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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 SURREBUTTAL TESTIMONY OF ROGER J. SWENSON

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

DATED this 19th day of September.

/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 19th day of September, 2005, to the following:

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PREFILED SURREBUTTAL 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 19, 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 and rebuttal testimony?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

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

Q. After reading Division Witness Ms. Coon's testimony do you have any comments concerning her discussion of tolling arrangements?

A. Yes I do. Ms. Coon is apparently troubled by tolling arrangements because she believes PacifiCorp may pay less for gas as a result of forward purchases. She states that forward purchases will likely lead to lower prices than purchasing in the short-term market. This concern can easily be addressed through either physical or financial hedges; they can provide the exact same market exposure position that PacifiCorp has with forward purchases.

Q. Can you explain how this would be accomplished?

A. Yes. The simple solution to achieve exactly the same position for the utility would be to project forward how much gas the dispatchable plant would require

based on the heat rate implicit in the tolling arrangement over the period for which fixed prices are desired. The utility can then purchase that quantity of gas on a forward basis, just as it would have done for the avoided resource. To affect the hedge position, the utility will then sell the same quantity of gas back into the daily market. If prices have gone up above the fixed price, as Ms. Coon suggests they will, the profits from the daily gas transactions will exactly offset the increased cost from the tolling arrangement. If gas prices have declined, losses from the daily sales will net against the lower power purchases in the tolling arrangement and provide the same fixed price that Ms. Coon wants the utility to target. This same hedging strategy could be done financially with banks that have energy trading operations.

Q. Does either measure require PacifiCorp to provide gas to the QF and its industrial host?

A. No. There would be no need for PacifiCorp to purchase a physical supply of gas for the QF.

Q. Do you agree that buying forward will always lead to lower costs?

A. No. If that were the case there would be an unlimited arbitrage opportunity that would create as much profit as one desired. All one would need to do to make money is to buy forward and then sell into the market later on a short-term basis. In reality, the markets are very efficient at identif6ying and pricing arbitrage opportunities. In general what I have seen is that purchasing gas on a forward basis will usually involve a risk premium -- in effect, the purchaser pays an

insurance premium for protection against the risk that prices may go even higher than the market is projecting. Also, there may be other costs of hedging, such as margin requirements and transaction fees. If the Division wants PacifiCorp to hedge it should understand that these costs will be incurred and will be passed on to customers who receive the benefits of the insurance policy.

Q. Can you respond to Ms. Coon's discussion concerning QF pricing being tied to an electric market index during non-dispatch hours or non-firm pricing?

A. Yes. Ms. Coon's Rebuttal testimony states that she has looked at the difference in firm vs. non-firm pricing over a 5-year period and that the differential is substantially lower than the 93% used in the stipulation. Ms. Coon does not provide her data. Data available to me back to 1996 shows that the off peak differential between firm and non-firm prices is minimal; the non-firm price over that period is more than 98% of the firm price. For a dispatchable QF contract with a tolling option, most of the hours in which it will not be dispatched are in the off peak hours. The 93% figure used in the stipulation is thus very conservative and understates the actual value of off-peak energy.

Q. Ms Coon suggests that the market during off peak hour is not limitless. How do you respond?

A. Ms. Coon suggests that, because coal plants are being turned down in off-peak hours, there must be some limits on what PacifiCorp can sell into the "market." What the data actually shows is that coal plants are following load in off-peak hours. The graph reflected on my Exhibit USM-1SR.1, based on information

from the company's response to DPU data request 5.2 and a 2002 load curve from the US Magnesium interruptible docket, clearly shows that coal plants are following nighttime load.

Q. What else does the data from the response to DPU data request 5.2 show?

A. Using the data from all resources, I have run an hourly analysis of what the resources did over an entire year. I also ran an analysis of load by hour using a system 1-year hourly load profile from 2002. I grossed the load data up by 2.1% per year, as suggested in the IRP, to project loads for the period reflected in the response to DPU data request 5.2. This analysis, reflected in USM Exhibit 1SR.2, shows that, in order to balance system resources even after the coal plants have been turned down, an average of 210 MWa must be sold to the short-term spot market during the 8 off-peak hours. The coal plant turn down in those same 8 hours is 160 MWa. The short-term market sales represent 56.7% of the total amount need in plant turn down and sales in order to balance the system. The coal plants represent 43.3% of the balancing required in the off peak hours.

Q. Does this reduction in coal plant output mean that the markets are limited?

A. No, what it means is that PacifiCorp is using the turn down capability of the coal plants to balance its hourly loads and resources. That is all that can be gleaned from the information provided in response to DPU data request 5.2 and used in USM Exhibit 1SR.2.

Q. Why do think PacifiCorp uses coal plants to follow load?

A. Because it is the only other remaining means for following loads, given that the

hour-by-hour (spot) markets are thinly traded at night. PacifiCorp must combine coal plant turn-down with hour-by-hour sales in order to follow its nighttime loads.

