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**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

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<b>In the Matter of the Filing of PacifiCorp's 2013 Integrated Resource Plan</b>	<b>DOCKET NO. 13-2035-01</b>
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**COMMENTS ON PACIFICORP 2013 INTEGRATED RESOURCE PLAN  
INTERWEST ENERGY ALLIANCE**

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Interwest Energy Alliance is a trade association that brings the nation's renewable energy industry together with the West's energy and conservation advocacy community working in a consensus-based, collaborative approach to market development. Interwest's developers and conservation non-governmental organizations serving on its board of directors support state-level public policies that harness the West's abundant – and inexhaustible – renewable energy and energy efficiency resources. Interwest appreciates the opportunity to provide input into the proposed 2013 IRP.

PacifiCorp (or the “Company”) has produced its 2013 Integrated Resource Plan in the midst of rapidly-changing energy markets and regulatory schemes. Natural gas, wind and solar prices have all fallen to new lows. The President will continue to push to reduce emissions from new and existing coal plants and increase investment in renewable energy through his Climate Action Plan. The EPA continues to scrutinize Western regional haze reduction plans due to their impact on Class I air quality areas. The IRP contains some marked improvement over the 2011

IRP, including improved renewable integration study and operations. However, the lack of renewable energy included in the Preferred Portfolio and disallowance of portfolios combining higher carbon costs and low natural gas prices make the final results unworthy of acknowledgement in several key areas.

**A. Coal Plant Investments are Unsupported by Modeling and Increase Costs and Risks**

The Company's coal plant investments and heavy reliance on front office transactions subject its ratepayers to increased costs and risks, missing opportunities for long term stable priced renewables. Stakeholders asked PacifiCorp to model additional potential investments or retirements early in the public process. When the final portfolios were subjected to PVRR analysis and sensitivity review, the portfolios including transitions from fossil fuels to larger penetrations of wind and solar energy were eliminated from the final analysis. Interwest recommends that the Company be required to review and update its modeling prior to the update required in the Spring of 2014, when there will be additional confirmation of the revised EPA rules applicable to coal plants providing electricity to ratepayers in Utah.

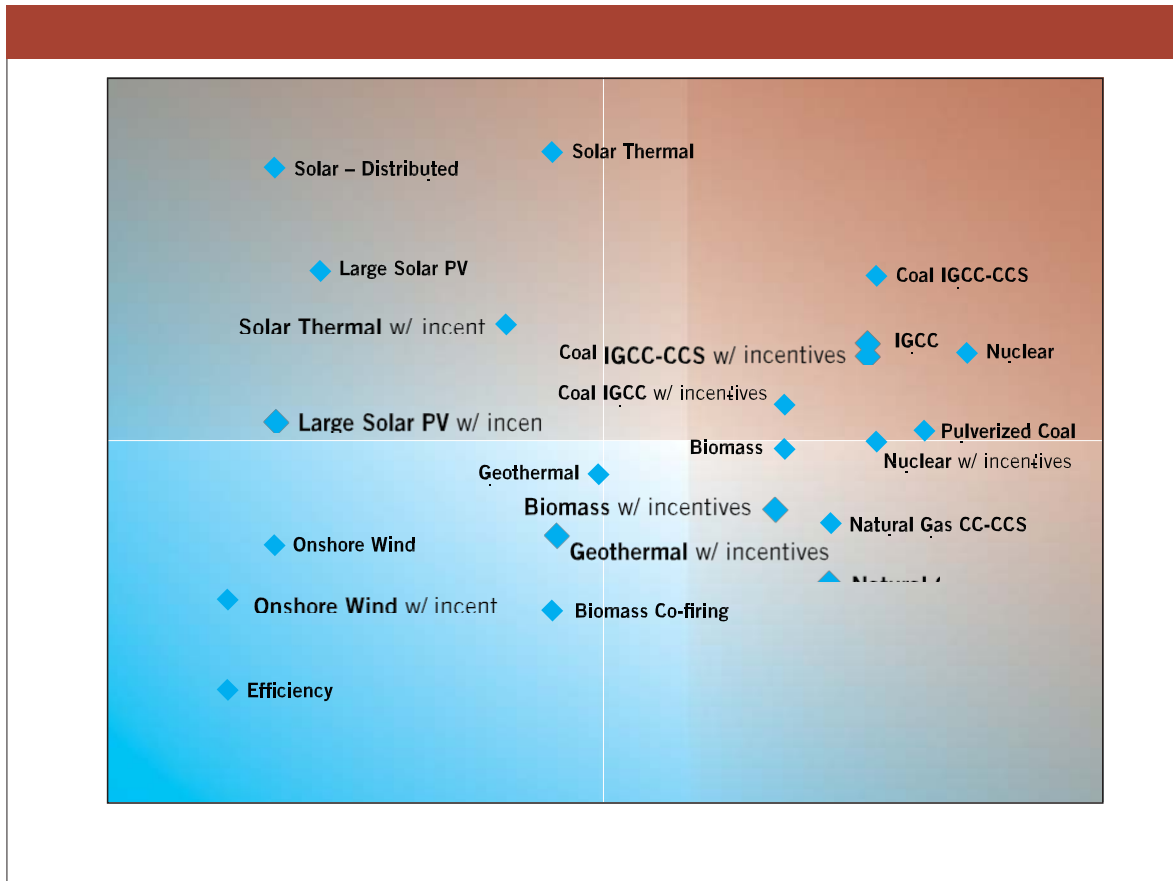
Absent revision, the IRP potentially will drive imprudent investments, and the Company and ratepayers run the risk of non-recovery or large capital costs. Regulatory requirements responding to the potential for catastrophic climate change continue to rise.<sup>1</sup> The costs to PacifiCorp's ratepayers are already rising, as is the Company's risk of non-recovery.

