## BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Ratemaking Treatment of Demand-Side Resources and the Analysis of Regulatory Changes to Encourage Implementation of Integrated Resource Planning

DOCKET NO. 92-2035-04
FIRST REPORT, 1994 JOINT RECOMMENDATION

ISSUED: November 30, 1994

## SYNOPSIS

By this Report, the Utah Demand-Side Resource Cost Recovery Collaborative provides the Utah Commission with a preliminary 1994 Net Lost Revenue amount for their review and approval prior to PacifiCorp's January 18, 1995 booking to corporate accounts. This November 30, 1994 report is part of the February 10, 1994 Utah PSC Order approving the Demand Side Resource "Joint Recommendation" under Docket No. 92-2035-04, a 1994 trial program for DSR Cost Recovery.

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# November 30, 1994 Report of the Utah Demand Side Resource Cost Recovery Collaborative 

In the Utah Public Service Commission ("Commission") order dated February 10, 1994 in Docket No. 92-2035-04 ("Order"), the Commission approved the Joint Recommendation establishing Demand Side Resource ("DSR") cost recovery procedures for 1994. The order also established a new DSR cost-recovery collaborative ("Collaborative"), and outlined the responsibilities of the Collaborative. One of the responsibilities of the Collaborative is to monitor PacifiCorp's calculation of Net Lost Revenue ("NLR") for 1994. In addition, the order states that:

The Collaborative will submit a report to the Commission by November 30, 1994, which quantifies the dollar amount of NLR for 1994 and identifies the inputs which resulted in that dollar amount. The report will also identify the appropriate DSR measure lives for amortization purposes. (See Page 7 of the Order)

The order also states that:
The Commission finds that the Joint Recommendations's NLR provisions, including the NLR formula and 25 percent adjustment limit, are just, reasonable and in the public interest. The initial determination of PacifiCorp's 1994 NLR will be made by the Commission prior to January 18, 1995, the date on which PacifiCorp closes its books for 1994. (See page 5 of the Order)

The NLR calculated as a part of this report will be updated prior to January 18, 1995 to include actual DSR results for November and December 1994, to revise savings estimates resulting from subsequent program evaluations, and to reflect changes due to the settlement of other unresolved issues addressed in this report. After the Company closes its books for 1994 on January 18, 1995, any subsequent adjustments to the NLR amount are limited to $25 \%$ of the booked NLR.

## 1994 NET LOST REVENUE

The projected Net Lost revenue for 1994 is $\$ 338,723$, based on $21,014 \mathrm{MWh}$ of savings (non-annualized). This number is based on the best engineering estimates of installed and projected DSR projects in 1994 currently available. The data reflects installed projects for January to October, and projected projects for November and December. This data is subject to change based on ongoing program evaluation and verification efforts. A detailed listing of 1994 DSR projects is included as Attachment 1. The calculation of the NLR is included as Attachment 2.

## DSR Activity in 1994

PacifiCorp DSR activity, as measured through annualized engineering estimates, is estimated at $58,566 \mathrm{MWh}$ and 10.3 MW , exceeding the $40,000 \mathrm{MWh}$ and 6 MW goals stated in the Joint Recommendation. This DSR activity is also expected to exceed the Joint Recommendation goal that at least 20\% of the RAMPP-3 DSR goal is achieved in each customer class. Actual MWh savings on a non-annualized basis is estimated to be 21,014 , which represents $3.5 \%$ of actual energy growth in Utah ${ }^{1}$.

The Collaborative believes that the Net Lost Revenue mechanism in place in 1994 was instrumental in encouraging PacifiCorp to acquire the amount of DSR set as a goal in RAMPP-3. The mechanism encouraged PacifiCorp to significantly expand its energy efficiency programs in comparison to previous years. PacifiCorp expects to achieve approximately $97 \%$ of its overall target of $60,500 \mathrm{MWh}$ for Utah DSR acquisition set in RAMPP-3 for 1994 and will achieve approximately $140 \%$ of its RAMPP-3 target of 7 MW .

PacifiCorp's 1994 DSR programs also improve the energy efficiency of Utah's businesses and homes. This lowers customers bills, helps preserve Utah jobs and makes Utah businesses more competitive. For example, PacifiCorp helped major industrial customers achieve energy savings through the installation of energy efficiency measures (e.g. efficient motors).

## Inputs

Exhibit 1 of the joint recommendation approved in the Commission Order identifies the formula to be used to calculate NLR for 1994 (See Attachment 3). The Commission directed this Collaborative to specify the definitions of the inputs to be used in the formula. This section defines those inputs.

