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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of PACIFICORP for Approval of an IRP Based Avoided Cost Methodology for QF Projects Larger than 1 Megawatt	DOCKET NO. 03-035-14

PREFILED REBUTTAL TESTIMONY OF ROGER J. SWENSON

US Magnesium, LLC hereby submits the prefiled Rebuttal Testimony of Roger J. Swenson in this Docket.

DATED this 8th day of September, 2005.

/s/_____
Gary A. Dodge,
Attorney for US Magnesium LLC

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served by email this 8th day of September, 2005, to the following:

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PREFILED REBUTTAL TESTIMONY

Of

ROGER J. SWENSON

On behalf of US Magnesium, LLC

In the Matter of the Application of PACIFICORP for Approval of an IRP Based Avoided Cost Methodology for QF Projects Larger than 1 Megawatt

Docket No. 05-035-14

September 8, 2005

Background

Q. Please state your name and business address.

A. Roger J. Swenson , 1592 East 3350 South, Salt Lake City, Utah 84106.

Q. By whom are you employed and in what capacity?

A. I am an independent utility and energy consultant. I am filing this testimony on behalf of US Magnesium LLC

Q. Did you also file direct testimony?

A. Yes. I filed direct testimony on behalf of US Magnesium on July 29, 2005.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony will respond to the direct testimony filed by other parties in this case.

Q. Please summarize your rebuttal testimony and recommendations.

A. The DRR methodology supported by PacifiCorp, the DPU and CCS, while still largely untested and unverified, does appear to be somewhat less of a “black box” than I had initially feared. While it is clearly an intimidating and complicated model, with some effort one can obtain a reasonable level of detail about the resources and costs that the model suggests could be avoided through QF purchases.

The model produces essentially the same energy costs during dispatch hours for a dispatchable resource as a simpler proxy model. However, the model’s avoided cost results for hours outside of dispatch hours leave me with serious questions concerning assumptions and the untested inner workings of the

model. Testimony filed by both the DPU and CCS indicates that the model should replicate how the utility would actually operate its system once a QF resource is added as a resource, but the model is clearly not modeling system operations in that manner. For example, assumptions used as inputs to the model result in it turning down coal plants in a manner that would leave unrealized more than a billion dollars in revenues over the 20-year model run. I am confident that the CCS and the DPU would not allow this to occur in reality, and would demand that the system be operated to maximize the value of operating assets. This serious shortcoming of the model can be corrected by making the conservative assumptions that markets will exist in most off peak hours and that PacifiCorp will do what we would expect them to do in exploiting these markets to minimize costs to ratepayers.

Also, both the DPU and the CCS talk about the need to optimize resource additions after the addition of the avoided cost resource in the model. That is not currently done in the model. For example, we clearly would not be optimizing resource additions if, after a base load QF is added to the system by 2009, an additional base load plant were added to the system in 2011. This shortcoming can be simply addressed by changing the assumed resource added in 2011 to a CCCT in the model run that includes a base load QF.

I also have concerns over the impacts of assuming a zero cost alternative, including impacts on dispatch and pricing in the model. However, until a more thorough investigation and validation of the model can be completed, I cannot

recommend specific changes to the inputs or outputs to more closely reflect true avoided costs.

If the Commission elects to utilize this model to calculate avoided costs in this docket, at the very minimum it should require that the two changes described above be made. In addition, it should require the parties to continue to investigate the reasonableness of all of the other untested assumptions in the model.

Finally, I reject as unneeded and unreasonable the proposed 100 MW size limitation. I believe such a limitation will stifle what could be potentially the most important and efficient type of resource needed in our society, such as an IGCC project. Projects that may require economies of scale to become cost effective should not simply be rejected through an arbitrary cap on QF size limits.

Q. After reading the other parties' direct testimony and conducting your own work on the DRR methodology, what have you concluded?

A. I believe the Commission could reasonably adopt the DRR methodology for use in determining avoided costs in this docket, so long as it makes the critical modifications discussed in my testimony, and so long as it recognizes that there is still a lot of work to be done to validate and understand the model, including gaining an understanding of the impact of a variety of assumptions used in the model. I continue to see results from the model that are simply not reasonable and that have not been and cannot be adequately explained. It is critical that the parties continue to investigate, understand and refine model assumptions and inputs to better match how the utility will actually operate its system.

Q. How do you react to model modification proposed by CCS witness Phil Hayet?

A. Mr. Hayet's testimony indicates that PacifiCorp's approach to using the DRR model is flawed in that it uses the entire 525 MW QF resource to determine the avoided cost of even a small QF (pages 7-12). Mr. Hayet's testimony addresses one of the concerns that I raised in my direct testimony. I agree with his criticisms and accept his recommendation to address this problem.