In addition to costs the Company and regulators must consider the risk of acquiring each type of resource, including construction cost risk; fuel and operating cost risk, new regulation

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<sup>1</sup> . "Practicing Risk-Aware Electricity Regulation – What Every State Regulator Needs to Know", R. Binz, et al, CERES Report, 2012, pp. 26-27, <http://www.ceres.org/resources/reports/practicing-risk-aware-electricity-regulation/view>, ("CERES Report").

risk, carbon price risk, water constraint risk, capital shock risk, and planning risk. CERES Report, p. 30. Large investments in coal plants implicate several of these risks. The investments to upgrade with pollution controls, when a large number of utilities are making such investments concurrently, carry construction costs and risks. Coal plants and natural gas plants, relying on commodities which must be mined, shipped, and consumed safely, always carry significant fuel and operating cost risk. Carbon prices, water availability, and the regulatory future are all uncertain. The CERES Report compared the combined relative costs and risks for different types of resources:



CERES Report, p. 37. Wind and utility scale solar energy rank relatively low on this scale measuring both risks and costs. CERES' outline of recommendations for regulators apply to

integrated resource planning, and are consistent with this Commission's previous IRP requirements:

1. Diversifying Utility Supply Portfolios (with an emphasis on low-carbon resources);
2. Utilize Robust Planning Processes for all utility investment (i.e. generation, transmission, distribution and demand-side resources like energy efficiency);
3. Employing Transparent Ratemaking Processes that reveal risk;
4. Using Financial and Physical Hedges including long term contracts;
5. Holding Utilities Accountable for their obligations and commitments;
6. Operating in Active "Legislative" Mode, continually seeking out and assessing risk;
7. Reforming and Re-Inventing Ratemaking Policies as appropriate.

Risk aware regulation requires sensible, safe investment strategies, which includes a) diversifying energy resource portfolios rather than betting all on a narrow set of options; b) more emphasis on renewable energy, and c) more emphasis on energy efficiency. Many of PacifiCorp's assets planned through this IRP will still be operating in 2050, when electric power producers may be required to reduce greenhouse gas emissions by 80 percent or more to avoid potentially catastrophic impacts from climate change. CERES Report, p. 5.

