

Q. What is the purpose of your testimony?

A. I provide testimony in three areas. First I will discuss my evaluation, pursuant to UCA § 54-17-402(3)(b)(v), of the financial impacts of PacifiCorp's (Company) proposed wind repowering, which is part of the Company's "Energy Vision 2020" program. Next, I will comment on the status of the equipment that is to be removed from the repowered wind plants ("legacy equipment") on which the Company proposes to continue to receive a return of its costs and a return on the net balance of the equipment even though it will be no longer in service . Last, I will comment on an issue related to the used and useful issue of the legacy equipment, which is the intergenerational transfer or equity issue.

II. FINANCIAL ANALYSIS

Q. Please outline the analyses that you have performed to evaluate the Company's financial capacity to do the wind powering projects that are expect to cost over $1.1 billion.

A. I performed an analysis similar to the ones completed three or four times a year by the Division to evaluate the impact on the Company of its dividend declarations. First, I analyze the historical financial results and trends and pay particular attention to the financial ratios of the historical results and capital structure. Next, I review recent credit rating agency reports. Finally, I prepare a financial forecast to estimate the impact of the repowered plant on the Company's profitability and on its balance sheet.

The financial forecast was made by forecasting accounts not directly affected by the wind repowering based upon the assumptions set forth in the assumptions tab of the attached work papers. Common dividends assumed to be paid by the Company were manually adjusted in order to keep the Company's capital structure close to 50 percent equity during the period of the repowering construction. In this docket, the primary concern is the impact of the wind repowering capital expenditures on the Company.

Q. How does the Company propose to fund the repowering projects?

A. The Company has not given specific plans but has stated that it will use some combination of debt and equity financing.[1] In general, this makes sense. The Division's expectation is that the ratio of debt to equity will be close to the Company's current capital structure, or approximately 50 percent debt and 50 percent equity.

Q. How have you estimated the capital expenditures and related increased operating expenses?

A. I have relied on the exhibits provided by Company witness Mr. Jeffrey K. Larsen. Specifically, I used Exhibit RMP_(JKL-2) and Exhibit RMP_(JKL-3).

Q. What did you assume for the other line items in your forecast?

A. The remaining elements of the forecast of PacifiCorp's financial statements are based upon assumptions made by the Division that seem reasonable in light of historical results, the expectation of low load growth and generation needs, and the current economic conditions and expectations. The economic assumptions made in the forecast include a benign inflationary environment for the period of the forecast, modest growth in gross domestic

[1] See Direct Testimony of Cindy A. Crane, page 10, lines 222-225.

product in the United States, and continued relatively low interest rates. The assumptions for the Company include modest growth in revenues and net income. The Company is assumed to maintain approximately the current level of profitability absent the new projects. Work papers filed with my testimony will give the details of the forecast assumptions. Significant departure from these assumptions could, of course, result in significantly different results and any conclusions derived from those results.

Q. What are the results of your analyses and forecast?

A. Based upon the information from Mr. Larsen's exhibits and the assumptions contained in the forecast, the Company should be able to handle the additional capital expenditures and related increase in operation and maintenance expense. The forecast results suggest that the Company will briefly experience a decline in its return on equity and may have to cut back on its dividend payments for a couple of years (alternatively, but functionally equivalent, the Company could maintain its dividend payments and receive additional capital contributions from its parent). The estimated equity capital contribution that will be required is about $600 million, which will either come from reduced dividends or direct contributions from the parent. Over the 2013-2016 period, the Company has paid annual dividends averaging $762.5 million.

Q. Does your forecast represent the only way the Company could achieve approximately the same result?

A. No, the forecast I am presenting is just one of several ways the Company could achieve similar results.

Q. What is your conclusion?

A. I conclude that it is likely well within the Company's financial capacity to construct the repowering projects.

III. USED AND USEFUL REGULATORY POLICY.

Q. What is the Company proposing to do with the legacy equipment removed from its repowered wind sites?

A. The Company is proposing to leave the net balances of the legacy equipment in rates. To the extent the Company recovers any salvage value from the equipment, that value will be credited to the remaining balance of the equipment.[2] Furthermore, "[t]he Company's decision to pursue the wind repowering project is dependent on the Company continuing to recover its current investment in its wind facilities."[3]

Q. Is it correct that the legacy equipment will be no longer in service?

A. Yes, that is correct. Unless the equipment can be used for spare parts or sold, the legacy equipment will no longer be in service providing benefits to ratepayers.

