

Stephen F. Mecham  
Callister Nebeker & McCullough  
Gateway Tower East Suite 900  
10 East South Temple  
Salt Lake City, Utah 84133  
Telephone: 801 530-7300  
Facsimile: 801 364-9127  
Email: sfmecham@cnmlaw.com  
Attorneys for Desert Power LP

---

**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

---

IN THE MATTER OF THE PETITION OF  
DESERT POWER LP FOR APPROVAL OF  
A CONTRACT FOR THE SALE OF  
CAPACITY AND ENERGY FROM ITS  
PROPOSED QF FACILITIES

Docket No. 04-035-

---

**PREFILED DIRECT TESTIMONY OF ROGER J. SWENSON**

---

Desert Power LP hereby submits the Prefiled Direct Testimony of Roger J. Swenson in this  
Docket.

Submitted this 23<sup>rd</sup> day of January 2004.

PREFILED DIRECT TESTIMONY

Of

ROGER J. SWENSON

On behalf of Desert Power LP

---

IN THE MATTER OF THE PETITION OF DESERT POWER LP FOR APPROVAL OF A  
CONTRACT FOR THE SALE OF CAPACITY AND ENERGY FROM ITS PROPOSED QF  
FACILITIES

Docket No. 04-035-

---

January 23, 2004

**Background**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

**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 a principal in the firm E-Quant Consulting, LLC. E-Quant Consulting, LLC is a private consulting firm specializing in energy matters.

**Q. Please summarize your educational and professional experience.**

A. I have a BS degree in Physics and a MS degree in Industrial Engineering from the University of Utah. I have worked in the energy industry for over 20 years. Prior to working as a consultant I was the Vice President of Energy Marketing for an oil and gas production company that was affiliated with a cogeneration development company. Prior to that I worked for Questar Corporation in various positions including some time spent on rate making matters.

**Q. On whose behalf are you testifying in this proceeding?**

A. My testimony is sponsored by Desert Power LP (“Desert Power”).

**Q. What is the purpose of your testimony?**

A. My testimony will provide the basis for the pricing terms and conditions for the Qualifying Facility (“QF”) contract submitted for approval in this proceeding.

**Q. Has the State of Utah taken a position on QF development?**

A. Yes. Utah Code Section 54-12-1-2, which requires utilities to purchase QF power and energy under reasonable rates, terms and conditions, is expressly intended to “promote the more rapid development of new sources of electrical energy,” to “maintain the economic vitality of the State,” and to “promote the efficient

1 utilization and distribution of energy.” Utah Code Section 54-12-2-2 specifically  
2 discusses the power sales price for independent energy producers. It calls out the  
3 concept of using the purchasing Utilities avoided cost including the capacity  
4 component reflecting the “deferral or cancellation of generating units”.

5 **Q. Has the Commission adopted any processes to facilitate QF development?**

6 A. Yes. Years ago, the Commission approved Schedule 37, which sets rates and  
7 terms for the purchase of QF power and energy from small QF projects. Recently,  
8 the Commission approved Schedule 38, which was intended to create a process by  
9 which larger QF projects could obtain “indicative pricing” in order to determine  
10 economic feasibility.

11 **Q. How has the Schedule 38 process worked so far?**

12 A. Unfortunately, not well. The Commission directed PacifiCorp on February 24,  
13 2003, in Docket 02-035-T11, to file a methodology to develop avoided costs  
14 within ninety days. On September 24, 2003, in Docket 03-035-14, the  
15 Commission ordered PacifiCorp to file a revised avoided cost methodology within  
16 sixty days. To date, PacifiCorp has failed to make a filing with an appropriate or  
17 workable avoided cost methodology or to provide any specific answers as to how  
18 it proposes to calculate capacity payments. Also, while the QF working group has  
19 met three times since October to discuss capacity payments, no basis for  
20 determining capacity payments has been forthcoming from Pacificorp. The  
21 working group repeatedly asked for the specific basis for capacity payments that  
22 were shown in examples that Pacificorp provided and no basis or derivation has  
23 been provided to date. PacifiCorp’s failure to provide workable calculations and

1 needed data has caused the Schedule 38 process to fail to produce its the intended  
2 results.

