

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH**

IN THE MATTER OF THE APPLICATION OF PACIFICORP FOR AN INCREASE IN ITS RATES AND CHARGES))))))	<u>DOCKET NO. 01-035-01</u>
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**DIRECT TESTIMONY OF DAVID NICHOLS
ON BEHALF OF THE UTAH ENERGY OFFICE
UTAH DEPARTMENT OF NATURAL RESOURCES**

1 **Q. Please state your name, position, and address.**

2 A. I am David Nichols, vice president and senior researcher at Tellus Institute, 11 Arlington
3 Street, Boston, Massachusetts 02116. My qualifications were summarized in my prepared
4 testimony in the revenue requirements phase of the present proceeding

5 **Q. On whose behalf are you testifying?**

6 A. I am testifying on behalf of the Utah Energy Office (formerly Office of Energy and Re-
7 source Planning) (UEO) in the Department of Natural Resources of the State of Utah.

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

9 A. In my testimony in the revenue requirements phase of the proceeding, I identified what I
10 see as the implications of the demand-side management study recently completed for the
11 Energy Efficiency Advisory Group to the Utah Public Service Commission. Specifically, I
12 proposed new DSM which PacifiCorp should undertake as part of this proceeding. In the

1 present testimony, I address the cost recovery implications of the conclusions presented in
2 that earlier testimony, and of the recommendations in the testimony of Jeff Burks, Director,
3 UEO.

4 **Q. Please identify the study to which you refer.**

5 A. I refer to *An Economic Analysis of Achievable New Demand-Side Management Opportuni-*
6 *ties in Utah*, prepared by Tellus Institute for the Energy Efficiency Advisory Group.

7 **Q. Please outline your testimony.**

8 A. The balance of my testimony addresses these topics: the major regulatory approaches to
9 cost recovery for DSM; cost recovery from ratepayers-as-a-whole versus separate recovery
10 from residential and non-residential ratepayers; the special issue of self-directed DSM
11 funding on the part of the very largest energy using facilities; a demand-side cost recovery
12 charge consistent with the program described in my prior testimony; and how to identify
13 power market savings from new DSM undertaken by PacifiCorp and flow a portion of
14 them to the ratepayers as a credit against DSM costs.

15 **Approaches to DSM Cost Recovery**

16 **Q. Are specific mechanisms used to facilitate utility recovery of DSM costs?**

17 A. Yes. In almost all jurisdictions where utilities have been explicitly authorized by regulators
18 to pursue DSM, cost recovery mechanisms unique to DSM have been employed. The de-
19 sign of these mechanisms has varied, but most of them are structured to allow the utility to
20 recover from ratepayers the actual amount spent on approved DSM programs.

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1 **Q. Why are special cost recovery mechanisms needed for DSM?**

2 A. Utilities usually treat DSM expenditures as operating expenses. Once rates are set, every
3 reduction in operating expenses is a contribution to the utility's bottom line. This is an in-
4 centive for operating efficiency. In the special case of DSM, however, one wants the utility
5 to expend the agreed monies, for only if the monies are spent will efficiency gains be real-
6 ized. A DSM cost recovery mechanism removes the utility's incentive to spend as little as
7 possible on DSM, because with such a mechanism unspent monies are returned to the rate-
8 payers.

9 **Q. What major approaches have regulators approved for recovery of a utility's costs for**
10 **approved DSM programs?**

11 A. During the history of DSM regulation in U.S. states and Canadian provinces over the past
12 two decades, three major approaches have been used: some kind of balancing account
13 providing for dollar-for-dollar recovery of approved costs; deferred accounting whereby
14 approved costs are accumulated, usually earning a return, from one base rate case to another;
15 and rate base like treatment, wherein DSM expenditures are amortized with a return.
16 Sometimes elements of these approaches are combined. Over time, the use of deferred ac-
17 counting and rate basing has declined, while the use of balancing accounts, usually in the
18 form of DSM cost recovery riders, has grown.