[2] See: Direct Testimony of Jeffrey K. Larsen, page 17, lines 364-376.
[3] Ibid., lines 366-368.

Q. How would you characterize removal of this legacy equipment?

A. It might be characterized as an "extraordinary retirement." An extraordinary retirement "occurs when a partially depreciated unit of property is retired earlier than anticipated …."[4] In this particular case, the extraordinary retirement is being driven by Congress's extension of the PTCs for wind generators. The fact that the PTCs for the existing equipment are expiring and the ability of new equipment potentially gaining an additional ten years' worth of PTCs could be construed as a form of economic obsolescence.

Q. What is your understanding of the regulatory treatment of equipment subject to extraordinary retirement and economic obsolescence?

A. The rate treatment appears to vary across different jurisdictions.[5] Bonbright notes that "under a strictly construed present-value theory of rate making, the fact that a company may have failed to recover its outlay in outmoded plant [through standard depreciation] should not give it even a shadow of a claim to recovery of its outlay *from future consumers*"[6] (italics added). But Bonbright also notes that "there occasionally arise extreme cases of unexpected obsolescence, in which a company faces the necessity, or at least the economic desirability, of retiring expensive portions of its entire plant and equipment years before it has received a fair opportunity to recover its investment therein under a routine procedure of depreciation accounting."[7]

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[4] Hahne and Aliff, "Accounting for Public Utilities," Matthew Bender & Company Publishing, December 2016, Page 4-33.
[5] Ibid.
[6] James C. Bonbright, "Principles of Public Utility Rates," Columbia University Press, New York, 1961. Page 213.
[7] Ibid.

Bonbright provides an example where gas distribution companies changed from an expensive process of manufacturing gas to taking gas from gas pipelines.

> [T]he problem illustrated by the premature retirement of manufactured-gas plant presents a dilemma. On the one hand, the cost principles suggests that a company should receive an opportunity to recover *from later customers* compensation for all capital outlays for which it has not yet received full compensation from earlier customers. Yet, on the other hand, the same cost principle has usually been held to entitle a company to compensation only for such capital outlays as reflect the costs of property still 'used and useful in the public service.' Faced with this dilemma commissions have tended—wisely, in my opinion—to prefer the former alternative to the latter[8] (italics added).

Phillips has also noted varied treatment of plant obsolescence. He cites four ways that commissions have dealt with it: (1) forecast obsolescence and include it in rates; (2) assume that the "obsolete equipment may be defined as standby capacity and left in the rate base…; (3) allow the remaining net balance of the obsolete equipment to be amortized over some period of time; and (4) write off the equipment immediately without or with only partial recovery. Phillips also notes that regulatory treatment of obsolescence "is far from consistent."[9]

Q. Given these varied treatments of "obsolete" equipment, what is your conclusion and recommendation?

A. The instant case seems to have some similarity to Bonbright's example of the scrapping of gas manufacturing equipment in favor of cheaper gas delivered by pipelines, which is an example of "economic desirability." The Division believes, as a general principle, that

[8] Ibid., pages 213-214.
[9] Phillips, Charles F., Jr., "The Regulation of Public Utilities," Public Utilities Reports, Inc., Arlington, VA. 1993, page 276.

regulators should not discourage the Company from looking for potential economic benefits for its ratepayers, even if the proposals seem unusual within a regulatory framework.

Given that the Company argues that there is a potential net benefit to ratepayers from the generous PTCs derived from the new equipment—potentially an "economically desirable" thing to do—the weight of the above argument, especially from Bonbright, is to allow the Company to recover its costs. Therefore, the Commission should allow recovery of the legacy equipment if the Commission approves the repowering projects and it finds that the Company's proposal meets the standard of "economic desirability" mentioned by Bonbright. Given the risks that the project's economic benefits might not materialize, the Commission may wish to condition all or part of the recovery for the legacy plant on ratepayer benefits. For example, the Commission might allow recovery of the unrecovered plant balance without a return, or some similar approach, as a hedge against ratepayer risk. This might help ensure the project meets the "economic desirability" standard.

