

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

LC 42

In the Matter of
PACIFICORP’S
2007 Integrated Resource Plan

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REPLY COMMENTS
of the
NW Energy Coalition

1 ***“Climate Change: It’s real, it’s here. UN report: If action is not taken quickly, floods,***
2 ***droughts and mass extinctions will happen as soon as 2020”*** – Memo to PacifiCorp in the
3 form of a headline on the front page of the Oregonian, November 18, 2007

4 **Introduction**

5 Our initial comments detailed the many flaws in PacifiCorp’s modeling
6 methodology in the IRP. These flaws lead to conclusions that defied common sense --
7 more coal plants resulting in higher emissions and higher CO₂ adders resulting in lower
8 costs— which call into question the entire IRP. We described questionable assumptions
9 that the Company used that skewed the results. We also pointed out failures to fully
10 analyze risk and risk reduction strategies. And finally, we noted “sins of omission”
11 where PacifiCorp failed to analyze certain alternatives that could have resulted in lower
12 cost/risk portfolios.

13 The Staff’s “Initial Comments and Recommendations” reiterate most of these
14 points, and NW Energy Coalition strongly supports the Staff’s analysis and
15 recommendations.

16 Our comments here will rebut the portions of PacifiCorp’s “Response to Oregon
17 Party Comments on PacifiCorp’s 2007 Integrated Resource Plan” (“Response”). In
18 addition, we will explain in more detail our final recommendation for the Commission to
19 recommend and acknowledge the “GHG Emissions Performance Standard Portfolio”
20 (modeled on pp.213-219 of the Company’s IRP) as a superior preferred portfolio.

21 **Response to PacifiCorp’s Response to our Initial Comments**

22 1. *...the carefully designed, collaborative IRP process is not accomplishing its*
23 *intended purpose.* (Response, p. 2)

24

25 Based on the comments received from the Parties and the pace of change in the
26 industry, PacifiCorp is dissatisfied with the process, and wants to explore alternatives.

1 While we are always open to improvement, we don't blame the *process* for results with
2 which we disagree. Instead we think the Company disregarded our comments when they
3 were made in various meetings, so we had to repeat them in our formal comments. The
4 criticisms we made about the Company's modeling in our formal comments were similar
5 to those we made informally. Those include disagreements with how the Company
6 treated the CO₂ content of sales and purchases; the choice to acquire base-load resources
7 to meet Utah summer peaks; the failure to allow the model to choose more renewables or
8 sequestered coal; the inability of the methodology to model the risk benefits of
9 optionality; and the failure of the utility to model a portfolio that actually reduced
10 emissions or had no coal plants (although this latter was finally modeled with the GHG
11 Emissions Performance Standard Portfolio, but not compared in context with the others).

12 PacifiCorp's inference that we and other interveners now making critical
13 comments were somehow sandbagging the process by withholding our comments during
14 the "collaborative" process is simply untrue. The Company repeatedly ignored a host of
15 criticisms during the meetings.

16 The Company's protestation regarding the "uncertain and rapidly changing
17 planning environment..." (ibid) misses the point—and is quite telling of the failures of
18 this IRP. Instead of blaming an uncertain world for making it difficult to plan,
19 PacifiCorp needs to learn to plan in an uncertain world. In fact, that is the reason for the
20 exercise. If the world was predictable, utilities wouldn't need IRPs; they could just
21 continue doing whatever they'd been doing. The Company, in our opinion, has not come
22 to grips with the fact that the future it faces is very hard to predict. It is this shortcoming
23 which explains its inability to understand the value of optionality; its stubborn rush to
24 conventional coal—the solution that always seemed to work in the past—and its
25 willingness to choose its preferred portfolio based on very small PVRR differences that
26 in reality are completely overwhelmed by the uncertainty of the future.

27 The IRP process is not flawed; it is the attitude of PacifiCorp toward planning that
28 is the problem.

29 2. *A key misconception of the Oregon parties is the belief that PacifiCorp has*
30 *committed to building pulverized coal plants by virtue of including proxy coal*
31 *resources in the preferred portfolio. (p.3)*

32 We concur in the Staff's critique of this statement by PacifiCorp. The Company
33 notes that, "the purpose of a proxy resource is to represent the indicative characteristics

1 of an asset-type resource that *might* be procured.” (ibid) If this means that we are
2 supposed to think a baseload resource with pulverized coal’s heat rate, fuel cost, capital
3 cost, dispatchability, lifespan and CO₂ emissions content could be anything but a coal
4 plant, it challenges credulity. Put another way, if it walks like a duck and quacks like a
5 duck...it’s a duck. A CCCT or other resource will not have those characteristics. In fact,
6 the model *chose one resource over the others* precisely because of its characteristics, so it
7 cannot be replaced with a significantly different type of resource without changing the
8 very nature—including cost and risk—of the portfolio.