PacifiCorp's highest ranking portfolio relied substantially on DSM and flexible natural gas resources, but PacifiCorp refused to adopt this portfolio, for fear of inability to incorporate those measures in a cost-effective manner. The analysis for this refusal is insufficient. DSM's cost-effectiveness would help offset the need for future generation investments, and would assist with low-cost variable resource integration, consistent with utility best practice.<sup>2</sup> PacifiCorp should be required to revert to the highest ranking portfolio, EG2-C15, and conduct the studies recommended herein related to capacity values for renewables and renewable forecasting prior to acknowledgement of the IRP.

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<sup>2</sup> "Meeting Renewable Energy Targets in the West At Least Cost: The Integration Challenge," Regulatory Assistant Project for Western Governor's Association, June, 2012, <http://www.raponline.org/featured-work/meeting-renewable-energy-targets-in-the-west-at-least-cost-the-integration>. ("WGA Least Cost Integration Report").

**B. The Company's Lack of Renewables Increases Costs and Risks.**

**i. Utility scale solar energy and wind energy provide low-cost, emissions-free fuels.**

Application of the goals set forth in the CERES Report and the WGA Least Cost Integration Reports to the Company's Preferred Portfolio would lead the Commission to require additional renewable investments to reduce risks and costs. Unlike natural gas-fired generation, renewable generation (e.g. from wind, solar, and geothermal power) is largely immune to fuel price risk. The production tax credit was extended through 2013 and utilities surrounding PacifiCorp issued RFPs for wind energy, rushing to latch onto these savings for ratepayers. PacifiCorp's lack of interest highlights weaknesses in its resource planning and business models which run contrary to ratepayer interests.

The Company's weakly modeled Preferred Portfolio relies heavily on front office transactions, short term market purchases to fill its near term resource requirements. IRP Vol. I, Fig. 8.30, p. 231. New "firm market purchases" comprise 800 MW growing to 1000 MW of the Company's peak capacity requirements by 2020. This plan misses opportunities for investment in low cost clean energy which Interwest and others have urged the Company to consider before federal incentives expire.<sup>3</sup> Front office transactions are shielded from other risk and cost analysis in the IRP which are fundamental to prudent utility long term resource planning, including carbon costs, price volatility, water availability and water quality concerns and other public policies. Short term contracts and spot market purchases prevent the Company's

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<sup>3</sup> Utility scale solar energy from Southern Utah would benefit from the Investment Tax Credit which expires at the end of 2016. In 2012, the U.S. solar industry installed more than 3,300 MW of solar capacity, an increase of 76% over 2011, and currently employs over 119,000 American workers. The average cost of a completed PV system dropped by 24 percent over the past year, and costs continue to fall. <http://www.seia.org/research-resources/case-solar-investment-tax-credit-itc>. Notwithstanding the pending expiration of this 30% savings to ratepayers, PacifiCorp continues to ignore utility scale solar energy as a potential resource in its 2013 IRP.

ratepayers from benefitting from the current “buyer’s market” in long-term stable-priced renewable energy contracts.

Recent PTC-eligible wind RFPs in neighboring states have revealed record-low prices available to Utah ratepayers under long term contracts: all-in prices (including bid price, integration costs and transmission costs) were \$34 to \$72/MWh, using high capacity factors similar to those available to PacifiCorp in Wyoming which could serve Utah ratepayers.<sup>4</sup> Public Service Company of Colorado reported that their recent wind RFP will provide hundreds of millions in savings to their customers over 20 years. *Id.* While the PTC provides a large part of these savings, at these low prices wind energy available to serve Utah ratepayers will remain cost-competitive regardless of changes in federal incentives because they provide stable prices over the long term without fuel costs. Utility scale solar energy can also be acquired at much lower cost than as modeled in the IRP. Stakeholders provided extensive comments on this subject, including national study results reflecting as much as 30% lower costs than those modeled in the 2013 IRP. PacifiCorp refused to incorporate modeling changes proposed by stakeholders which would have advanced high renewables, low carbon portfolios over the Company’s final preferred options. Wind energy can provide substantial hedging benefits over the long run with or without federal tax incentives.<sup>5</sup> The Wind as Hedge Report concludes that utilities which invest in wind power can rest assured that, on average and in real dollar terms, wind power will cost them no more (and even slightly less) in 2031 than it does today. In

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<sup>4</sup> “Public Service Company 2013 All-Source Solicitation 20-Day Report”, May 30, 2013, Docket No. 11A-869E, p.6, [https://www.dora.state.co.us/pls/efi/EFI.Mark\\_Show\\_Filing?p\\_key=A\\_3023&p\\_fil=G\\_160191](https://www.dora.state.co.us/pls/efi/EFI.Mark_Show_Filing?p_key=A_3023&p_fil=G_160191).