IV. INTERGENERATIONAL EQUITY

Q. What is intergenerational equity, and what does it have to do with this case?

A. Intergenerational equity, sometimes referred to as intergenerational transfers, is related to the "used and useful" concept discussed above. The concept is that costs and any associated benefits should be associated with the cost causers and not passed or transferred to future generations of ratepayers that did not cause the costs or receive the benefits. I italicized portions of the quotes given above in the used and useful section to show the tie-in with the used and useful doctrine.

The repowering case has a clear intergenerational equity issue attached to it that the Commission should be aware of and consider as it adjudicates this docket. As Company witness Mr. Jeffrey Larsen states, "[t]he Company's decision to pursue the wind repowering project is dependent on the Company continuing to recover its current investment in its wind facilities."[10] The Company is proposing that it continue to receive recovery of the legacy equipment for about twenty years beyond the end of receiving PTCs from the new generation equipment.[11] This means that there will be future ratepayers after the end of the PTCs that will have received no benefit from the PTCs but will continue to pay for the legacy equipment for twenty years or more. DPU Exhibit 4.3 D suggests that the "tipping point," that is, the point at which the present value of continuing cost of the legacy equipment exceeds the benefit of the PTCs for a new ratepayer, will likely occur in 2028. (See DPU Exhibit 4.3 D, row 10, column 6). Thereafter, new ratepayers to PacifiCorp's system will continue to be burdened with the cost of the old equipment while receiving no PTC benefit from their removal.

[10] Larsen, Op. Cit. lines 366-368.

[11] Based on the Company's response to DPU DR 1.10, along with verbal clarifications by the Company of the that response, the Company is proposing to change the depreciation rate on the remaining balance of the legacy equipment at the time it is removed from service to a 30 year amortization to match the period of the depreciation of the new repowering equipment.

Q. The Company might argue that those future ratepayers will receive the benefits of the operation of the new, repowered wind sites for decades to come. What is your response to this potential argument?

A. That argument, is of course, possible. However, it is based upon the assumption that PacifiCorp's system will look much like it does today, except that it will be somewhat larger and have relatively more renewable generating sources than it has today. While that assumption is one possible future, what PacifiCorp will look like in 20 or 30 years is, in my opinion, speculative.

One example should suffice to show how much things can change in the energy industry in even ten years.[12] About ten years ago, there was much discussion and plans being drawn up for the importation of liquid natural gas (LNG) in order to satisfy the energy needs of the United States. Large scale importing of LNG was thought to be necessary in just a very few years from then. There was concern for the security of America's energy supply since much of the LNG would be coming from volatile developing countries in order to satisfy the energy needs of the United States. Shortly after that, through the use of fracking and other technologies, large sources of natural gas became available in the eastern United States and elsewhere, which has driven the current and expected future prices of natural gas down significantly. More recently, it has been reported that the U.S. needs to expand infrastructure

[12] See, for example: https://www.eia.gov/naturalgas/importsexports/annual/ last accessed September 20, 2017. https://www.reuters.com/article/us-usa-natgas-lng-analysis/after-six-decades-u-s-set-to-turn-natgas-exporter-amid-lng-boom-idUSKBN1700F1 last accessed September 20, 2017.

to *export* LNG. We just don't know what changes the next twenty or thirty years will bring, except that things, perhaps everything, will change.

The potential receipt of PTCs and the accounting depreciation of the legacy equipment are known to a relative certainty compared to the speculation of what the Company's system will look like twenty or more years from now.

Q. What are possible solutions to this intergenerational transfer?

A. One solution would be for the depreciation of the legacy equipment to be accelerated to match the time period of the PTCs. A second, though related, solution, would be to "bank" the PTCs and amortize the PTCs over the remaining "life" of the legacy equipment.

Q. What would be the effect of either solution on the Company's repowering proposal?

A. The present value of the net benefit to ratepayers would be reduced. DPU Exhibit 4.3 D gives an estimate of the difference between the net present value of the Company's proposal to the scenario where depreciation is accelerated to match the period of the PTCs. The change in net present value of the accelerated amortization versus the Company's proposed amortization of the legacy equipment as of 2019 amounts to approximately $200 million.