3 Desert Power joined with US Magnesium LLC followed all of the Schedule 38  
4 procedures to obtain avoided cost pricing, but neither has received a pricing  
5 proposal that makes sense or a proposed contract. We provided all of the  
6 information specified in Schedule 38 or requested by PacifiCorp many months  
7 ago. While we have received some proposed prices, we have raised serious  
8 questions with PacifiCorp, about the proposed avoided costs and how they were  
9 determined which questions remain unanswered. We learned in May 2003 that  
10 PacifiCorp's proposed prices do not include a capacity component. On July 15,  
11 2003, a request was submitted by US Magnesium that also encompassed Desert  
12 Power's generation. This request was made pursuant to Schedule 38, section  
13 I.B.4., for a proposed contract, a copy of which is attached as Exhibit DP 1.2, and  
14 provided the updated information required by the tariff. Schedule 38 requires  
15 PacifiCorp to provide a draft power purchase agreement within 30 days of  
16 receiving all required information, and US Magnesium in conjunction with Desert  
17 Power specifically requested that contract negotiations be finalized by August 31,  
18 2003. No draft contract has been provided by PacifiCorp, even to date, and no  
19 good faith negotiations have commenced.

20 **Q. Why did Desert Power and US Magnesium LLC file their request together as**  
21 **one Project?**

22 A. PacifiCorp stated to the QF working group that in order to receive a capacity  
23 payment a project would need to be greater than 100 MW. We wanted to make

1           sure that we understood the value of capacity given the PacifiCorp 100 MW  
2           constraint, so we combined the potential projects to be well in excess of the  
3           PacifiCorp 100 MW barrier.

4   **Q.   Why now are the two projects filing separately?**

5   A.   Each facility wanted to be responsible on a contractual basis for its own operation  
6           and security. In addition, each facility has its own generation characteristics that  
7           are best addressed individually, a result that is particularly appropriate given  
8           PacifiCorp's illogical pricing approach.

9   **Q.   Why has Desert Power filed its Petition in this Docket?**

10   After spending over a year trying to obtain the information it needs to proceed  
11           with facility upgrades and in order to meet the pending critical need for power in  
12           2005, time has simply run out. Desert Power cannot begin the process of  
13           obtaining financing for its upgrades without a QF contract with reasonable pricing  
14           in place. PacifiCorp has stated in its Currant Creek filing that there is an  
15           impending power crisis by July 1, 2005. Desert Power can have its facilities in  
16           place by that date if approval of a reasonable QF contract is forthcoming by this  
17           spring. Desert Power simply seeks through engaging this forum to be a part of the  
18           solution, as contemplated by PURPA.

19   **Q.   Has Desert Power submitted a proposed contract?**

20   A.   Yes, it has, attached as Exhibit DP 1.1.

21   **Q.   What is the source of that proposed contract?**

22   A.   The proposed contract was derived from the draft generic contract approved by  
23           the Commission on August 26, 2003 in Docket 03-035-15.

1           **Q. To further the State’s objective of facilitating QF projects, how should**  
2           **the process work for determining avoided cost rates for larger QF projects?**

3           A. The process should be clear, transparent and replicable and should provide  
4           reasonable results. It should provide a potential developer with correct economic  
5           signals. The process should lead to similar rates and results whether a resource is  
6           built by the utility or by a QF developer. Ratepayers should be indifferent with  
7           respect to cost/price because rates should be set at the utility’s avoided costs.

8           **Q. What kind of economic signals would you expect to see from avoided cost**  
9           **calculations at this time?**

10          A. PacifiCorp has announced a need for more than 4,000 MW of new resources over  
11          the next decade, with system growth projected primarily on the eastern side,  
12          particularly Utah. PacifiCorp also claims significant transmission limitations into  
13          the fast growing Wasatch Front “bubble.” Given those projections, I would  
14          expect to see dramatic avoided cost price signals that would strongly encourage  
15          the development of new resources within that bubble. Indeed, this Commission  
16          has found that PacifiCorp is and remains deficient in the summer peak. Instead,  
17          the price signals we have received from PacifiCorp have been stifling to the  
18          development of QF projects and wholly uneconomic for peaking projects. Desert  
19          Power can fill part of the new generation resources requirements only if the  
20          economics are sufficient to support the investment to upgrade the Desert Power  
21          system. To date, the only indicative pricing Desert Power has received is so low  
22          that no peaking generation would be built at such rates, including by PacifiCorp.

23          **Q. What has been your experience with PacifiCorp’s IRP-based approach for**

1           **estimating avoided costs?**

2    A.    The results, developed from “black box” models to which only PacifiCorp has  
3           access, are unclear, inconsistent, unreasonable and uneconomic.