<sup>5</sup> “Revisiting the Long Term Hedge Value of Wind Power in an Era of Low Natural Gas Prices”, M. Bolinger, March 2013, Exec. Sum, p. I; <http://emp.lbl.gov/publications/revisiting-long-term-hedge-value-wind-power-era-low-natural-gas-prices> (“Wind as Hedge Report”).

contrast, natural gas prices are difficult to lock in over time and have an overwhelming price risk on the upside rather than the downside.

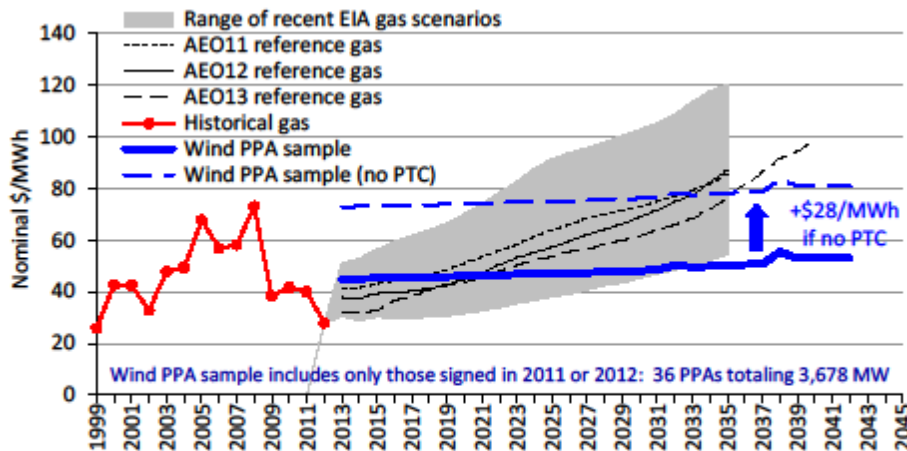
. . . Although short-term gas price risk can be effectively hedged using conventional hedging instruments (like futures, options, and bilateral physical supply contracts), these instruments come up short when one tries to lock in prices over longer terms – e.g., greater than five or ten years. It is over these longer durations where inherently stable-priced generation sources like wind power hold a rather unique competitive advantage.

Id. Currently, natural gas prices are depressed and are projected to remain low in the near term, so hedging budgets are considered to be an unnecessary expense by some regulators. However, participants in the futures market expect (on average) spot gas prices to rise from current levels in the coming years. Price risk for natural gas remains skewed on the upside. Wind as Hedge Report, pp. 8-10. Natural gas prices will rise due to the usual pressures on commodity markets: exploiting the resource costs money, so if the price is too low, supply will drop, balancing supply in demand or resulting in greater demand relative to supply, thus increasing prices again. In January 2012, the U.S. Energy Information Administration (EIA) sharply revised downward its estimates of U.S. shale gas reserves by more than 40 percent and its estimates of shale gas from the Marcellus region by two-thirds. Reduced long-term supplies and a significant commitment to natural gas for new electric generation could obviously lead to upward pressure on natural gas prices. CERES Report, p. 17

These factors will ultimately expose PacifiCorp customers to the inevitable fuel price increases. Wind as Hedge Report, p. 13. Because natural gas prices have an inverse relationship to the broader market trends, consumers of natural gas have stronger reasons to hedge (more risk exposure) than do producers. Producers will be naturally hedged by low prices

with a rising market, whereas a consumer is exposed to high natural gas prices in tandem with a down market, when they can least afford these high electricity costs.<sup>6</sup>

Over the long run, wind offers a unique competitive advantage over natural gas due to the stable or fixed long term prices available from wind and the lack of long term fixed prices available for natural gas. *Even without the PTC*, wind provides long term hedge against natural gas prices:



**Figure 9. Comparison of Recent Wind PPA Sub-Sample to Projected Range of Natural Gas Prices**

Fig. 9, Wind as Hedge Report, p. 20. Therefore, the Commission should require the Company to incorporate additional wind energy acquisitions as an integral part of its hedging strategies rather than committing to a decades-long marriage to the volatile natural gas markets.