Q. Do you have any recommendations to the Commission regarding the intergenerational equity issue?

A. I have nothing specific to recommend, other than the Commission should at least be aware of the issue. Mitigation of the intergenerational equity issue will likely result in the overall reduction of net benefits to ratepayers today.

V. CONCLUSIONS AND RECOMMENDATIONS

Q. Overall, what are your conclusions and recommendations to the Commission?

A. My conclusions and recommendations with respect to my three topic areas are as follows.

- I conclude that the Company has the financial capacity to engage in the proposed repowering project. Therefore, the repowering proposal should not be denied based upon financial impacts to the Company.
- The "used and useful" issue has been subject to various regulatory treatment in different jurisdictions, including total disallowance. However, given that there appears to be potential net benefits to ratepayers in the Company's proposal, the Commission should allow recovery of the legacy equipment, if the Commission finds that those net benefits are likely and approves the project.[13] In order to guard against economic benefits not materializing, the Commission might wish to limit that recovery in some fashion as a ratepayer protection.
- The Commission needs to be aware of the intergenerational equity issue that is created by the legacy equipment. If the Commission determines to resolve or mitigate

[13] Dr. Zenger summarizes the Division's recommended rejection of the Application in her testimony.

the issue by either of the methods I outlined, then the net present value of the repowering proposal will be diminished.

Q. Does that conclude your testimony?

A. Yes.

DPU Exhibit 4.1D, Resume of Charles E. Peterson

CHARLES E. PETERSON

EXPERIENCE

Technical Consultant, Division of Public Utilities Utah Department of Commerce, May 2006 to Present.

Responsibilities: PacifiCorp and Dominion Energy Utah (formerly known as Questar Gas Company) General Rate Cases: Cost of Capital Studies; PacifiCorp avoided cost issues; Lead on PacifiCorp ECAM application; PacifiCorp 2006 General Rate Case Team leader—cost of capital, coal and natural gas contract teams; PacifiCorp 2006/2007 IRP lead; Special Contracts lead; various Economic, Financial, and Statistical Analyses.

Utility Analyst, Division of Public Utilities, Utah Department of Commerce, January 2005 to May 2006.

Responsibilities: Overall DPU Team Management of PacifiCorp Acquisition by MidAmerican Energy Holdings Company; Division Lead on a Forecasting Task Force; Principal Author of Technical Paper on "Ring-Fencing;" Economic and Statistical Analysis, Cost of Capital Studies on Questar Gas and PacifiCorp.

Manager, centrally assessed utility and transportation company valuations section, Property Tax Division, Utah State Tax Commission, September 1992 to December 2004.

Responsibilities: supervision of the annual appraisal of 100 utility, railroad, and airline companies; securities analysis, cost of capital studies, financial forecast models and other appraisal methods, settlement negotiations; expert testimony.

EDUCATION

M.S., Economics. University of Utah, 1990.
Master of Statistics (M.Stat.). Graduate School of Business, University of Utah, 1980.
B.A., Mathematics. University of Utah, 1978.

PROFESSIONAL MEMBERSHIP

Society of Utility and Regulatory Financial Analysts (SURFA)
Received **Certified Rate of Return Analyst (CRRA)** from SURFA in 2007.

EXPERT

Utah Public Service Commission, Utah State Tax Commission; Federal

TESTIMONY District and Bankruptcy Courts; Utah State District Courts; Utah State Industrial Commission; Wyoming State Court

PUBLICATIONS "Accounting Challenges for Regulated Public Utilities," The Journal Entry, April 2014. Co-author with Matthew A. Croft and J. Robert Malko.

"The Utah Test: Defining a test period to overcome controversies and inaccuracies," Public Utilities Fortnightly, May 2010. Co-authored with Joni S. Zenger and J. Robert Malko.

"Ring Fencing in Utah," Public Utilities Fortnightly, February 2008. Co-author with J. Robert Malko.

"Applying CAPM: Issues and Activities in Utah," The NRRI Journal of Applied Regulation, December 2005. Co-author with Dr. Robert Malko.

ADDITIONAL EXPERIENCE Associate, (part-time), Houlihan Valuation Advisors**,** 1998 to 2005. Economic and financial analysis, business appraisal work.

