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**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

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**In the Matter of PacifiCorp's 2011  
Integrated Resource Plan**

**DOCKET NO. 11-2035-01  
Comments of Utah Clean Energy**

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Utah Clean Energy appreciates the opportunity to provide comments on PacifiCorp's 2011 Integrated Resource Plan (IRP) Update, dated March 30, 2012. Utah Clean Energy's mission is to lead and accelerate the clean energy transformation with vision and expertise. We work to prevent energy waste, facilitate the creation of clean energy resources, and envision and build a smart energy future for the long term public interest.

Pursuant to our mission, we look at utility resource planning with a big-picture, long-term perspective. We consider integrated resource planning to be a critically important process that should facilitate and benefit from a long-term look at risks, scenarios, possibilities, and costs. We submit these comments on the IRP Update with the intention of contributing to the ongoing improvement of PacifiCorp's integrated resource planning process.

## COMMENTS ON THE 2011 IRP UPDATE

### Carbon Dioxide Emission Costs and Compliance

Utah Clean Energy is concerned with the solely short-term planning the Company is utilizing with regard to carbon dioxide emissions. The Company utilizes political will as its proxy for the parameters of risk associated with carbon dioxide emissions considered in the IRP. The Company changed its carbon dioxide costs and the timing of the start of CO2 regulations due to recent changes in federal carbon policy expectations. The Update explains,

Subsequent to the adoption of CO2 regulatory assumptions for the 2011 IRP, federal policy expectations have changed with regard to timing, pricing, and design across all surveyed forecast services. The slow economic recovery, in tandem with predictions of sustained low natural gas prices and a lack of momentum for CO2 legislation, has significantly altered expectations as recent as a year ago.<sup>1</sup>

While near-term vacillations in federal carbon policy are to be expected, it is imprudent to rely solely on near term political will for planning assumptions that implement the acquisition of resources that last for fifty years or more. The Company should consider not only the cost of federal climate policy, but also the cost of retrofitting its preferred portfolio to meet significant reductions in greenhouse gas emissions within the coming decades.

Additionally, although there is no current federal carbon policy, the costs and risks associated with continuing to emit high levels of greenhouse gas emissions are real and growing. Carbon emissions are increasing at an unprecedented rate. National Oceanic and Atmospheric Administration (NOAA) recently reported that this spring marks the first time a monthly average measurement for carbon dioxide reached 400 parts per million (ppm) in a remote location, indicating that worldwide average concentrations of carbon dioxide will reach 400 ppm by

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<sup>1</sup> 2011 IRP Update, page 40.

2016.<sup>2</sup> “That observed increase, independent of the seasonal ups and downs . . . , is due to the accelerating pace of emissions from human activities, particularly the burning of fossil fuels.”<sup>3</sup>

Researchers at National Aeronautics and Space Administration (NASA) have found that 2005 and 2010 are tied for reaching the hottest global temperatures on record.<sup>4</sup> Extreme weather events are increasing: in 2011, a record-breaking \$1 billion-plus was spent dealing with natural disasters. Recently, insurance companies confirmed to members of the U.S. Senate that the costs to taxpayers and businesses from extreme weather will continue to soar because of climate change.<sup>5</sup>

If PacifiCorp maintains its preferred portfolio predominated by fossil-fueled resources, it is likely that PacifiCorp will have to make sudden and costly changes to its resource portfolio in the future. Although PacifiCorp’s political outlook is narrowed to the next decade, it is probable that social and political will for greenhouse gas regulation will increase in time to impact the resource decisions PacifiCorp is making today. And without robust planning, ratepayers will have to make costly investments to fix what could have been done more smartly from the start. Accounting for such expected possibilities should be a part of IRP so that PacifiCorp may have the opportunity to transition smoothly and cost-effectively to a less greenhouse gas-risky portfolio.