4    **Q.    Can you provide specific examples?**

5    A.    Yes. One example is illustrated in Exhibit DP 1.3, which shows the “black box”  
6           energy values provided by PacifiCorp on November 17, 2003, for a 100 MW plant  
7           with a 90% operating factor. Exhibit DP 1.4 shows the energy values provided by  
8           PacifiCorp for a 150 MW resource that would have a 50 MW baseload unit along  
9           with a 100 MW dispatchable unit for comparison. The results show the  
10          unexpected and illogical result that the resource with 100 MW of dispatchable  
11          capacity provides significantly less per-unit value on an energy basis. The 50 MW  
12          baseload resource should logically be of less value per unit than the dispatchable  
13          resource but the cost would need to be extraordinarily low to bring the combined  
14          cost down to such an extent. Pacificorp has suggested that the low value received  
15          is somehow tied to the combination of the baseload unit in combination with the  
16          dispatchable unit. We would like to see the specific separate cost basis that would  
17          give this result. Another example from the latest indicative price provided by  
18          Pacificorp is the capacity rate to Desert Power for a dispatchable QF unit. The  
19          capacity allowance for both investment and fixed operations and maintenance for  
20          2005 is \$33.00 per kw year. That should be compared to those costs being  
21          incurred at PacifiCorp's West Valley peaker, which far exceeds \$80 per kw year.  
22          Similarly, variable costs quoted were \$24.63 per Mwh. With today's \$5/Dth gas,  
23          that number does not cover the gas cost of any peaker installed today. By

1 comparison, with \$5/Dth gas, the gas costs per Mwh of operating PacifiCorp's  
2 peaker at West Valley is in excess of \$50 per Mwh.

3 **Q. What other questions come up with using the IRP methodology to determine**  
4 **the avoided costs?**

5 A. The methodology that Pacificorp uses where they run the IRP model with the QF  
6 resource as a zero cost resource. When you have a dispatchable resource and run  
7 it in the model as a zero cost resource it will be dispatched every hour  
8 automatically. The QF value will be dependent on how many hours are assumed  
9 to operate. We have no idea of what assumptions Pacificorp placed on the model  
10 to derive the output value.

11 **Q. Is there a better approach for determining avoided costs?**

12 A. Yes. Determining avoided costs with reference to the “Next Deferrable Plant”  
13 (“NDP”) produces much better results. The IRP model was designed to provide  
14 guidance on the value of different resource development options under a variety of  
15 uncertain future conditions. We should not expect such a model to provide  
16 explicit avoided cost values. At best, the IRP model will provide “guesstimated”  
17 values based on the price forecasts that were input to the model. Market prices  
18 experience tremendous volatility, with actual prices sometimes varying from  
19 forecasts by 50% or more within even one year. The IRP model can properly be  
20 used to help determine the next specific plant or contractual resource that can  
21 potentially be deferred. Actual costs associated with that deferrable resource  
22 should then be used to set avoided costs.

23 **Q. Does this NDP approach follow the specifics laid out in the Utah Code in**

1 **section 54-12-2?**

2 A. Yes, the code states that avoided costs should reflect the capacity component of  
3 avoided costs, which shall reflect the purchasing utility's long term deferral or  
4 cancellation of generating units which may result from the purchase of power  
5 from the independent energy producer. When the capacity payment is set based  
6 on a specific resource, then the energy payments should reflect the value that the  
7 resource brings to the utility's purchasing options, specifically a set variable cost  
8 based on the operating cost of the proxy unit. This approach moves away from  
9 guessing at future prices to set avoided cost rates.

10 **Q. Have you utilized the NDP approach in the contract submitted with Desert  
11 Power's Petition in this docket?**

12 A. Yes.

13 **Q. What is the NDP you have utilized?**

14 A. PacifiCorp's peaker plant at West Valley.

15 **Q. Why did you use that Plant?**

16 A. Because it is a stand-alone peaking facility that is fully dispatchable. In that  
17 respect, it most closely resembles Desert Power's plant. I also chose that resource  
18 since the lease has a termination provision that will allow it to be dropped as a  
19 resource in 2006, therefore it is deferrable. Also, we have clear and determinable  
20 variable and fixed operation and maintenance factors for that resource that can be  
21 based on actual verifiable cost from a historic period, as well as a specific capacity  
22 payment that can be directly derived from the lease payment.