Owner and Consultant, July 1991 to 1998. Economic Consulting and litigation support.

Utility Analyst, Utah State Tax Commission, March 1991 to September 1992.

Associate, Houlihan, Dorton, Jones, Nicolatus and Stuart, August 1989 to March 1991.

Partner, Stuart, Nicolatus and Peterson, 1989.

Associate, Frank Stuart & Associates, 1980 to 1985; 1986 to 1989.

Senior Consultant, Grant Thornton International, 1985 to 1986.

TEACHING	Instructor, Unitary Valuation School held at Utah State University sponsored by the Western States Association of Tax Administrators (WSATA), 1999 to 2007, 2009, 2011, and 2014. Education Chairman, WSATA Committee on Unitary Assessment, 2000 to 2004. Instructor, business calculus, Salt Lake Community College, Spring 1990.
SKILLS	Financial analysis, including cost of capital and financial statement analysis. Securities analysis, financial forecasting and business appraisal. Economic and statistical analysis. Expert testimony. Project management and team supervision. Negotiation. Research and report writing.
LICENSE	Certified General Appraiser, State of Utah, License Number CG00039924 (lapsed).
HONORS	Several incentive awards for work at the Division of Public Utilities and the Property Tax Division Elected to Phi Kappa Phi (general scholastic honorary). Bachelor's degree awarded Magna cum Laude.
SERVICE	Centerville City ad hoc committee member on master plan zoning matters, 1995. Docent, Hansen Planetarium, Salt Lake City, Utah, 1992 to 1994. President of a 200 unit condominium association, 1983 to 1984. Various church service positions

DPU Exhibit 4.2D, Forecast Financial Statements of PacifiCorp, Forecast Prepared by the Utah Division of Public Utilities using Information provided by the Company

PacifiCorp
Forecast Balance Sheets
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Account Name	Historical 2016	Forecast 2017	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Avg. Annual Pct. Change
Current Assets:								
Cash & Equivalents	$17	$18	$18	$18	$19	$19	$19	2.30%
Surplus Cash	$0	$0	$0	$0	$0	$0	$0	
Accounts Receivable	$728	$735	$745	$755	$780	$798	$817	1.94%
Material, Supplies, Fuel	$443	$451	$458	$466	$474	$482	$490	1.70%
Other Current Assets	$166	$251	$256	$258	$261	$263	$266	8.18%
Total Current Assets	**$1,354**	**$1,454**	**$1,476**	**$1,497**	**$1,533**	**$1,562**	**$1,593**	**2.74%**
Plant & Equipment:								
Plant in Service	$27,298	$27,820	$28,352	$28,966	$29,593	$30,235	$30,890	2.08%
Repower Projects	$0	$0	$0	$985	$1,131	$1,135	$1,140	
Construction Work in Progress	$657	$630	$635	$650	$700	$700	$700	1.06%
Total Plant & Equipment:	**$27,955**	**$28,450**	**$28,987**	**$30,601**	**$31,425**	**$32,070**	**$32,730**	**2.66%**
Depreciation Repower Projects	$0	$0	$0	$8	$42	$80	$117	
Accumulated Depreciation & Amort.	$8,793	$8,930	$9,069	$9,517	$9,874	$10,246	$10,631	3.21%
Net Plant & Equipment	**$19,162**	**$19,520**	**$19,917**	**$21,076**	**$21,508**	**$21,744**	**$21,981**	**2.31%**
Other Assets:								
Regulatory Assets	$1,490	$1,535	$1,574	$1,614	$1,655	$1,698	$1,741	2.63%
Financial Assets/Derivatives	$0	$3	$3	$3	$3	$3	$3	
Deferred Charges and Other	$388	$394	$402	$406	$410	$414	$418	1.24%
Total Other Assets	**$1,878**	**$1,931**	**$1,978**	**$2,023**	**$2,068**	**$2,114**	**$2,162**	**2.37%**
Total Non-Current Assets	$21,040	$21,451	$21,895	$23,098	$23,576	$23,858	$24,143	2.32%
Total Assets	**$22,394**	**$22,905**	**$23,372**	**$24,596**	**$25,109**	**$25,420**	**$25,736**	**2.35%**
Current Liabilities:								
Current Maturities LTD	$58	$135	$133	$130	$128	$125	$123	13.32%
Short-term Debt	$270	$60	$61	$64	$65	$66	$67	-20.71%
Accounts Payable	$408	$477	$484	$491	$499	$507	$515	3.97%
Accrued Expenses	$245	$261	$266	$280	$286	$290	$293	3.04%
Derivative Contacts	$0	$0	$0	$0	$0	$0	$0	
Other	$218	$260	$265	$279	$285	$289	$292	5.00%
Total Current Liabilities	**$1,199**	**$1,194**	**$1,209**	**$1,245**	**$1,264**	**$1,277**	**$1,291**	**1.23%**
Long-Term Debt	$7,021	$6,963	$6,828	$6,695	$6,564	$6,437	$6,311	-1.76%
Deferred Income Taxes	$4,880	$4,971	$5,072	$5,367	$5,477	$5,538	$5,598	2.31%
Derivative Contracts	$0	$0	$0	$0	$0	$0	$0	
Other Long-term Liabilities	$1,904	$1,931	$1,970	$2,022	$2,075	$2,129	$2,185	2.32%
Additonal Loans	$0	$349	$679	$1,216	$1,292	$1,485	$1,723	
Total LTD & Deferrals	**$13,805**	**$14,214**	**$14,549**	**$15,300**	**$15,408**	**$15,588**	**$15,817**	**2.29%**
Total Liabilities	$15,004	$15,408	$15,758	$16,545	$16,672	$16,865	$17,108	2.21%
Preferred Stock	$2	$2	$2	$2	$2	$2	$2	0.00%
Common Equity:								
Common Stock	$4,479	$4,479	$4,479	$4,479	$4,479	$4,479	$4,479	0.00%
Retained Earnings	$2,909	$3,016	$3,133	$3,570	$3,956	$4,074	$4,146	6.09%
Total Common Equity	**$7,388**	**$7,495**	**$7,612**	**$8,049**	**$8,435**	**$8,553**	**$8,625**	**2.61%**
Total Liabilities & Equity	**$22,394**	**$22,905**	**$23,372**	**$24,595**	**$25,108**	**$25,420**	**$25,735**	**2.34%**