Q. Do you have concerns with any other modifications to the model proposed in the CCS testimony?

A. I am concerned that the CCS testimony does not propose many other modifications. Mr. Hayet's testimony identifies other issues with the model that should be remedied, but does not propose specific modifications or solutions. Clearly, several adjustments are needed to make the model square with reality.

Q. Can you identify an issue identified by Mr. Hayet that requires a modification to the model?

A. Yes. Mr. Hayet's testimony (page 6) states that the DRR method requires that a second production cost be run "the way the utility would operate its system if the QF energy were available at a zero cost." However, the second DRR run does not represent how the utility would run its system. I attach Exhibit USM 1R.1, which summarizes avoided resources produced by PacifiCorp's DRR model. It shows that, on average over the 20 year period, 525 MW of coal resources will be turned down for more than 3100 hours every year. This represents an incredible amount

of value that would supposedly be wasted.

Q. What do you mean by wasted value?

A. The difference between the variable coal production cost and 93% of PacifiCorp's lowest projected market prices for off peak hours for 525 MW over the hours this resource would allegedly be turned down equals $1,192,692,000. See Exhibit USM 1R.2 That is almost 1.2 Billion dollars. I am confident that PacifiCorp would not leave this kind of value behind; nor do I believe that the CCS would let PacifiCorp waste this value. It simply does not represent how PacifiCorp would operate its system in reality. Nor has PacifiCorp provided any specific evidence that it would be required to waste ratepayer resources in this manner.

Q. How can you remedy this shortcoming?

A. This serious flaw in PacifiCorp's modeling can be addressed by eliminating the assumed market caps that restrict sales in certain hours and by adding back the value of the coal resources as was done in my direct testimony, using a conservative adjustment at 93% of the lowest market price in the West.

Q. What other issues does Mr. Hayet discuss?

A. On page 14 of his testimony, Mr. Hayet discusses the fact that the most theoretically correct way to apply the DRR methodology is to find a new optimal resource plan when the QF capacity is added to the second run. The QF plant assumed in the PacifiCorp model is a base load plant operating at a 100% capacity factor that offsets a CCCT operating at roughly a 50% capacity factor. Given that fact, it does not make sense to then assume a new base load plant in 2011. Rather,

the 2011 plant should be the CCCT that was deferred.

Q. Mr. Hayet also suggests using the IRP resource and scaling it back by the QF size (pages 14-15). Do you agree with this approach?

A. This may be a reasonable way to address this issue, but we will need to carefully look at the proposed modeling adjustments, understand the logic and test the output.

Q. How do you respond to Mr. Hayet's discussion of proposed avoided cost adjustments (pages 15-16)?

A. On the first issue, non-firm pricing, I agree that a QF should have the right to receive a non-firm priced alternative that will not include a capacity payment. What is lacking is a specific determination of the appropriate price. I recommend that the non-firm price should be based on a representative market price. On the second issue, operating reserve treatment, the absence of operating reserves is already reflected in the non-firm price that a QF receives, so it is not clear how a price adjustment should or would be applied. I cannot support an adjustment without examples of precise situations where this adjustment would be made. The third issue addressed is dispatchability. A QF project should have the option to elect day-ahead dispatchability, in which the utility can call on power and energy at the heat rate of the avoided plant. The capacity payment should reflect the capital cost of the avoided plant. The final issue, reliability, can be dealt with through contractual provisions, including make-good obligations, and do not need to be dealt with in the modeling.

Q. **Do you agree with the proposed treatment of QFs over 100 MWs?**

A. No. I do not believe that anything of value is added by imposing artificial and unnecessary barriers on the development of socially-desirable QF developments such as IGCC systems. In all likelihood the economics of these new types of systems will require economies of scale to be developed. A 100 MW barrier will simply delay or prevent the implementation of these types of projects. If certain types of projects are deemed not to be in the public's interest, the Commission can require them to bid into an RFP or decline to approve contracts that are not in the public interest. However, a blanket exclusion of any project over 100 MW would not serve the public interest.

Q. Is it likely that a proposed project that is not selected in an RFP would simply contract with the utility for energy payments only?

A. The economics of such projects are unlikely to produce an ability to obtain financing based only on energy prices. I believe an artificial barrier will simply stop development of any resources over 100 MWs.