23 **Q. Would you explain this NDP approach as applied to pricing in the proposed**

1           **contract.**

2    A.    Under the submitted contract, PacifiCorp will pay Desert Power monthly for  
3           deliveries from the facility at a price that includes a fixed capacity payment  
4           derived from PacifiCorp's current lease agreement for the West Valley units, and  
5           fixed and variable operation and maintenance costs derived from PacifiCorp's  
6           actual operating costs for those units. The purchase price paid by PacifiCorp  
7           during the first year will be based upon the fixed and variable costs actually  
8           incurred by PacifiCorp in connection with the West Valley units for the twelve  
9           month period ending December 31, 2003, the actual heat rate of the West Valley  
10          units, actual fuel costs as they are incurred in the future, and PacifiCorp's ability  
11          to schedule the Desert Power facility as though it were a West Valley Unit. After  
12          the first year, the fixed and variable components will be adjusted based upon  
13          inflation. For capacity and energy provided by the QF facility when PacifiCorp  
14          does not schedule it, the price will be based upon the lower of the West Valley-  
15          based costs or firm or non-firm market prices, depending upon PacifiCorp's then-  
16          current resource position. The specific costs, pricing factors and formulae used to  
17          calculate the monthly purchase price are detailed in Exhibit D to the contract.

18   **Q.    Please explain how the NDP approach is used to determine avoided costs.**

19    A.    By identifying the NDP, a specific type of deferrable resource can be used to  
20          calculate operational costs that can potentially be avoided. The NDP resource will  
21          have a variable operating cost profile that can be used to directly determine  
22          avoided costs, based on fuel consumption and operating and maintenance costs.  
23          The NDP resource will also have a specific capital cost component, based on

1 actual costs derived from contracts, estimated costs from the IRP process, or other  
2 relevant sources. This is the approach used in setting the rates specified in the QF  
3 contract submitted by Desert Power.

4 **Q. How should avoided cost payments be structured?**

5 A. Capacity payments should be based on avoided revenue requirement impacts from  
6 the specific NDP resource, using the existing approved capital structure and  
7 capital costs of the utility and the established tax rate. The energy payment should  
8 be based directly on the known fuel consumption of the NDP resource times the  
9 “actual” fuel price at the time of delivery, plus a fixed and variable O&M factor.  
10 Losses that are avoided should also be included in the calculation of avoided  
11 costs. The utility should then dispatch the QF resource in its planning just as  
12 though it “owned” the resource with the contractually specified heat rate and  
13 operating costs. This approach will give the utility a resource with set variable  
14 operating costs that will justify the capacity payment to be made.

15 **Q. Is this the way Schedule 37 avoided costs were calculated?**

16 A. No. However, the NDP approach is superior and less risky to the utility and its  
17 ratepayers. Moreover, it is much more flexible. It will naturally track identifiable  
18 needs as the NDP changes based on changing load and resource requirements.  
19 The IRP model will provide the NDP as it is updated over time. The QF contract  
20 will be based on the specific NDP at the time of the contract. As future resource  
21 requirements change, the NDP used to calculate avoided cost payments for a  
22 newly proposed QF plant will be those applying at the time the new facility is  
23 proposed necessary reflecting the new circumstances. This approach will not

1 require price forecasting or the attendant risks of locking in prices for future  
2 facilities that may prove to be extraordinarily high, particularly if locked in during  
3 periods of peak gas pricing forecasts. Instead, the NDP approach looks to the  
4 specific costs of the NDP that was avoided, just as if the utility had the NDP plant  
5 in its resource mix.

6 **Q. You propose that QF prices should be based on the NDP's heat rate and**  
7 **dispatched as such. What if a QF elects to operate for more hours than the**  
8 **economics of the resource would suggest?**

9 A. If the QF plant desires to operate beyond the hours that would be economic given  
10 the utility resource stack or the utility does not have a specific need for the plant to  
11 operate for system requirements (the dispatch hours), then the plant should receive  
12 a market-based price. That price will be lower than the variable operating costs  
13 being paid by the utility, based on the operating characteristics of the NDP. The  
14 market price should be based on transparent published market prices, shaped  
15 hourly as is done in the PacifiCorp IRP. In that manner, PacifiCorp's ratepayers  
16 never overpay when PacifiCorp otherwise would not dispatch the plant and the  
17 QF owner has certainty of the economic environment in which it operates.

18 **Q. Are you aware of any concerns with the use of market prices in avoided cost**  
19 **calculations?**

20 A. Yes. The QF working group has had discussions concerning capacity payments  
21 embedded in market prices. Some participants have suggested that a "double"  
22 capacity payment will somehow accrue to a QF if it receives firm market prices  
23 during some operating hours. While I understand the argument, I am not

1 personally persuaded by it. Nevertheless, there is a relatively easy way to avoid  
2 this potential “double” capacity payment. Theoretically, hourly market prices are  
3 set by the variable operating cost of the last unit dispatched to satisfy market  
4 demand in an area. As demand rises, units with higher variable operating costs  
5 are drawn into the market. Units with lower variable costs of operation than the  
6 last dispatched unit will recover some margin, depending on specific variable  
7 operating costs of the unit compared to the market price. Some people might  
8 consider that margin or difference to be a type of capacity payment, since it is a  
9 value received above variable costs. Under this view, the **market** effectively pays  
10 the capacity costs associated with meeting its needs.