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<sup>2</sup> National Oceanic and Atmospheric Administration, *NOAA: Carbon Dioxide Levels Reach Milestone Levels at Arctic Sites* (May 31, 2012), available at <http://researchmatters.noaa.gov/news/Pages/arcticCO2.aspx>. Attachment 1.

<sup>3</sup> *Id.*

<sup>4</sup> National Aeronautics and Space Administration, *NASA Research Finds 2010 Tied for Warmest Year on Record* (January 12, 2011), available at <http://www.giss.nasa.gov/research/news/20110112/>. Attachment 2. 1998, 2002, 2003, 2006, 2007 and 2009 are tied for third, while 2011 comes next. *Id.*; see also, National Aeronautics and Space Administration, *NASA Finds 2011 Ninth Warmest on Record* (January 19, 2012), available at <http://www.nasa.gov/topics/earth/features/2011-temps.html>.

<sup>5</sup> Pat Speer, *Climate Change: Insurers Confirm Growing Risks, Costs* (Insurance Networking News, March 2, 2012), available at <http://www.insurancenetworking.com/news/insurance-climate-change-risk-ceres-30007-1.html>. Attachment 3.

This Commission should ensure that ratepayers are not accountable for the ineffective resource planning of PacifiCorp. Greenhouse gas costs and risks need to be meaningfully accounted for in IRP modeling. Not accounting for greenhouse gas costs and risks not only erroneously advantages the selection of Company owned gas plants and other fossil-fueled resources, but it deprives the models of a means of effectively valuing the risk-mitigating benefits of efficiency and renewable resources.

### **Wind Resources**

Wind resource acquisition continues to be artificially constrained in the IRP Update. Not only are wind resource additions constrained by transmission planning assumptions, but out-of-date turbine capacity factors further handicap the useful modeling of wind resources. The Action Plan Update states that “Incremental wind resource acquisition does not begin until the end of 2018 due to the need for incremental transmission capacity to be able to deliver remote resource generation to load.”<sup>6</sup> However, there are wind projects located in Utah, with access to transmission that are ready for development in the near term—well before 2018. Nevertheless, because the modeling is constrained such that it cannot select wind in the near term, the Company is using this IRP result to deny wind developers avoided cost pricing based on the methodology developed for wind resources.

As a result, the company is not acquiring local, risk mitigating wind resources that do not require costly rate payer funded transmission upgrades. PacifiCorp’s modeling of wind resources has become a self-fulfilling prophecy: the constraints prevent the model from selecting wind in the near term and the modeling results are used to justify the Company’s refusal to provide indicative funding for Utah wind resources. Restricting wind resources in the IRP and

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<sup>6</sup> 2011 IRP Update, page 6.

then using the results to influence the avoided cost pricing for PURPA contracts is an improper and imprudent application of integrated resource planning.

### **Geothermal Resources**

Although a significant amount of geothermal energy was selected in the 2011 IRP, PacifiCorp decided to remove that selection from its preferred portfolio. In the Action Plan Update the Company commits to refining the geothermal resource potential, updating resource costs, and enabling geothermal to be an eligible resource in PacifiCorp's future all source RFPs. The IRP process, however, is the best arena to determine how much geothermal should be included in the Company's least cost, least risk portfolio. Utah Clean Energy is skeptical that geothermal resources can effectively compete in the RFP arena; while geothermal energy provides significant risk-mitigating benefits and hedging value to the utility and ratepayers, these benefits may not be properly valued in the all source RFP process.

### **CHP**

The Update indicates that CHP resource opportunities will be evaluated as part of resource planning efforts to be conducted during 2012.<sup>7</sup> Utah Clean Energy requests more details about how CHP resources will be assessed by the company this year, including assumptions used, opportunity for comment, and consideration of utility-specific obstacles to greater CHP deployment. The type of CHP known as bottoming cycle or waste-heat-to-power deserves particular emphasis in integrated resource planning since those systems make use of currently-wasted energy, often use no additional fuel, often produce no additional emissions, and help reduce costs for industrial plants in PacifiCorp's service area. Inclusion of CHP in IRP can be either through rate-based systems or through incentives for privately-funded customer-sited

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<sup>7</sup> 2011 IRP Update, page 60, footnote 19.

resources similar to other efficiency measures, and we request that PacifiCorp consider modeling both of these options.