Other utilities recognize wind is an inexpensive alternative fuel source, in stark contrast to PacifiCorp’s refusal to acquire these fuel-free resources.<sup>7</sup> Benjamin Fowke, III, President and Chief Executive Officer of Xcel Energy, testified before Congress recently as follows:

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<sup>6</sup> Utility-Scale Wind and Natural Gas Volatility, Uncovering the Hedge Value of Wind for Utilities and Their Customers, L. Huber, Rocky Mountain Institute, July 2012, [http://www.rmi.org/Knowledge-Center/Library/2012-07\\_WindNaturalGasVolatility](http://www.rmi.org/Knowledge-Center/Library/2012-07_WindNaturalGasVolatility), p. 9, citing Bolinger “Wind as Hedge Report”.



. . . Like many utilities, we have taken advantage of low natural gas prices to serve growing customer demand and allow replacement of aging coal plants. However, because of our renewable portfolio, we've been able to avoid becoming too reliant on the natural gas market. Wind energy acts as a natural hedge against fuel price risk, reduces our emissions and meets our customers' interest in clean energy.

In fact, wind is key to our strategy. We recently contracted for wind power in Colorado at a price that is competitive with natural gas-fired generation even at today's low gas prices. As a result, we're now integrating wind at levels that we never before imagined – up to 57% of our energy in Colorado in the peak hour. Our annual average wind energy will reach 20% this year in Colorado and 14% in Minnesota. . . .<sup>8</sup>

Xcel Energy considers wind to be critical to cost savings, while PacifiCorp will be increasing its regulatory and fuel price risks by failing to acquire stable-priced long-term purchase power agreements for renewables in favor of short term market purchases and fossil fuel-based generation.

Several large utilities have invested heavily to provide long term savings to its customers while PacifiCorp lags behind. Xcel Energy announced the acquisition of another 2000 MW of wind capacity to save its ratepayers hundreds of millions over the next 20 years. MidAmerican Energy announced an addition 1050 MW of wind resources in Iowa by 2015, lowering the

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<sup>7</sup> Wind as Hedge Report, p. 15, fn. 19. Among the utilities buying more wind power are Xcel Energy, MidAmerican Energy, Tri-State Generation and Transmission Association, Oklahoma Gas & Electric, Minnesota Power, Alliant Energy Corp, Puget Sound Energy and numerous others. In Colorado Xcel Energy has set national records for generation more than half its electricity from wind power and is now seeking regulatory approval to accelerate its resource acquisition process to allow for the addition of value priced wind energy. MidAmerican Energy announced at the end of December that it had completed three more wind projects totalling 407MW in Iowa. Wind now comprises 30 percent of the utility's generation portfolio. "We have a great opportunity to see if additional wind resources in Colorado would be of economic benefit to our customers with the extension of the federal tax credit, but we must act quickly," said Ben Fowke, chairman, president, and CEO of Xcel Energy. "Our request is not being driven by state renewable energy standards, but by the opportunity to reduce costs." <http://www.renewableenergymagazine.com/article/us-utilities-rush-to-invest-in-wind-20130225>. (emphasis added).

<sup>8</sup> Witness Testimony before the House Committee on Energy and Commerce Subcommittee on Energy and Power "American Energy Security and Innovation: the Role of a Diverse Electricity Generation Portfolio", Benjamin G.S. Fowke, III, March 5, 2013.

utility's carbon emissions by 10.3 percent. NV Energy is planning to retire 800 MW of coal resources to be replaced with 350 MW of wind and additional natural gas. Interwest and others urged PacifiCorp benefit from this current "buyer's market", with emphasis this year to reap the benefits of the production tax credit as extended. PacifiCorp declined to issue an RFP to allow its own ratepayers to benefit from these federal incentives and has arbitrarily eliminated wind acquisitions from its IRP until well into the next decade. This strategy is unsupported when considering costs and risks passed on to ratepayers and reveals PacifiCorp as an outlier among national utilities.