PacifiCorp
Forecast Income Statements
9/20/2017 12:51

	Historical 2016	Forecast 2017	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Avg. Annual Pct. Change
Operating Sales and Revenues:								
Revenues	$5,201	$5,294	$5,361	$5,430	$5,568	$5,710	$5,856	2.00%
Revenues from Repower Projects	$0	$0	$0	$35	$155	$164	$158	
Est. Wholesale Wheeling Revenues	$0	$0	$0	$0	$0	$0	$0	
Reduction for PTC Credits	$0	$0	$0	($28)	($111)	($132)	($132)	
Total Revenues	**$5,201**	**$5,294**	**$5,361**	**$5,437**	**$5,612**	**$5,742**	**$5,881**	**2.07%**
Operating Expenses:								
Energy Costs	$1,751	$1,805	$1,850	$1,894	$1,919	$1,891	$1,934	1.67%
Other operations and maintenance	$1,064	$1,038	$1,047	$1,062	$1,083	$1,110	$1,138	1.13%
Depreciation and amortization	$770	$788	$800	$817	$835	$853	$871	2.08%
Taxes, other than income taxes	$190	$194	$197	$209	$206	$191	$194	0.35%
Reduction in NPC from Repowering	$0	$0	$0	($1)	($10)	($14)	($18)	
Op Exp & Other Taxes Repowering	$0	$0	$0	$1	$12	$12	$9	
Depreciation Exp. Repowering	$0	$0	$0	$8	$33	$38	$38	
Total Operating Expenses	$3,775	$3,825	$3,895	$3,991	$4,078	$4,081	$4,166	1.66%
Earnings From Operations	$1,426	$1,469	$1,467	$1,446	$1,534	$1,661	$1,715	3.13%
Interest expense (net)	$365	$361	$351	$344	$338	$331	$325	-1.93%
Interest income	($15)	($0)	($0)	($0)	($0)	($0)	($0)	-51.61%
Loss (Gain) on Sale of Assets	$0	$0	$0	$0	$0	$0	$0	
Interest Expense (Income) on Additional Loans (Surplus Cash)	$0	$10	$31	$57	$75	$83	$96	
Other (Income) Expense	($27)	($30)	($31)	($31)	($32)	($33)	($34)	3.75%
Total Other (Income)/Expense	$323	$341	$351	$370	$381	$381	$387	3.06%
Earnings Before Taxes	**$1,103**	**$1,128**	**$1,116**	**$1,076**	**$1,154**	**$1,280**	**$1,328**	**3.15%**
Extraordinary Items	$0	$0	$0	$0	$0	$0	$0	
Income Taxes	$340	$356	$349	$340	$367	$411	$431	4.02%
Net Income	$763	$772	$767	$737	$786	$868	$898	2.74%
Preferred Stock Dividends	$0	$0.13	$0.13	$0.13	$0.13	$0.13	$0.13	
Common Stock Dividends	$875	$665	$650	$300	$400	$750	$825	-0.98%