### **Renewable Energy Resource Cost Assumptions**

PacifiCorp indicates that supply-side resource costs and performance parameters were not updated for the Update.<sup>8</sup> As expressed in comments on the 2011 IRP from several parties, the Company's cost and performance assumptions for renewable resources were out of date when the 2011 IRP was published in March of 2011. The Company should update its renewable resource cost assumptions just as it updates its natural gas prices to reflect changes in the market and ensure more accurate analysis.

### **Intermediate/Base-load Thermal Supply Side Resources**

The Company's IRP Action Plan Update is heavily weighted toward investments in new natural gas plants. If the company is going to acquire new natural gas plants, resource flexibility and ramping capability should be highly valued in resource planning and required in the RFP process. The energy sector is evolving rapidly and it will be in the best interest of the Company and ratepayers to plan for increasing levels of variable resources and robust demand response.

### **Coal Replacement Study**

The Coal Replacement Study Update is an important step toward more fully addressing the risks of continued investments in coal-fired power plants. However, more information and analysis are needed to fully evaluate the continued value of coal units versus retirement as well as a diversity of replacement alternatives. To that end, Utah Clean Energy recommends that the following recommendations be incorporated into the coal replacement study.

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<sup>8</sup> 2011 IRP Update, page 43.

Expand the study to include all PacifiCorp units: The Coal Replacement Study was limited to 18-BART eligible coal units in which the Company has an ownership interest.<sup>9</sup> The Coal Replacement Study should be expanded to include all coal units in which the Company has an ownership interest, not just BART eligible units. BART is not the only regulatory program driving coal unit retirements. Specifically, the MATS program, coal ash disposal regulations, greenhouse gas regulation, Clean Water Act intake structure regulations, and NAAQS requirements all have the potential to impose significantly expensive upgrades to PacifiCorp's coal fleet. This is evident from the announced retirement of PacifiCorp's Carbon plant, which is not BART-eligible, but will be closing due to upgrades needed to comply with the MATS program. Any time a major upgrade is needed at a PacifiCorp coal unit, a retirement/replacement analysis should be conducted.

The Study should be re-run using final, EPA-approved BART determinations: The Study assumed that the requirements contained in the various state regional haze SIPs would be approved by EPA and become the final BART determinations for the PacifiCorp fleet. However, the EPA has made, and will be making, significant changes to state regional haze SIPs in Wyoming, Utah, Arizona, and perhaps Colorado. Evidence of this fact is EPA's proposed rule for the Wyoming regional haze SIP in which EPA is proposing more stringent controls and emission limits for PacifiCorp coal units. Moreover, EPA's actions to date would suggest that it will likely impose more stringent BART requirements in Arizona and Utah than are contained in the state SIPs. Thus, the Study in its current form fails to account for more significant investment that will likely be required of PacifiCorp to comply with EPA-approved BART requirements.

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<sup>9</sup> IRP Update, page 71.

Heavy reliance on ESPs: The Study fails to emphasize the fleet's heavy reliance on electrostatic precipitators (ESPs) for particulate matter control. Baghouses are the industry standard for PM control, not ESPs. PacifiCorp's own fleet reveals that ESPs require extensive O&M and have diminishing effectiveness over time. In addition, it is highly questionable whether PacifiCorp's ESP units will be able to comply with the MATS rule. Therefore, the study should consider the vulnerability of PacifiCorp's ESP-controlled units in the analysis.