9 More fundamentally, if we are to assume that a resource in the preferred portfolio
10 can be substituted willy-nilly later, it calls into question the very essence of the IRP
11 process. Following that reasoning, it would be simpler to just acquire resources of any
12 kind up to the required number of megawatts, rather than go through this whole process.

13 3. *PacifiCorp does not believe that it is prudent from a risk-adjusted, least-cost*
14 *perspective to rule out new supercritical pulverized coal plants, even if these*
15 *plants are ultimately judged by the Company and its regulators to be too risky*
16 *to acquire in the short-term given the uncertainty of the future. Carbon*
17 *capture technologies, combined with sequestration, may make pulverized coal*
18 *plants a cost-effective and environmentally acceptable base load resource*
19 *option in the future. (p. 4)*

20 PacifiCorp implies with this statement that interveners have simply ruled out
21 pulverized coal plants without thinking. But the truth is that the Utility did not allow its
22 model to choose sequestered coal plants, even under high carbon adder scenarios. As for
23 unsequestered pulverized coal, the Company is correct that we have ruled them out—but
24 not without thinking. We have done so due to their tremendous risks in the face of
25 imminent carbon regulation. We are simply not going to be able to reduce emissions
26 enough over the next few decades to meet Oregon’s (and the world’s) GHG reduction
27 goals by building *more* unsequestered coal plants when it is much more likely that we
28 will be *retiring*, or retrofitting with expensive CCS technology, most of the ones that are
29 operating now. Given the miniscule PVRR difference between the Company’s preferred
30 portfolio and the GHG Emissions Performance Standard Portfolio we favor that has no
31 new coal, and the enormous asymmetrical risks inherent in building new coal plants, it is
32 not prudent to do otherwise. However, it is incorrect to imply that we have ruled out
33 sequestered coal, whether IGCC or supercritical (let the best technology win!), and in fact
34 would strongly support PacifiCorp’s participation and investment in CCS research and

1 technology development.

2 4. *The benefit of resource deferral associated with Class 2 DSM is reflected in*
3 *the results of the capacity expansion model, since more resources would have*
4 *been added has the Class 2 DSM not been included in the retail load forecast.*
5 *Risk reduction attributable to an \$8/ton CO₂ adder is also accounted for in all*
6 *of the Company's models. (p. 5)*

7 We have problems with these two statements. First, while the benefit of resource
8 deferral for the amount of Class 2 DSM PacifiCorp set in its model runs is accounted for,
9 our point was that the model was not allowed to choose *more* DSM, so the value of
10 additional DSM was not accounted for. Second, it is true that about \$8/ton CO₂ reduction
11 benefit is incorporated into the estimates of DSM cost-effectiveness (due to the fact that
12 the Council and ETO apply a 10% adder when calculating which measures are cost-
13 effective). However, under higher CO₂ adder scenario adders, the amount of cost-
14 effective DSM was not increased in the modeling. Only measures that were determined
15 to be cost-effective at \$8/ton were included. One would expect more measures to
16 become cost-effective under higher adders, but the Company did not use a cost curve for
17 DSM, and thus did not choose more and more DSM as higher CO₂ adders were modeled.

18 5. *The NWECA characterizes the lack of a modeled linkage between high CO₂*
19 *costs and price elasticity of demand effects as a substantive flaw of the IRP.*
20

21 PacifiCorp argues that price elasticity is not currently a requirement of the
22 Commission's IRP guidelines, because it would add another layer of modeling
23 complexity and analysis with no regard to the work load impact to the Company; it
24 would require new state-by-state load forecasts for each customer class; and, it would
25 need to feed back to Pacific's price forecasts.

26 NWECA understands that to do a detailed analysis would entail a lot of work; but
27 on the other hand, simply assuming zero affect from an adder as high as \$61/ton, calls
28 into question PacifiCorp's results. It would be more accurate, in our opinion, to make
29 some rough estimates for this IRP, in expectation of a more detailed analysis in the next.

30 It is only necessary to go back to the WPPSS debacle of the '70s to see how
31 and unquestioned assumption of unending exponential load growth led utilities into
32 wasteful long-term capital investments. Carbon regulation will very likely cause prices
33 to increase, reducing consumption. Just as likely will be increased amounts of
34 investment in new conservation research and technology, and distributed renewables.
35 Technology improvements and price elasticity should not be underestimated—but the
36 Company didn't estimate them at all.

