

Portfolio Selection

The PacifiCorp IRP does not select the least cost least risk portfolio with an optimal amount of renewable energy. The preferred portfolio does not meet the IRP standards and guidelines requirement to develop a set of resources best suited to “the expected combination of costs, risk and uncertainty².”

Of the top two portfolios 5 and 8, portfolio 8 offers significant risk mitigation at a relatively small increase to the PVRR. Portfolio 8 is the top performing portfolio under a variety of risk scenarios and thus should be the preferred portfolio in the IRP³. And it is important to note that portfolio 8 performed *best* on an overall average and PVRR variability basis.

The two top performing portfolios are summarized below in an excerpt from Table 8.1⁴ of the 2008 IRP. Portfolio 8 includes an additional 1350 MW of risk mitigating cost-stable carbon-free wind energy and an additional 85 MW of other stable rate carbon-free renewable resources. The PVRR is not significantly different between the two portfolios.

Portfolio 5 was developed using the low June 2008 natural gas projections, which are the lowest natural gas price projections analyzed in the IRP. The IRP illustrates that portfolio 5 performed best in low gas/low CO2 tax scenarios and performed worst in high gas price and high CO2 tax cases and that portfolio 8 performed best in medium/high gas price and medium/high CO2 tax scenarios, but performed worst in low gas/low CO2 cases. When selecting the preferred portfolio we must consider the symmetry of risk and the impact of the risk of being wrong for each portfolio. Fuel price volatility and carbon risk are asymmetrical risks. The risk of being wrong and selecting portfolio 8 if we find ourselves in a future where gas prices and carbon prices actually remains low is known, bounded and small as evidenced by the small difference between the PVRR for portfolios 5 and 8. Conversely and most importantly, the risks associated with fuel price variability

² Ibid. pg 41

³ PacifiCorp, 2008 *Integrated Resource Plan*, Volume I, pg 233-234

⁴ Ibid. pg 181

and carbon regulation present a much higher risk and potential cost to the ratepayer and share holders (if all the cost risks are not put on the ratepayer).

Furthermore, portfolio 8 goes after renewables in a much faster timeline, thus preparing the Company, their ratepayers and shareholders for the inevitable carbon constrained and resource limited future that awaits future ratepayers. Speedy acquisition may also result in the cheapest wind acquisitions as commodity and turbine costs are low and the best sites with easy access to transmission will be developed first. By not going aggressively after these resources in a timely manner, the company and ratepayers will miss this opportunity. One of the company's concerns articulated in the February 2, 2009 power point presentation to stakeholders was their ability to acquire 2600 MW of wind generation in 10 years. PacifiCorp specifically indicated that they were not confident that they could acquire 2400-2600 MW of wind generation over a ten year period and this concern influenced their portfolio selection. See quote from presentation below:

Considering fuel source diversity, case 5 does not have as large a share of renewable, DSM, and distributed generation resources as that for case 8, the runner-up; however, the amount of wind investment in the first 10 years for case 8 (over 2,600 MW) is a concern from procurement and operational perspectives⁵

Based on a review of wind development in the United States in the last two years, acquiring and integrating 2600 MW over a ten year period is quite reasonable. In the last two years over 13,000 MW of new wind generation has been installed in the United States.⁶ If the utility is concerned with the ability to acquire this resource it should be addressed through pathway analysis as required by the IRP Standards and Guidelines instead of choosing a portfolio that results in greater risk to the ratepayer and shareholder.

⁵ PacifiCorp IRP Presentation, February 2, 2009 IRP presentation to parties

⁶ Wisner, Ryan, Tracking the US Wind Industry Annual Report on U.S. Wind Energy Markets: 2008, Lawrence Berkeley National Laboratory, Presentation to Wind Powering America Summit, May 8, 2009 http://www.windpoweringamerica.gov/pdfs/workshops/2009_summit/wisner.pdf

Excerpt from Table 8.1 Portfolio Capacity Additions by Resource Type, 2009-2018

Case	PVRR	Gas Scenario	CO2 Price	Cumulative Megawatt Nameplate Capacity							
				SCPC	Gas	Wind	DG	Market (10-year ave.)	Other renewables	DSM 1	DSM2
5	40,526	Low June	\$45		261	1050	95	691	35	2	901
8	41,372	Mid-June	\$45			2400	147	663	120	7	995
difference	-846		\$0		261	-1350	-52	28	-85	-5	-94

The preferred portfolio does not put the Company on a path toward meeting Utah’s renewable energy standard (Senate Bill 202, signed into law in 2008) which requires renewable energy to be developed if ‘cost-effective’ when considering risk and other factors. Portfolio 8 gets closer toward meeting the requirements of SB202 by adding over twice as much renewable energy in the form of wind energy and other renewables. Portfolio 8 is the least cost least risk portfolio.

Energy Efficiency

It should be recognized that the IRP shows a notable increase in the level of DSM during 2009-2018 timeframe as compared to the 2007 IRP. The Company invested effort in undertaking this complex modeling and analysis in this part of the IRP. While this is a good beginning, the maximum total energy savings from DSM program that is included in the selected portfolio (approximately 1,349 MW in 2018) just begins to scratch the surface of the full achievable potential available through significantly ramped up DSM programs.