**ii. The Company Should Be Required to Include Additional Renewables In the Near Term and Obtain PPAs or New Wind Plants for Physical Compliance With the Washington RPS.**

PacifiCorp's 2013 Business Plan and the Preferred Portfolio included 400 MW of wind prior to 2020 until they arbitrarily removed this plan in favor of unbundled renewable energy credits ("RECs") to comply with the Washington RPS. IRP, Vol. I, p. 271, Table 9.4. This decision is not supported by a least-cost, least-risk analysis. Physical compliance with the RPS by purchase of PPAs or building new wind plants will reduce fuel volatility risk, REC pricing risk, and production tax credit availability risk relative to an unbundled compliance strategy. The availability of banked RECs cannot be assured into the future. The Company would also benefit from increased geographic diversity and future REC revenues. Therefore the Commission should require the Company to fully justify this change in compliance strategy prior to acknowledgement in light of the increased risks.

**C. Modeling Improvements and Studies to More Accurately Reflect Costs, Benefits and Risks Would Reveal Substantial Savings.**

**i. Capacity Value Study for Renewables Would Prevent Undue Discrimination.**

Interwest urges the Commission to require PacifiCorp to improve its effective wind load carrying capacity analysis prior to acknowledgement of the IRP. As this Commission noted in its recent Order related to pricing for Qualified Facilities producing renewable energy, the “Exceedence Method” used by PacifiCorp in the IRP is not an industry standard approach to calculating capacity or energy contributions from renewables.<sup>9</sup> It should be rejected as a basis for modeling renewable resources in the IRP, as it was in the QF Docket. The Company should be required to perform a new capacity contribution analysis and adopt the capacity payments approved by the Commission in the QF Docket of 20.5 percent for wind and 68 percent (Fixed Solar) and 84 percent (Tracking Solar) in the interim pending PacifiCorp’s completion of this new capacity contribution study. The Effective Load Carrying Capability (“ELCC”), represents a power plant’s (or aggregated group of power plants’) ability to increase the total generation capacity of a grid without increasing its loss of load probability, and the Capacity Factor Allocation Method (“CF”) described in the QF Docket, as a simpler version that reasonably approximates the results achieved by the ELCC method.<sup>10</sup> The 2013 IRP measures portfolio resource adequacy by comparing annual energy not served, so System Optimizer should use capacity values that reflect annualized capacity contributions reflected by the ELCC or CF methods rather than the 4% capacity value currently assumed as wind’s contribution. In addition, PacifiCorp’s analysis is based on its existing fleet, whereas geographically diverse

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<sup>9</sup> “Order on Phase II Issues”, August 16, 2013, Utah Public Service Commission Docket No. 12-035-100, *In the Matter of the Application of Rocky Mountain Power for Changes in the Renewable Avoided Cost Methodology for Qualifying Facilities Projects Larger Than Three Megawatts* (“QF Docket”), pp. 29-31.

<sup>10</sup> QF Docket Phase II Order, pp. 25-26.

purchase power agreements for long term contracts could reduce overall net power costs. The new study should be peer-reviewed and published, with additional analysis of the savings which can be provided by increased geographic diversity for its wind resources.

**ii. Forecasting Study and Operational Improvements Will Reveal Savings From Diversity.**

PacifiCorp's improved wind integration analysis and operational changes to lower integration costs for variable energy resources will reduce costs to ratepayers and ultimately will reframe its resource plan. The new Wind Integration Study incorporates recommendations from the technical review committee and stakeholders, resulting in substantially reduced costs.