PacifiCorp
Forecast Financial Ratios
9/20/2017 12:51

Ratio Group And Name	Historical Average	Forecast 2017	Forecast 2018	Forecast 2019	Forecast 2020	Forecast 2021	Forecast 2022	Forecast Period Average
Short-term Liquidity Ratios:								
Current	1.14	1.22	1.22	1.20	1.21	1.22	1.23	1.22
Quick	0.59	0.63	0.63	0.62	0.63	0.64	0.65	0.63
Days Revenues Cash	3.08	1.19	1.20	1.20	1.19	1.20	1.20	1.20
Days Revenues Receivable	50.66	50.90	50.70	50.70	50.70	50.70	50.70	50.74
Long-term Solvency Ratios:								
Net Worth/Total Debt	0.53	0.49	0.48	0.49	0.51	0.51	0.50	0.50
Net Worth/Non Current Debt	0.58	0.53	0.52	0.53	0.55	0.55	0.55	0.54
Net Worth/Fixed Assets	0.41	0.38	0.38	0.38	0.39	0.39	0.39	0.39
Times Interest Earned	3.61	4.04	3.92	3.68	3.79	4.09	4.16	3.95
Times Interest Earned plus Depr.	5.56	6.16	6.02	5.72	5.82	6.15	6.23	6.01
Profitability Ratios:								
Return On Total Assets	4.18%	4.53%	4.45%	4.22%	4.30%	4.55%	4.62%	4.44%
Return On Total Capital	6.24%	6.90%	6.65%	6.18%	6.23%	6.59%	6.66%	6.54%
Return On Common Equity	8.66%	10.37%	10.15%	9.41%	9.54%	10.22%	10.45%	10.02%
Asset-Utilization Ratios:								
Revenues/Fixed Assets	0.28	0.27	0.27	0.27	0.26	0.27	0.27	0.27
Revenues/Total Assets	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Regulatory Capital Structure								
Common Equity	52.34%	50.15%	49.90%	50.02%	51.37%	51.52%	51.39%	50.73%
Preferred Stock	0.11%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Long Term Debt (incl. current portion)	47.56%	49.83%	50.08%	49.97%	48.62%	48.47%	48.60%	49.26%
Total Capital ($ millions)		$14,945	$15,253	$16,091	$16,420	$16,602	$16,785	