Q. DPU witness Powell's testimony also discusses the DRR model using an optimal or least-cost plan inclusive of the alternative resource under consideration (page 4). Does he suggest any changes to achieve that result?

A. No, he does not suggest any changes. However, as described above, the model will clearly not produce a least cost resource plan if a base load QF plant is assumed but another base load plant is installed in 2011. Moreover, Mr. Powell quotes a Tellus report (page 7) that emphasizes the difference between two

"optimal" resource plans. Unfortunately, he makes no attempt to suggest changes to the model that would move toward a more optimal second resource mix.

Q. Mr. Powel lists three specific conditions that would need to be met in order to prove that a simpler proxy method will provide similar results to a DRR model. Have you attempted to satisfy his conditions?

A. Yes. In a data request, we asked PacifiCorp to run the DRR model with a QF project with exactly the same operating characteristics as the avoided resource. The model yielded a QF price that, when divided by the assumed gas price, produced the exact heat rate for the avoided resource. This demonstrates that for a dispatchable resource, a Proxy model using a heat rate times a gas price produces the same results as the DRR model. By Dr. Powell's logic, the proxy model should thus be used for calculating avoided costs for dispatachable resources.

Q. Does this make sense?

A. Yes. I do not need a computer model that takes 8 hours to run to tell me what the avoided cost will be for a dispatchable resource that has the same heat rate and gas prices of the avoided resource. If the model did not give me the exact same result as the proxy we would know that we had a serious problem with the DRR model.

Q. Does Mr. Powell provide a similar list of conditions that must be met before a DRR method should be accepted for purposes of determining avoided cost prices?

A. Unfortunately, no. If he were to do so, I would hope that his list would include verification that the model reasonably replicates the utility's actual and reasonable

conduct, that all significant assumptions and inputs have been verified for accuracy and reasonableness, and that the model should produce results that can be reasonably verified by reference to existing market conditions. The company's DRR model cannot meet any of these conditions without the modifications that I support in my testimony.

Q. How do you react to Mr. Powell's discussion about operating lease issues and imputed debt?

A. While I applaud Mr. Powell's efforts to identify some of the shortcomings of the utility's proposal and to reduce the negative impact, I continue to have a very hard time understanding why such an unclear and subjective issue should be turned into a market barrier for alternative power suppliers. Mr. Powell postulates in his testimony (pages 15-16), "that debt arising from PPAs **may affect**, directly or indirectly, the cost of capital of the purchasing utility. That is, a utility **may need** to infuse additional capital…." (emphasis added). The key is the word "may." It is neither reasonable nor fair to charge QFs or PPAs for costs that may or may not be incurred.

Q. Do you have any other thoughts on this issue?

A. Yes. To the extent debt may be imputed to PPAs or QFs, I suggest that equity should also be imputed to a QF or PPA that gives the utility security in the form of "step-in rights" under specified conditions .

Q. What is your reaction to the testimony of DPU witness Andrea Coon concerning the DRR methodology?

A. Ms. Coon recommends that the Commission adopt PacifiCorp's proposed DRR method as the permanent method for calculating avoided costs. She discusses some problems that the DPU had in running the model, but labels them as irritations rather than flaws. She states that the Division is able to examine inputs for reasonableness. She provides no clear description of any testing or validation that has been done by the Division and fails to give me any confidence that the Division can run the model independently in a manner that could challenge or verify significant inputs. I certainly hope the Division would not approve the utility running a base load resource in a manner that would waste more than a billion dollars. She acknowledges in her testimony (line 118) that Utah law calls for use of energy resources in a manner that will "provide for their most efficient and **economic** utilization." That is clearly not what is taking place in the model in terms of simulating how the utility would or should operate.

Q. Ultimately, what standard do you think the Commission should utilize in resolving the QF issues raised in this docket?

A. I believe the concept of ratepayer indifference, properly formulated, should be the governing standard. Put differently, QFs should be treated in precisely the same manner that the utility is treated -- no better, no worse. Utility investments should thus receive the same treatment as QFs. For example, QF contracts should be permitted to extend over the useful life of the resource. Alternatively, the utility should be limited to the same capital recovery period as a QF. Similarly, a QF should be paid based on actual costs rather than levelized costs. Alternatively, the

utility should be allowed to recover only levelized capital costs like a QF. That would reduce rate shock to ratepayers from new facilities and make future customers pay a fairer share of the costs. Similarly, any other restrictions or adjustments imposed on a QF -- such as transferring capital costs to the energy rate -- should be applied equally to the utility.

Q. Does this conclude your testimony?

A. Yes it does.