PacifiCorp's agreement with CAISO to form an energy imbalance market will bring 5-minute dispatch, reduced reserve requirements and increased technological and locational diversity for renewables. The benefits remain subject to level of engagement, but conservative estimates of total annual benefits in 2017 range from \$21 million in the low range of the 100 MW transfer capability scenario, to \$129 million in the high range of the 800 MW transfer capability scenario (2012\$).<sup>11</sup> The utilities will be able to increase their dynamic transfers, thus lowering costs of integration, increasing reliability, and increasing use of the existing transmission resources, reducing net transmission expansion requirements overall.<sup>12</sup> The EIM will enable PacifiCorp to share balancing requirements, allowing PacifiCorp and CAISO utilities to develop and benefit from renewable resources located in high capacity factor/low cost resource areas.

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<sup>11</sup> "PacifiCorp-ISO Energy Imbalance Market Benefits", Energy and Environmental Economics, Inc., March 13, 2013, p. 31; <http://www.caiso.com/Documents/PacifiCorp-ISOEnergyImbalanceMarketBenefits.pdf>.

Prior to acknowledging the IRP or recovery of fuel costs from ratepayers, the Commission should consider requiring PacifiCorp to adopt improved forecasting methods. PacifiCorp could also be required to investigate third party forecasting systems and report on potential savings.<sup>13</sup> As an example of the savings brought to another utility from improved forecasting, Public Service Company of Colorado’s recent sensitivity analysis showed substantial savings from new improved forecasting methods:

Table 19: Average System Operations Wind Integration Cost – Forecast Methods Sensitivities (\$5.06/MMBtu gas price) [PSCO]<sup>14</sup>

Forecast Methods Sensitivity Cases	Average System Operations Wind Integration Cost (\$/MWh)	
	2 GW	3 GW Scenario 2
Base Case	4.11	5.44
No Forecast Sensitivity	10.24	14.69
Perfect Forecast Sensitivity	1.48	3.33

Several regional wind integration studies have also looked at the value of wind power forecasting for reducing grid operating costs, as summarized in Figure 3 below. While the results of these studies vary, they all indicate significant value from improving wind power forecasting.

<sup>12</sup> “Dynamic Transfers for Renewable Energy in the Western Interconnection – Western Renewable Energy Zones Initiative Phase III”, Coffee, McIntosh, Hoffman, and Nagel, Renewable Energy Project, June 2013, p. 23, <http://www.raonline.org/>.

<sup>13</sup> This is an example of additional operational improvements which PacifiCorp could be required to make as a tool for reducing net power costs prior to the Commission approving net power cost recovery in future dockets. See also “What Could Western States Do to Encourage Use of Variable Generation Forecasting?” *Meeting Renewable Energy Targets in the West at Least Cost: The Integration Challenge*, Western Governor’s Assn., June 10, 2012, [http://www.westgov.org/reports/cat\\_view/95-reports/263-2012](http://www.westgov.org/reports/cat_view/95-reports/263-2012), (“WGA Recommendations”), p. 53.

<sup>14</sup> PSCO’s 2011 2G-3G Wind Integration Study, p. 31. <http://www.xcelenergy.com/staticfiles/xcel/Regulatory/Regulatory%20PDFs/PSCO-ERP-2011/Attachment-2.13-1-2G-3G-Wind-Integration-Cost-Study.pdf>.

	<u>Projected Annual Operating Cost Savings</u>			
	<u>Peak Load</u>	<u>Wind Generation</u>	<u>State-of-Art Forecast vs. No Forecast</u>	<u>Additional Savings from Perfect Forecast vs. State of Art Forecast</u>
California	64 GW	7.5 GW	\$68 M	\$19 M
	64 GW	12.5 GW	160 M	38 M
New York	33 GW	3.3 GW	95 M	25 M
Texas	65 GW	5.0 GW	20 M	20 M
	65 GW	10.0 GW	180 M	60 M
	65 GW	15.0 GW	510 M	10 M

**Figure 3: Value of Forecasting, Various Wind Integration Studies<sup>15</sup>**

The large geographic area included within PacifiCorp’s service area would lead one to assume that additional savings along these lines are possible from modern forecasting methods. PacifiCorp’s own IRP modeling revealed savings from sub-hourly scheduling of wind reserve requirements, which have not yet been reflected in the Wind Integration Study. PacifiCorp should also consolidate its East and West balancing areas to reduce overall reserve requirements.<sup>16</sup>