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1 **DSM Cost Allocation**

2 **Q. How might recoverable utility DSM costs be allocated among ratepayers?**

3 A. Theoretically, one might allocate utility DSM costs in a manner similar to the costs of the
4 supply-side resources displaced by DSM. In this approach, one would allocate DSM costs
5 based on their relative contribution to avoided capacity, energy, transmission, distribution,
6 or other investments, in the same manner as supply-side costs in each category are allocat-
7 ed. There would be variations to this approach depending on the ratemaking practices in
8 each jurisdiction. The allocated DSM costs would then be reflected in rates or in a DSM
9 cost recovery rider. Though this approach is principled, in practice it has been little used.

10 A simplified approach is to recover the utility's costs from ratepayers through a
11 volumetric rate or charge that is the same for all ratepayer classes. This approach is based
12 on the perception that DSM provides not only avoided electric supply cost benefits, but ad-
13 ditional economic and environmental benefits to the ratepayer body as a whole, i.e., socie-
14 tal benefits. Some DSM cost recovery riders and most of the more recent system benefits
15 charges (SBCs) have used this approach.

16 Historically, the most common single approach has been to recover DSM costs
17 through separate volumetric rates or charges from the two or three major rate classes. This
18 approach is based on the perception that the expenditures on DSM within a class are in
19 some sense a benefit to it specifically, so that even if DSM is societally cost-effective,
20 some weight should be given to inter-class equity. In situations where DSM spending and
21 implementation is likely to contribute to rate increases, considerations of inter-class equity

1 tend to weigh more heavily. For example, it is seen as fairer if customers eligible for resi-
2 dential programs pay for them.

3 In Utah, DSM is not likely to produce upward pressure on rates -- in fact rates are
4 likely to be somewhat lower with DSM than without it. Thus one could proceed with a sin-
5 gle DSM cost recovery charge. Nevertheless, I suggest to the Commission that it can avoid
6 perhaps unnecessary concerns about inter-class equity by allocating costs separately to res-
7 idential vs. nonresidential customers.

8 **Q. When a DSM cost recovery framework is in place, can very large energy users elect to**
9 **direct their own DSM activities, without being subject to the DSM rate or charge?**

10 A. Some jurisdictions have created an option whereby ratepayers with very high usage may
11 choose to pursue DSM on their own without being eligible for DSM programs or subject to
12 charges or rates to support the programs. The power of DSM comes from pooling resources
13 from the body of ratepayers and offering programs that incentivize efficiency actions
14 across the broad body of customers over a period of years. The ratepayers as a whole, in-
15 cluding very large volume users, benefit from DSM. In the interest of fairness, therefore,
16 options for self-directed DSM must be carefully circumscribed.

17 **Q. If the Company or Commission desired to consider a self-directed DSM option within**
18 **an overall Utah Power DSM initiative, what issues would they need to address?**

19 A. One issue to consider is the eligibility threshold for self-directed DSM. Self-directed DSM
20 would not apply to residential customers or distribution-level general service customer,
21 who account for some two-thirds of the electricity sold by PacifiCorp in Utah. The design

1 question would be for which remaining groups of customers it is desirable to create a self-
2 directed DSM option -- high voltage, irrigation, or other service customers, or subcatego-
3 ries thereof.

4 Another issue is the requirements each self-directing customer would need to meet.
5 Would a customer need to invest at least as much in DSM in their own facility as the
6 amount of DSM charges they would otherwise have been subject to? Would a customer
7 need to conduct a comprehensive engineering assessment of DSM opportunities and invest
8 in those measures meeting a financial investment hurdle, such as a simple payback of three
9 years or less? Would a self-directing customer need to achieve performance targets, such as
10 a declining intensity of electricity use per unit of product output? In order not to weaken a
11 DSM initiative, criteria requiring effective pursuit of energy efficiency by self-directing
12 customers would be needed.

13 A final issue is reporting. To assure that self-directing customers meet their part of
14 the bargain, a full accounting of internal energy efficiency and energy management
15 measures implemented is needed. Such reporting may need to distinguish between efficien-
16 cy improvements that were planned already, or are about the same in magnitude as in aver-
17 age prior years, and intensified new improvements taken as part of self-directed DSM ef-
18 forts.