Resource Diversity

Neither portfolios 5 or 8 offer a diversity of renewable resources. One notably missing resource is base-load geothermal energy. In fact, Portfolio 5 only includes 35 MW of new base-load geothermal in the next 20 years even though Utah has significant geothermal resources as noted, for example, in the Utah Renewable Energy Zones Task

Force study where at least 745 MW (and possibly up to 1,413 MW) has been identified⁷. Another question regarding geothermal resources is the cost used in the IRP analysis. In Table 6.4⁸ of the IRP, the total cost for the Blundell plant expansion is \$56.64/MWH but the cost for a greenfield plant is projected to be nearly twice as expensive at a cost of 90.97/MWH. The capital cost for greenfield geothermal resources in this IRP is \$7,608/kW; this is \$2570 higher than the company quoted in their PacifiCorp 2008 Integrated Resource Plan Public Meeting, May 22, 2008⁹ where they included a cost of \$5038/kW capital cost. This is a very significant increase in cost over the period of one year and could have been the reason that it was risk mitigating base-load geothermal, and thus was not selected in any of the top portfolios.

Furthermore, the preferred portfolio does not include any concentrated solar generation, even in the 2028 time frame.

Another solar technology that is not adequately integrated into PacifiCorp's 2008 IRP is distributed solar generation. The Standard and Guidelines (4.b.iii), dictates that resource assessments should include opportunities for customer participation. The Utah Rocky Mountain Power Solar Rebate program, which was reported in the 2008 Annual Report (included as Attachment A.)¹⁰ to have a cost of \$0.11/kWh on a levelized Utility Cost basis, should have been modeled in the IRP. The natural gas plants modeled in the IRP had total resource costs ranging from 0.088/kWh to over \$0.14/kWh. The utility cost for the rebate program is in-line with the natural gas resources that it would displace, see table 6.4 on page 103 of the IRP. The solar rebate program does not appear to have been modeled in the IRP despite a request made by parties on an IRP Parties call on March 11, 2009 and complete support for and oversubscription of the Company's current solar buy-down program.

⁷ Utah Geological Survey (2009), Utah Renewable Energy Zones Task Force, *Phase 1 Report: Renewable Energy Zone Resource Identification*, URL: http://geology.utah.gov/sep/renewable_energy/urez/pdf/mp-09-11ow.pdf

⁸ PacifiCorp, *2008 Integrated Resource Plan*, Volume I, pg 103

⁹ PacifiCorp IRP Presentation, March 22, 2008 IRP, pg 28

¹⁰ PacifiCorp, Utah Solar Incentive Annual Report, distributed to parties on May 28, 2009.

While a greater diversity of renewable energy resources come with new challenges, failure to act now on two of the greatest risks facing PacifiCorp and their customers puts Utah electricity consumers at unreasonable risk when price volatility and imminent carbon regulation are more thoroughly considered and incorporated into the selected portfolio.

In summary, it is Utah Clean Energy's position that the IRP did not select the least cost least risk portfolio and a diversity of renewable resources was not adequately analyzed. For these reasons, Utah Clean Energy respectfully recommends that the Commission *not* acknowledge PacifiCorp's 2008 Integrated Resource Plan, if it is possible to provide partial acknowledgement to provide the Company with some level of regulatory assurance for rate recovery of prudent and timely acquisition of certain needed resources, especially renewable energy resources that would be our preference. Thank you for the opportunity to provide comments.

Respectfully submitted,

UTAH CLEAN ENERGY
Sarah Wright, Executive Director
1014 2nd Avenue
Salt Lake City, UT 84103
801-363-4046
sarah@utahcleancenergy.org

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CERTIFICATE OF SERVICE

I hereby certify that on this 18th day of June 2009, a true copy of the foregoing **Comments on PacifiCorp's 2008 IRP** was transmitted via electronic mail to the following:

<p>Michael Ginsberg, Esq. Assistant Attorney General Patricia E. Schmid, Esq. Assistant Attorney General 500 Heber M. Wells Building 160 East 300 South Salt Lake City, Utah 84114 mginsberg@utah.gov pschmid@utah.gov</p>	<p>Utah Ratepayers Alliance c/o Betsy Wolf Salt Lake community Action Program 764 South 200 West Salt Lake City, Utah 84101 bplenk@igd.org</p>
<p>Gary A. Dodge Hatch James & Dodge 10 West Broadway, Suite 400 Salt Lake City, Utah 84101 gdodge@hjdllaw.com</p>	<p>Paul H. Proctor, Esq. Assistant Attorney General 500 Heber M. Wells Building 160 East 300 South Salt Lake City, Utah 84111 pproctor@utah.gov</p>
<p>Steven Michel Western Resource Advocates 2260 Baseline Road, Suite 200 Boulder, Colorado 80302 smichel@westernresource.org</p>	<p>Richard Collins Westminster College 1840 South 1300 East Salt Lake City, Utah 84105 rcollins@westminstercollege.edu</p>
<p>F. Robert Reeder Vicki Baldwin PARSONS BEHLE & LATIMER One Utah Center 201 South Main Street, Suite 1800 P.O. Box 45898 Salt Lake City, Utah 84145-0898 BobReeder@pblutah.com VBaldwin@pblutah.com</p>	<p>Sarah Wright Utah Clean Energy 917 2nd Avenue Salt Lake City, Utah 84103 sarah@utahcleanenergy.org</p>