PacifiCorp’s portfolio would benefit from increased geographic diversity in wind resources which could be acquired as part of a cleaner portfolio recommended herein. PacifiCorp

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<sup>15</sup> Source R. Piwko, “The Value of Wind Energy Forecasting,” presentation at the Utility Wind Integration Group forecasting meeting, February 2009, also set forth in American Wind Energy Association Policy Paper on Wind Forecasting, June 2012. A California grid study found that the use of existing wind forecasting techniques reduced grid integration costs by \$4.37/MWh. “The Ability of Current U.S. Electric Industry Structure and Transmission Rules to Accommodate High Wind Energy Penetration”, Gramlich and Goggin, p.2, [http://www.awea.org/documents/issues/upload/Gramlich-Goggin\\_Wind\\_Integration\\_in\\_the\\_US.pdf](http://www.awea.org/documents/issues/upload/Gramlich-Goggin_Wind_Integration_in_the_US.pdf), citing California Intermittency Analysis Project, 2007.

<sup>16</sup>IRP public presentation, Aug. 13, 2012, Slide 52; [http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Integrated\\_Resource\\_Plan/2013IRP/2013IRP\\_PIM05\\_08-13-12.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/2013IRP_PIM05_08-13-12.pdf).

could be required to provide a study of the costs and benefits of increased geographic diversity brought by the EIM and expanded wind development in the Western Renewable Energy Zones included throughout its service territory. These actions to improve the Company's variable resource integration technologies and practices comport with the Western Governor's Association recommendations for best practices.

**iii. PacifiCorp Should Apply a Natural Gas Volatility Adder to Modeling Inputs.**

In order to properly assess the risks of investment in natural gas plants, natural gas price forecasts should also include a volatility adder to reflect the risks of price volatility. There are virtually no long term contracts available for natural gas supplies, exceeding 3 to 5 years in length, and they would not likely be approved due to risk of failure, in stark contrast to the long term purchase power agreements available from independent power producers for renewable energy. As a result there is relatively greater price risk when modeling natural gas-fired resources, including coal plants converted to run on natural gas like the Naughton 3 Unit. A natural gas price adder is applied on a regular basis in some regulatory actions.<sup>17</sup> This improved analysis would more accurately reveal the costs and risks of heavy reliance on natural gas as a baseload resource as compared to fuel-free stable priced renewables.

**CONCLUSION**

The Commission should refuse to acknowledge the IRP and the Action Plan due to the excessive, high- risk coal plant investments and renewable energy capacity contribution analysis. The coal plant investments must be reviewed in light of the proposed revision of EPA rules and

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<sup>17</sup> See, e.g., "Corrected Rebuttal Testimony of Timothy J. Carter", *In the Matter of the Application of Public Service Company of Colorado for Approval of its 2011 Electric Resource Plan*, Docket No. 11A-869E, filed July 16, 2012, p. 4; [https://www.dora.state.co.us/pls/efi/EFI.Show\\_Filing?p\\_fil=G\\_131704&p\\_session\\_id=](https://www.dora.state.co.us/pls/efi/EFI.Show_Filing?p_fil=G_131704&p_session_id=).

the President's Climate Action Plan. The Company should improve its capacity value analysis for renewables, forecasting methodologies and analyze whether geographic diversity will save costs by reducing the variability of renewable resources on its system prior to investment in coal plants and acquiring more natural gas. In the future, in order to add enforceability of policies imposed by the Commission without overburdening staff, the Commission could require the Company to minimize integration costs, and engage in additional planning and studies as suggested herein as a pre-condition to a) net power cost recovery; b) retention of REC revenues; and c) imposition of integration costs in a variety of proceedings including rate cases, if these studies revealed additional consumer savings which the Company missed due to ineffective or incomplete integrated resource planning.



Interwest sincerely appreciates the opportunity to provide these comments.

Respectfully submitted this 9<sup>th</sup> day of September, 2013,

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