1 6. *The NWECC, CUB, and RNP take issue with PacifiCorp's models regarding*
2 *the dispatch and wholesale CO₂ emissions accounting of coal plants in*
3 *PacifiCorp's portfolios. They cite the cap and-trade modeling framework as*
4 *problematic from the standpoint that "1) either the model is reducing the*
5 *electricity generated by existing coal plants in order to sell allowances into*
6 *the market; or 2) the model is selling the electricity from the coal plants into*
7 *the market under the presumption that someone else will take the burden of*
8 *those CO₂ emissions."*

9
10 *An explanation of PacifiCorp's emissions modeling framework is in order,*
11 *since both interpretations are incorrect. (p. 7)*

12 This issue was one of our main objections to Pacificorp's modeling. Staff's
13 Comments, pp.31-33, explore this issue even more thoroughly than we did and come to the
14 same conclusion: the Company's model enables the utility to make money by selling
15 surplus power into the market with no carbon repercussions. And, the higher the market
16 price, as under a high carbon adder¹, the more money it makes. This result led us to the
17 remarkable conclusion that the higher the carbon adder, and the more coal plants the utility
18 builds, the lower the PVR! As we stated, "Just imagine if all utilities came to the same
19 conclusion. We could solve global warming with business as usual!" (p. 11, Initial
20 NWECC comments)

21 PacifiCorp's explanation of why our interpretation is incorrect is contradictory.
22 First, the Company admits that its models, "do not have the capability for tracking the
23 CO₂ emissions associated with nonfirm economy imports or exports," (Response, p.7) so
24 instead applied "system emission factors to aggregated wholesale purchases and sales."
25 (p. 8) Then Pacificorp flatly states that this fact means "no 'carbon-laundering scheme'
26 is being perpetrated by the models as suggested by the parties...." (ibid) However, it the
27 lack of tracking—or more importantly, not assigning—a carbon cost to economy imports
28 and exports, of course, is what creates the carbon-laundering, ultimately leading to
29 nonsensical results. By assigning emissions to sales (Pacific's dirtier system emissions)
30 and imports (WECC's relatively cleaner system emissions), *but failing to assign price*
31 *differences even with a carbon adder of \$61/ton*, the model does exactly what we
32 criticized it for doing.

33 PacifiCorp argues "current electricity market models do not enable tracking of
34 CO₂ emissions to market transactions." (p. 9) That is why it is not prudent to rely blindly
35 on those inadequate models. As we noted in our initial comments:

¹ Footnote #4 on p. 7 of the Response notes that the model *does* factor CO₂ adder costs into the wholesale market price.

1
2 What is most troubling about this approach is that the Company has failed to
3 apply a measure of common-sense skepticism to the results. It has not questioned
4 why its modeling came up with counter-intuitive results, much less changed its
5 assumptions as those concerns became clear. (NWECC initial comments, p. 2)

6
7 *7. Given that PacifiCorp relied heavily on feedback from IRP meeting*
8 *participants to craft the CAF studies, it is puzzling as to why the NWECC did*
9 *not recommend a different set of alternative future scenarios if there was so*
10 *much dissatisfaction. (p. 9)*

11 NWECC repeatedly brought up the fact in the public meetings that PacifiCorp was
12 not modeling a single portfolio that did not extensively rely on new coal plants. There
13 were some runs without coal in the initial CAF runs, but since the *average* of those runs
14 was taken as the base case for future analyses, no coal-free portfolios were ever analyzed
15 (until the GHG Emissions Portfolio at the end, which was not compared with the others,
16 and never adequately discussed.) This is easiest to see on p. 159 and 161 of the IRP. On
17 p. 159, RA6 was supposedly designed to “Test the strategy of reducing CO2 cost
18 risks....” (RA9 was a variation of this design.) But was this really such a strategy? Not
19 at all. On p. 161, the results are shown. Not a single portfolio has less than six new
20 unsequestered coal plants, and many have seven! This represented the universe of
21 possible portfolios.²

22 **Staff’s Initial Comments and Recommendations**

23 As we noted in the introduction, NW Energy Coalition supports the Staff’s
24 comments and recommendations. We would like to add some additions comments,
25 however, regarding Front Office Transactions (FOTs).

26 On p. 7, Staff discusses the Company’s unwillingness to include a significant
27 amount of FOTs. We have often raised this issue: that mid-length purchases of 3-10
28 years provide a utility with significant optionality and thus are an important tool in
29 managing risk. PacifiCorp’s IRP, however, chooses even fewer FOTs than its previous
30 IRP. We believe this is a byproduct of how the Company fails to account for their
31 benefits, plus a management decision to limit the magnitude of FOTs the model may
32 choose.

33 The main reason that the model does not value FOTs is that the model is not

² Yes, some had IGCC rather than pulverized coal, but the model was never allowed to include sequestration, so the only real advantage of including IGCC—as a way to include sequestration—was never modeled.

1 dynamic. It does test given portfolios of resources against stochastic changes, but except
2 for modifying their dispatch, it is unable to change strategies in mid-stream. (It should be
3 noted that the Power Council’s model is able to do this.)