Q. So is Ms. Coon correct that, notwithstanding current off-peak market prices above $50/MWH, access to the market at those prices is very limited?

A. No, and I believe there may be some confusion concerning the "market" for the power transactions that are represented by those prices. I have never suggested that the market for spot, real time, hour-by-hour power sales is deep; the market for that type of power is limited. The hour-by–hour, real time market is a load and resource balancing market that exists to take care of real time changes that utilities must respond to when loads or resource output conditions change. The day-ahead market, however, is much deeper; that is the market on which the referenced index prices are based. PacifiCorp's FERC Power Market reports, which were supplied in response to Spring Canyon data request 4.1, shows the depth of the day-ahead market, as reflected in USM Exhibit 1SR.3. That exhibit shows that, on average in every hour, more than 3,200 MWs of power are being sold by PacifiCorp. Similarly, on average more than 74 24-hour transactions are entered into by PacifiCorp every day.

The utility business is done primarily in the day-ahead markets. The hour-by-hour real time markets, used for balancing, are by their very nature going to be thinly traded. That is because the utilities and trading companies have done most of their business in the day-ahead markets.

Q. Can QF energy be sold on a day-ahead basis?

A. Yes. For example, US Magnesium currently notifies PacifiCorp of its intended operations on a day-ahead basis. We recognize that the utility needs to have as accurate a picture of its resources as possible so that it can do its day-ahead transactions. Any new QF, especially a 525 MW Baseload plant, should be required to tell PacifiCorp how it will be operating on a day-ahead basis and PacifiCorp will then be able to do what it needs to do to manage its sales so that coal plants will not be turned down any more than necessary for system balancing purposes.

Q. Ms. Coon responds to your suggestion regarding Commission discretion in approving contracts in the context of pricing issues. Did that testimony address pricing methodology?

A. No. I meant that the Commission has some discretion when it comes to QFs larger than 100 MWs and contract terms longer than 20 years. I recommend that the Commission explicitly state that a QF will be entitled to make a showing as to why it may be in the public's interest for a larger QF to be handled under the normal QF process or for a term of more than 20 years. I was not suggesting that I wanted the ability to change the approved pricing methodology on a contract by contract basis.

Q. Mr. Hayet states that to use CCCT operating costs and market indexes in non-dispatch hours will overstate avoided costs. Do you agree with this statement?

A. No, I do not. In fact, as long as the CCCT costs are allocated to the same dispatch hours and the percentage of PV pricing is correct, both models will give the exact same results. Where Mr. Hayet and I disagree is as to the thousands of hours under GRID that QF pricing would be based on a coal resource at $10/MWH to $12/MWH. I could make the proxy model produce the same results simply by using such a low percentage of the PV index that it gives the same coal displacement price. As I discussed above, however, PacifiCorp can use day-ahead trading to avoid turning down coal plants more than it already does to balance system loads and resources.

Q. Mr. Hayet accepts the alternative capacity payment stream proposed by UAE's witness Townsend. Do you have any comments on his testimony?

A. I certainly agree that, using a 7.2% discount factor, we get the same NPV of the proposed payment stream under either approach for a contract that starts in 2006. However, an adjustment to Mr. Townsend's proposed capacity payments must be made for any contract that begins in 2007 or 2008. For a contract that begins in 2009 or beyond, the payments must be adjusted back to the original capacity payment stream.

Q. Mr. Hayet discusses contract length restrictions and states that QF developers have been able to get financing for 20-year contracts. Do you agree?

A. I agree that there are projects with 20 year contracts that have been able to obtain financing at terms that have enabled the projects to go forward. My concern is

that the next generation of QF plants may be very capital intensive and will require longer amortization periods to obtain financing. I agree that we should leave the standard at 20 years but give projects the ability to make a showing that longer-term contracts are needed to obtain financing.

Q. Mr. Duval of PacifiCorp provides the results of a model with modifications that give a Levelized QF rate of $50.83 at an 85% capacity factor. Can you comment on this model and the changes?

A. No. I have not been able to review the details of the output of the model in order to ascertain the specific effects of his changes on resource operating characteristics. Until I receive and analyze that output, I cannot say whether the results are reasonable. I would like to reserve the right to add additional testimony during the live hearing process concerning his proposed changes to the model

Q. Mr. Duval states that the parties do not understand the realities of utility operation. Do you agree with his statement?

A. To a certain extent, yes. I have worked for utilities and I have worked for entities that are not utilities and I believe that I have a good understanding of the altered state of reality in which utilities operate. I also have a very good understanding of the realities of businesses that do not have monopoly rights and regulatory protections. If I were to say to a client in the non-utility reality that we should turn off a $10 per unit production process when consumers are willing to paying more than $40/unit, I would be shown the door. What I would be expected to do is to

find a way to maximize the value of the production process, not find excuses as to why it may be difficult to capture the available price margin.