11 **Q. Would paying market prices to a QF for energy delivered during non-**  
12 **dispatch hours increase costs to ratepayers?**

13 A. No, as long as the price paid to the QF avoids a PacifiCorp market purchase or  
14 PacifiCorp is a net seller in the market at the time. Under either such  
15 circumstance, the price at which PacifiCorp is avoiding buying or is actually  
16 selling additional power is the same as the price being paid to the QF. Ratepayers  
17 under those conditions will be kept whole. The only time that the “double”  
18 capacity payment concern might arise is when the utility is a net seller into the  
19 market, based on its resource position. One means to address this concern would  
20 be the use of a non-firm index price for avoided costs when the QF is operating  
21 during non-dispatch hours and the utility is a net seller. The difference between  
22 firm and non-firm pricing arguably accounts for capacity value within market  
23 prices. For the five year period ending December 31, 2002, using the Dow Jones

1 published index prices, the difference between firm and non-firm prices amounted  
2 to approximately \$7.00/MWH. Under this approach, actual non-firm index  
3 pricing shaped by specific hourly pricing factors should be used and the specific  
4 hours that PacifiCorp is a net buyer and seller in the market should be tracked and  
5 verified by audit.

6 **Q. So if costs track what ratepayers avoid, does this capacity question even**  
7 **matter?**

8 A. Only if you want to create a barrier to eliminate QF development. The law is clear  
9 in that prices should be based on costs that are avoided. That should be the  
10 measure of the effectiveness of a QF rate. Does it track cost that actually will be  
11 avoided. The NDP approach does this better than using future guesses at market  
12 costs with the IRP model approach.

13 **Q. Can you summarize your position concerning the process for developing**  
14 **avoided cost rates and the pricing terms you have included in the proposed**  
15 **Desert Power agreement?**

16 A. The methodology being pursued by PacifiCorp to determine avoided cost rates has  
17 proven to be unworkable and unverifiable. The results are illogical and no one  
18 outside PacifiCorp can run the model, confirm the inputs or verify the results,  
19 since PacifiCorp alone controls the “Black Box.” Moreover, PacifiCorp has not  
20 even proposed a workable method for calculating capacity payments. I strongly  
21 recommend that the Commission use the Next Deferrable Plant as a proxy for  
22 capital costs and variable operating costs for setting avoided cost rates. If  
23 PacifiCorp is a net seller in a given hour when the QF is operating even though

1 PacifiCorp has not dispatched it the QF should be paid at non-firm market prices.

2 If PacifiCorp is a net buyer in a non-dispatch hour, the QF should receive the  
3 lower of firm market cost or the variable operating cost of the NDP. The QF  
4 should be paid a capacity payment equal to the actual revenue requirement costs  
5 that ratepayers will avoid, based on the capital cost of the NDP. Under this  
6 approach, PacifiCorp and its ratepayers will be protected against erroneous market  
7 projections and QFs will receive reasonable and verifiable avoided cost payments.  
8 This approach follows the specific intent of the statutes that call out avoided costs.

9 **Q. Is the proposed Desert Power contract in the public interest?**

10 A. Yes. The NDP approach used by Desert Power in submitting its proposed  
11 contract will encourage and facilitate the use and redeployment of facilities in an  
12 efficient manner and help alleviate projected capacity shortfalls in the Salt Lake  
13 Valley. Desert Power will receive prices based on costs actually avoided by its  
14 resource instead of prices that are based on guesses of future values. Desert  
15 Power will receive the pricing certainty in the form of capacity payments that it  
16 needs to pursue necessary upgrades to its facilities, enhancing its ability to remain  
17 a significant contributor to the Utah economy.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing testimony of Roger J. Swenson was mailed, postage prepaid, this 23<sup>rd</sup> day of January 2004, to the following:

Edward Hunter  
John Eriksson  
STOEL RIVES  
201 South Main Street, Suite 1100  
Salt Lake City, UT 84111

Michael Ginsberg  
Patricia Schmid  
ASSISTANT ATTORNEYS GENERAL  
Division of Public Utilities  
Heber M. Wells Building, 5<sup>th</sup> Floor  
160 East 300 South  
Salt Lake City, UT 84111

Reed Warnick  
ASSISTANT ATTORNEY GENERAL  
Committee of Consumer Services  
160 East 300 South, 5<sup>th</sup> Floor  
Salt Lake City, UT 84111

---

Stephen F. Mecham