DPU Exhibit 4.3D, Analysis of Intergeneration Cost/Benefit Transfer

Analysis of Intergeneration Cost/Benefit Transfer

	1	2	3	4	5	6	7
	Year	**Production Tax Credits Per Company Witness Larsen**	**Legacy Equipment Amortization over Company's Assumed 30 Years**	**Present Value of Future PTCs at Given Year**	**Present Value of Future 30 Amortization of Legacy Equipment at Given Year**	**Difference of Present Value of Future PTCs less Future Amortizaton (30 Years)**	**Legacy Equipment Amortization over Assumed 10 Years to Approximately Match PTC Benefits**
1	2019	$ 28,051,000	$ (25,672,658)	$ 945,671,235	$ (332,832,097)	$ 612,839,138	$ (38,508,986)
2	2020	111,280,000	(25,672,658)	$ 979,750,835	$ (329,026,508)	$ 650,724,327	(77,017,973)
3	2021	132,146,000	(25,672,658)	$ 932,840,465	$ (324,970,892)	$ 607,869,573	(77,017,973)
4	2022	132,238,000	(25,672,658)	$ 861,982,084	$ (320,648,823)	$ 541,333,261	(77,017,973)
5	2023	137,472,000	(25,672,658)	$ 786,376,307	$ (316,042,793)	$ 470,333,514	(77,017,973)
6	2024	136,558,000	(25,672,658)	$ 700,569,230	$ (311,134,147)	$ 389,435,083	(77,017,973)
7	2025	142,022,000	(25,672,658)	$ 610,038,628	$ (305,903,003)	$ 304,135,626	(77,017,973)
8	2026	147,178,000	(25,672,658)	$ 508,096,166	$ (300,328,172)	$ 207,767,994	(77,017,973)
9	2027	147,374,000	(25,672,658)	$ 394,300,084	$ (294,387,076)	$ 99,913,009	(77,017,973)
10	2028	157,333,000	(25,672,658)	$ 272,831,600	$ (288,055,649)	$ (15,224,049)	(77,017,973)
11	2029	123,355,000	(25,672,658)	$ 133,423,636	$ (281,308,248)	$ (147,884,612)	(38,508,986)
12	2030	20,072,000	(25,672,658)	$ 18,834,569	$ (274,117,542)	$ (255,282,973)	0
13	2031	0	(25,672,658)	0	$ (266,454,407)	$ (266,454,407)	0
14	2032	0	(25,672,658)	0	$ (258,287,804)	$ (258,287,804)	0
15	2033	0	(25,672,658)	0	$ (249,584,655)	$ (249,584,655)	0
16	2034	0	(25,672,658)	0	$ (240,309,709)	$ (240,309,709)	0
17	2035	0	(25,672,658)	0	$ (230,425,400)	$ (230,425,400)	0
18	2036	0	(25,672,658)	0	$ (219,891,691)	$ (219,891,691)	0
19	2037	0	(25,672,658)	0	$ (208,665,918)	$ (208,665,918)	0
20	2038	0	(25,672,658)	0	$ (196,702,611)	$ (196,702,611)	0
21	2039	0	(25,672,658)	0	$ (183,953,315)	$ (183,953,315)	0
22	2040	0	(25,672,658)	0	$ (170,366,390)	$ (170,366,390)	0
23	2041	0	(25,672,658)	0	$ (155,886,805)	$ (155,886,805)	0
24	2042	0	(25,672,658)	0	$ (140,455,910)	$ (140,455,910)	0
25	2043	0	(25,672,658)	0	$ (124,011,206)	$ (124,011,206)	0
26	2044	0	(25,672,658)	0	$ (106,486,085)	$ (106,486,085)	0
27	2045	0	(25,672,658)	0	$ (87,809,563)	$ (87,809,563)	0
28	2046	0	(25,672,658)	0	$ (67,905,994)	$ (67,905,994)	0
29	2047	0	(25,672,658)	0	$ (46,694,760)	$ (46,694,760)	0
30	2048	0	(25,672,658)	0	$ (24,089,948)	$ (24,089,948)	0
Total		**$ 1,415,079,000**	**$ (770,179,726)**				**$ (770,179,726)**
NPV		**$ 945,671,235**	**$ (332,832,097)**				**$ (534,848,967)**

Change in the Net Present Value of Legacy Equipment amortization by going from 30 years to 10 years: $ (202,016,870)

Discount rate 6.57%

Sources: 1. The PTC values were obtained from Jeffrey Larsen exhibits supporting his direct testimony and can be found in the Company Excel workbook entitled PROPRIETARY Jeffrey Larsen Workpapaers 6-30-17, tab NPC and Cost Rollup'.

2 The depreciation values were obtained from an excel spreadsheet prepared by the Company and submitted in response to DPU data request 1.10 in the 17-035-039 docket. Net book value of the equipment to be retired was calculated by the Company to be $770,179,726 at the date of repower.

3 The discount rate is the same used by the Company and can be found in an excel worksheet accompanying Rick Link's testimony titled 'Repower Results Direct Testimony, tab Price-Policy Annual - PaR'.