Q. Mr. Duval states that coal plants are backed down an average of 156 MW from his review of January 2005 through July 2005. Do you agree with that analysis?

A. Yes, my anaylis of the data provided in response to DPU data request 5.2 produces an average turn down from peak of roughly 160 MWs.

Q. Mr. Duval also states that coal plant back-down with a QF resource is no longer an issue because they are no longer using a 100% capacity factor QF. Do you agree?

A. No. First, I have not been able to obtain or analyze the model results in order to look at the specific incremental hours of coal plant back down. Second, I do not believe that, given the remaining model assumptions, either a 100% capacity factor or an 85% capacity factor will eliminate the modeling problem of coal turn down in the nighttime hours.

Q. Mr. Duval discussed the utility "reality" of market caps during low load hours. What is your reaction to his statements concerning market caps?

A. As I discussed above, market liquidity is reduced in real time, hour-by-hour spot markets because utilities do their business on a day-ahead basis. It is my contention that the day-ahead market is where QF power should (and, in fact, would) be sold. The balancing market should continue to be used for relatively minor variations in loads and resources. As discussed above, I believe Mr. Duval

is making a mistake in suggesting that the thinly traded hourly spot market will cause coal plants to be turned down as a result of QF purchases. But, as he says, this may be in his world of utility "reality." I simply do not accept this "reality."

Q. Mr. Duval states that if the market caps are removed from both runs the avoided cost would only reflect the difference in market activity between the base case and the QF run. Do you agree?

A. Yes, and I believe that the market caps should be removed from both cases.

Q. Mr. Duval states that it would be reasonable to assume that non-firm transmission could be utilized only if there were assurances that it will always be available. Does this statement make sense to you?

A. No. What I believe would make sense is for the utility to share its understanding of the percentage of time when non-firm capacity has historically been available and will likely be available and then make reasonable quantitative judgments about the use of non-firm capacity into the future. However, it appears we are again dealing with his utility "reality" in which minimizing cost, maximizing use of resources and accurately identifying likely avoided costs apparently do not matter.

Q. Mr. Duval states that any impacts of changing the transmission limitations would be minor since it would impact both the base case and the QF case. Do you agree?

A. No. If it is such a minor issue, then PacifiCorp should make the change and make the necessary assumptions to allow the QF resources to make day-ahead market

sales rather than turning down coal plants.

Q. Can you comment on Mr. Duval's statement that his adjustments reduce coal displacement hours for the period after 2009 through 2025 from 13% of the cost to 12% of the cost?

A. I appreciate that his adjustments cause some reductions in the number of turn-down hours but, until I can analyze the output of the model, I cannot tell how reasonable this change has made the coal displacement issue.

Q. Mr. Griswold of PacifiCorp states that QF contracts have operated to the detriment of ratepayers Do you agree?

A. Absolutely not. These contracts were priced on a basis that allows PacifiCorp to turn directly around and sell the QF power into the market and be kept whole. The intention of the stipulation was to identify a transparent pricing mechanism that would give the utility that ability. PacifiCorp itself came up with the pricing basis of 93% of Palo Verde and defended it to the DPU and this Commission as reasonable and in the public interest.

Q. Does the DRR method provide an appropriate mechanism for pricing non-firm contracts?

A. Not compared to a transparent, market based method that tracks the real value of the power. As Mr. Duval states in his testimony, a QF should be paid a price based on the value of the capacity and energy that it provides.

Q. Is the approach using a market index to reflect the value of non-firm power flawed?

A. No. The flawed approach is PacifiCorp's assumption that coal plants will be turned down if a high load factor QF is operating. What will really happen is that, after the QF sends its day-ahead schedule to PacifiCorp and is included in the mix of resources, its value will be maximized by either selling it on a day-ahead basis, using it to reduce day-ahead purchases or using it to reduce operations of a higher cost resource.

Q. Can you respond to the PacifiCorp testimony of Mahendra B. Shaw?

A. Yes. Ms. Shaw states that no parties have provided evidence that a long term power purchase agreement classified as a capital lease is not a liability to the utility. Ms. Shaw's own rebuttal testimony (page1, line 14) clearly states my position on this matter, that this virtual debt "can" result in customers paying more; she herself is careful not to say "will." It is my testimony that we should not penalize QFs because of costs that may or may not occur.

Q. Do you agree with her statement that "It is in everyone's interest for the rating agencies to apply a lower risk factor to PacifiCorp"?

A. I do and I go further. I believe that this entire business of trying to impute virtual debt is not in the public's interest as it adds economic inefficiencies into the market. If any and all power purchase arrangements have these same types of costs applied there is a substantial, although still non-quantified, cost to all of society. While I applaud the efforts described in her rebuttal testimony to minimize these costs, I believe we should go further and establish virtual equity for PPAs that are backed with power plants to offset the virtual debt.

Q. Does this conclude your testimony?

A. Yes it does.