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2 **DSM Cost Recovery Charge**

3 **Q. Is it correct that your previous testimony proposes a multi-year DSM initiative with**
4 **total first year utility costs of \$35 million?**

5 A. Yes. While the average annual DSM investment would be \$32 million, the first year in-
6 vestment would be \$35 million because of the needs to capture immediate savings in the
7 current environment of extraordinarily high wholesale power prices, and to incur some
8 one-time start-up costs.

9 **Q. Assuming a DSM rider and your proposed schedule of DSM investment, what DSM**
10 **charge would be established in this case?**

11 A. The residential rider would be established at a level of 3.58 mills per kWh, based on year 1
12 residential DSM costs and test year sales of 4,933,857,000 kWh. The rider would be ad-
13 justed annually to include any utility under-recovery or over-recovery in the next year's
14 rider. If the utility spends exactly the amounts I set forth in my previous testimony, and
15 there were no crediting of any purchased power market savings and no sales growth, the
16 rider would be at the following annual levels in years 2 through 6 (mills/kWh): 2.37, 1.66,
17 1.82, 1.99, and, in the last year, 2.17.

18 A nonresidential rider would be established at a level of 1.64 mills/kWh, based on
19 year 1 nonresidential DSM costs and test year sales of 10,534,353,000 kWh. At my pro-
20 posed annual spending levels, without any credits to the DSM rider, and at test year sales,

1 the non-residential rider would be at the following levels in years 2 through 6 (mills/kWh):
2 1.73, 2.00, 1.96, 2.21, and 2.37.
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1 **Q. Why would the rider be adjusted annually?**

2 A. There are changes over time in both the level of DSM spending, on the one hand, and DSM
3 revenue realized, on the other. In addition to differing annual DSM spending budgets, actu-
4 al spending in any year is likely to vary from that year's budgeted spending. Some pro-
5 grams might be more successful than expected, and it would be better to accept additional
6 participants and realize additional benefits than to limit participation for budgetary reasons.
7 Other programs might be more difficult to market than expected, resulting in lower than
8 planned expenditures.

9 Sales of electricity are likely to grow from year to year. A rider designed to recover
10 budgeted spending based on test year sales will over-recover if sales grow. All else equal,
11 sales growth would reduce the annual DSM charges from the levels calculated above.

12 **Q. Would the utility file for annual DSM charge adjustments?**

13 A. Yes, it would apply to the Commission for adjustments to the DSM charges. It would re-
14 port DSM costs incurred, DSM revenues received, any under or over-recovery, and the in-
15 terest on the under or over-recovered amount. It also include purchased power savings, as
16 described further below. Based on these data, it would propose the rider for coming year.

17 **Q. Would the effectiveness of utility performance in delivering DSM be assessed during**
18 **the annual adjustments to the DSM rider?**

19 A. No. I would recommend that annual true-up proceedings be limited to review of the ex-
20 pense and revenue data, and perhaps to verifying that the monies reported were spent on
21 the approved DSM programs. In my previous testimony I indicated that the Commission

1 should require a DSM compliance filing. That filing would include plans for evaluation of
2 the effectiveness of DSM programs and the utility's performance as administrator of the
3 programs. Evaluation of utility performance is essential, but should occur according to the
4 procedures and schedule in an agreed evaluation plan, or in the context of the next general
5 rate case, whichever comes first. It would be inefficient to encumber annual DSM true-up
6 proceedings with substantive performance evaluation.

7 **Sharing the Savings from DSM**

8 **Q. Do you propose that the Company's savings in purchased power costs due to DSM be**
9 **shared with the ratepayers?**

10 A. Yes, I do. I suggest a mechanism crediting purchased power savings to the DSM charge
11 account.

12 **Q. Please describe the sharing mechanism.**

13 A. The basic concept, as presented in my previous testimony, is that purchased power market
14 savings, net of utility lost revenues, are credited to the DSM charge account. There are
15 three basic steps to implementing this concept. First, the Company must track the estimated
16 energy savings from its DSM programs. Next, the Company must estimate what it would
17 have paid to procure the extra electricity it would have needed absent those DSM savings.
18 Finally, the Company may calculate the sales revenues it lost due to DSM savings.