Dave Johnston Units 1 and 2: Dave Johnston Units 1 and 2 were not analyzed in the coal replacement study. However, EPA's recently released regional haze partial Federal Implementation Plan for Wyoming (published in the Federal Register on June 4, 2012) requires low NOx burners at these units by July 31, 2018. Dave Johnston Units 1 and 2 may also need pollution controls for hazardous air pollution, including baghouses for non-mercury metals and acid gas removal. PacifiCorp should include analysis of these units in its coal replacement analysis.

Bridger Units 1 and 2: EPA's partial Federal Implementation Plan for regional haze includes a requirement for selective catalytic reduction technology for NOx removal at Bridger units 1 and 2 by the end of 2017. These costs should be considered in the Coal Replacement Study. PacifiCorp should also model the costs of baghouse installation or other controls necessary for removal of hazardous air pollutants.

Wyodak and Dave Johnston Unit 3: EPA's partial Federal Implementation Plan for regional haze includes a requirement for selective non-catalytic reduction technology for NOx removal at Wyodak and Dave Johnston Unit 3. These costs should be fully considered in the Coal Replacement Study.



More complete consideration of anticipated coal combustion waste disposal costs: The EPA is in the process of promulgating federal rules to control disposal of coal combustion waste under the Resource Conservation and Recovery Act (RCRA). This power plant waste often includes heavy metals and other constituents that can be a source of water or land pollution if not handled and disposed of properly. While EPA's rules are not likely to be finalized until at least 2013, costs associated with compliance with the rule should be modeled as an important part of anticipated coal plant costs. Currently, PacifiCorp's Coal Replacement Study only considers cost assumptions for proposed requirements under subtitle D of RCRA, which would be less stringent than regulation under subtitle C, which would phase out the wet handling of coal combustion waste and existing surface impoundments. Since EPA is considering adopting rules under subtitle C, PacifiCorp should model the costs of subtitle C compliance as an option in its Coal Replacement Study.

Better integration of resource replacement alternatives: Because of the importance of investing in a diverse mix of resources, Utah Clean Energy is concerned that the coal replacement study does not thoroughly consider a fuller review of coal plant replacement resources. The Coal Replacement Study Update indicates,

Resource replacement options were expanded to include incremental wind resource, and where applicable, brown field gas conversion alternatives. The wind and gas conversion resource replacement options are in addition to the green field natural gas resource, front office transactions (FOTs), and demand side management (DSM) resource replacement options considered in the original coal replacement study.<sup>10</sup>

We would like more clarification on how replacement resources are treated in modeling. Does the model have to pick a resource to replace the specific attributes of the retiring coal plant, or is it allowed to pick a mix of resources based on system needs? Are all other system resources

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<sup>10</sup> 2011 IRP Update, page 67.

held constant or is the model allowed to change the portfolio in response to the decision to retire a coal plant?

Carbon risk: Electricity generation is the largest emitter of greenhouse gas emissions in the United States.<sup>11</sup> As discussed above, there are significant costs and risks associated with burning coal and other fossil fuels. Nevertheless, these significant costs are not accounted for in the Company's assessment of current or anticipated environmental regulations and are therefore not considered in the coal replacement study (or the IRP). Carbon risk costs—both from regulation and from future retrofit or retirement costs—can and must be considered in integrated resource planning.

### **General Comments on the IRP Process**

PacifiCorp's IRP Update Action plan contains significant changes from the 2011 IRP filed on March 31, 2011. It is worrisome that a process that purports to utilize a long-term view of costs and risks should be affected so significantly by the passage of a single year. Utah Clean Energy remains very concerned that PacifiCorp's long-term, integrated resource planning process is not robust and that the Company is making important, lasting resource decisions without consideration beyond the next few years or election cycles or the impact of the long-term on what portfolio is least cost and least risk.

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<sup>11</sup> United State Environmental Protection Agency's U.S. Greenhouse Gas Inventory, available at <http://www.epa.gov/climatechange/emissions/usgginventory.html>.