4 The Company also opposes more reliance on the market to avoid exposure to
5 market price risk. Staff correctly challenges this point, noting that renewable
6 development may tend to lower market prices in the WECC. To support this claim in an
7 analytical way, we would like to point out a recent study by the Power Council that
8 investigates this issue. The study entitled, “Interim Wholesale Power Price Forecast,”
9 was just released on Nov. 12th and is available on the Council’s website. The study
10 specifically looks at the effect of recently passed RPS requirements in several western
11 states. Because the RPS mandates are energy-, not capacity-, based; and because most
12 renewables expected to be developed are intermittent, the Council’s analysis shows that
13 the Western interconnect will tend to be surplus most hours of the year, for at least the
14 next 20 years. (This is because utilities build peakers (and load management) to meet
15 *capacity*, not energy, targets, to insure reliability. But they will operate these peaking
16 resources as little as possible if renewables are running.) This results in the Council’s
17 new forecast to be about 9% lower--\$35.50/MWh as compared to \$39.90 (levelized)—
18 than their previous one, even with forecast rising gas prices and capital costs.

19 PacifiCorp also raises concerns about tightening of regional capacity as another
20 reason to shy away from FOTs. But the Council’s analysis directly contradicts this idea:

21 The reserve margins are well above the capacity target of 18 percent for most of
22 the planning period. This result reflects the current surplus position in the region
23 and the addition of RPS resources over the planning period. The long-term
24 optimization logic of AURORAxmp does not add any new resources to this part
25 of the system [NW] during the planning period. (p. 16)

26 **Recommendations**

27 NW Energy Coalition supports Staff’s recommendations. The key ones being to
28 modify, or in the alternative not acknowledge, the Company’s Action Items 7, 8, 9 and
29 11. The modifications are to not acquire coal plants, and to update various analyses.

30 To support this recommendation, the Commission need only look to the late-
31 appearing, and little-discussed, GHG Emissions Performance Standard Portfolio (“GHG
32 Portfolio”) that PacifiCorp introduced at the very end of the IRP process (pp. 213-219).

33 This portfolio was the only one examined that had no new coal plants, and most
34 important, results in a reduction in CO2 emissions by 2018. Most remarkable, *the GHG*

1 *Portfolio, even given the multitude of modeling flaws we have pointed out in this*
 2 *proceeding, has the lowest PVRR of all under the \$38 and \$61 adders, and is only 0.4%*
 3 *more expensive than the Company’s preferred portfolio (RA14) when averaged over all*
 4 *carbon scenarios.*

5 The Staff found this result “compelling” (p. 27); we find it worthy of
 6 recommendation.

7 For perspective, it is worthwhile to look at another recently released Council
 8 Study: “Carbon Dioxide Footprint of the Northwest Power System,” October 30, 2007.
 9 One section is entitled, “Achieving Significant Reductions in CO₂ Production.” It
 10 explains the enormity of the task the region faces. Table 2, p. 19, shows what it would
 11 take for the region to meet its share of various targets:
 12

Policy	2020 Target (MMtCO₂)	Reduction Needed (MMtCO₂)	Equivalent Coal Capacity (MW)
WCI - 15% below actual 2005 by 2020	57	12	1560
WCI - 15% below normalized 2005 by 2020	50	18	2470
WA - 1990 by 2020 ³	44	25	3300
OR - 10% below 1990 by 2020	40	29	3840

13 **CO₂ reductions from Base Case (Fifth Power Plan) forecast needed by 2020 to**
 14 **achieve various 2020 policy targets**

15 To put the amounts into perspective, we note that substituting one 400 MW CCCT for a
 16 pulverized coal plant saves about 1.8 Million tons/year of CO₂. PacifiCorp’s proposal to
 17 add two *more* coal plants only makes the problem more daunting. In our opinion, it is
 18 not worth a 0.4% possible savings in the costs of RA14 vs. the GHG Portfolio.

19 Given these many flaws, the urgency of the need to control global warming, and
 20 the *de minimus* cost difference between a plan with no new coal and one with two new
 21 coal plants, the NW Energy Coalition urges the Commission not to acknowledge this
 22 IRP. The Company should correct the flaws noted above and rerun its analysis before
 23 seeking acknowledgment. In the alternative, we recommend that the Commission
 24 indicate it would accept the GHG Emission Performance Standard portfolio accompanied

³ Also the target of the proposed Lieberman-Warner America’s Climate Security Act.

1 by a much more robust DSM program as an acceptable outcome.

2 Respectfully submitted,

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CERTIFICATE OF SERVICE

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I certify that on the 20th day of November, 2007 I served the foregoing document (Final Comments of the NW Energy Coalition regarding PacifiCorp's IRP) upon all parties of record in this proceeding by e-mail.

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