19 **Q. Can you provide an example showing how the sharing mechanism would work?**

20 A. Yes. I will use a simplified example. Suppose that in two successive years the utility's
21 spending for approved residential DSM is \$10 million, and the DSM charge without shared

1 savings is 2 mills/kWh. Suppose that in the first year savings attributable to residential
2 DSM are 60 million gWh (sales) and 69 gWh (input requirements). The Company's total
3 purchased power savings for the avoided 69 gWh are \$11 million. Base rates are \$0.07 per
4 kWh, so the Company's lost sales revenue totals \$4,200,000. The difference between pur-
5 chased power savings and lost revenue is \$11,000,000 minus \$4,200,000, or \$6,800,000.

6 In this example, the second year DSM rider would be adjusted to collect
7 \$10,000,000 in DSM spending, less net purchased power savings of \$6,800,000. Thus the
8 amount to be collected would fall to \$3,200,000, and the DSM charge would fall from 2
9 mills/kWh to 0.64 mills/kWh.

10 This example shows how power market savings can benefit both the Company and
11 the ratepayers. The Company is made whole with respect to lost revenues, while the cost of
12 DSM to ratepayers falls. If the purchased power savings are substantial enough, the DSM
13 charge becomes negative, and is a credit to ratepayers.

14 **Q. Please explain how the DSM charge might become negative as a result of your pro-**
15 **posed shared savings mechanism.**

16 A. I will do this by extending the two-year example I gave above into a third year. I assume
17 the third year also has a residential DSM budget of \$10 million. Suppose that in the second
18 year savings attributable to residential DSM are 120 million gWh (sales) and 138 gWh (in-
19 put requirements), reflecting the accumulation of benefits over two years. The Company's
20 total purchased power savings for the avoided 138 gWh are \$22 million. Base rates are
21 \$0.07 per kWh, so the Company's lost sales revenue totals \$8,400,000. The difference be-

1 tween purchased power savings and lost revenue is \$22,000,000 minus \$8,400,000, or
2 \$13,600,000.

3 The third year DSM rider would be adjusted to collect \$10,000,000 in DSM spend-
4 ing, less net purchased power savings of \$13,800,000. Thus the amount to be collected
5 would fall to minus \$3,800,000, and the DSM charge would fall from 0.64 mills/kWh to -
6 0.76 mills/kWh, and residential ratepayers would receive a small credit for each kWh of
7 electricity they bought. Though the examples I have presented here use the residential sec-
8 tor, the mechanism would apply in the same manner to non-residential customers.

9 **Q. How would the magnitude of savings attributable to DSM be established?**

10 A. The Company tracks DSM activity, including program participation and measures in-
11 stalled. To measures installed, it applies estimated energy and demand savings per meas-
12 ure. Through periodic studies, it must adjust these estimated savings to reflect the results of
13 rigorous evaluation and measurement of DSM impacts.

14 In each year, it is total DSM savings on a cumulative basis that are used to imple-
15 ment the shared savings mechanism. DSM savings will grow strongly over time, since the
16 continuing savings from measures installed in previous years will be added to the savings
17 from newly installed measures.

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1 **Conclusions**

2 **Q. What conclusions do you believe the Commission can draw from your testimony?**

3 A. I believe the Commission can find as follows:

- 4 • Separate DSM cost recovery riders for residential and non-residential customers are
5 feasible and equitable.
- 6 • It may be reasonable to permit very large customers to fund and implement DSM
7 directly. The Company should assess whether this is desirable.
- 8 • DSM cost recovery riders can be adjusted annually to true up DSM revenues and
9 expenditures.
- 10 • Purchased power market cost savings attributable to DSM can and should be calcu-
11 lated, and credited to DSM cost recovery accounts in the manner described in this
12 testimony.
- 13 • The Company should include the DSM riders its rates compliance filing.

14 **Q. Does this conclude your testimony?**

15 A. Yes, it does.