Briefly, the formula from Exhibit 1 is :

$$
\begin{aligned}
\text { Net Lost Revenues }= & (\mathbf{R}-\mathbf{A C}) \times(\text { ES }- \text { LG })+ \\
& (\mathbf{D C}-\text { ADC }) \times(\text { NCPs }-L G p)
\end{aligned}
$$

where:

$$
\begin{array}{ll}
\mathbf{R} & =\text { Retail rate per } \mathrm{kWh} \\
\mathbf{A C} & =\text { Avoided Energy Cost per } \mathrm{kWh} \\
\mathbf{E S} & =\text { Energy Savings in } \mathrm{kWh}
\end{array}
$$

[^0]| LG $=$ | Load building impacts in kWh of DSR programs, including <br> load growth related to DSR programs in the new <br> construction area. |
| :--- | :--- |
| $\mathbf{D C}=$Demand Charge per kW for the customer class based on <br> the current tariff |  |
| ADC $=$Avoided demand cost savings per kW based on non- <br> coincident peak, with line losses |  |
| NCPs $=$Non-coincident peak demand savings in kW <br> LGp $=$Load building impacts in kW of DSR programs, including <br> load growth related to DSR programs in the new <br> construction area. |  |

The formula used to compute annual net lost revenues in Attachment 2 reflects the time element of the units used in the formula and is thus refined to read:

```
Annual Net Lost Revenues \(=\operatorname{Sum}_{i}\left(R-A_{i}\right) x\left(E S_{i}-L_{i}\right)+\)
    \(\operatorname{Sum}_{i}\left(\mathrm{DC}-\mathrm{ADC}_{\mathrm{i}}\right) \times\left(\mathrm{NCPs}_{\mathrm{i}}-\mathrm{LGp}_{\mathrm{i}}\right)\)
```

where: $\mathbf{i}=$ month
The following provides a detailed description of where the input values for Attachment 2 come from and why these values were selected to represent the terms in the equation.

R: The retail price is the tail block rate per $k W h$ in the tariff or special contract of the participant in the DSR project. This value best represents marginal lost retail revenue.

The retail price for each program is shown on page 5 of Attachment 2.
AC: The value of energy costs avoided by saving a kWh through a DSR project is represented by the monthly avoided energy costs computed from PacifiCorp's production cost model, PDMac, for the year 1994. The calculation is based on the comparison of two PDMac runs; one with and one without 50 MW average of generation available at zero running cost. The run which includes the 50 MW average generation also includes the value of additional secondary sales made available with the additional 50 MW average. The PDMac analysis is based on RAMPP-3 medium load growth and includes the same resource base as the currently filed QF avoided cost analysis. The only difference between the currently filed QF avoided energy costs and the avoided energy costs employed on page 5 of Attachment 2, is the impact of secondary sales, which adds about 2 mills per kWh .

The subcommittee reviewed two different methods for valuing avoided energy costs for the net lost revenue estimate: the Realized Marginal Energy Cost
(RMEC) method and the normalized PDMac method. Each method had strengths and weaknesses. Some of the subcommittee members preferred the PDMac method because it produced normalized avoided energy costs. Since avoided costs are subtracted from normalized retail rates, a normalized number provides consistency in determining net lost revenues to the Company between rate cases. On the other hand, the RMEC method is a real time calculation of potential costs avoided by PacifiCorp based on the highest cost for one MW in each hour purchased or generated by PacifiCorp over six months. It is the method currently used for Sunnyside payments. Some subcommittee members preferred the theoretical appeal of the RMEC method because it could provide a sense of actual revenues lost. However, the computerized (and therefore easily accessible) RMEC method includes some high costs, namely purchases for resale and interruptible buy-throughs, which may not actually be avoidable and, thus, may overstate the avoided costs. The RMEC method can be calculated without these objectionable purchases, however this computation is not currently computerized and is extremely cumbersome at the present time. Further, the resultant avoided energy cost from RMEC computed without the objectionable high cost purchases is consistent in magnitude with the resultant avoided energy costs produced using PDMac with secondary sales. Therefore, the subcommittee concluded that the PDMac method with secondary sales produced a reasonable estimate of avoided energy costs and agreed to adopt this method for the present time.

The subcommittee agreed to use the avoided energy costs which have been filed by PacifiCorp in Utah Docket No. 94-2035-03 regarding QF standard avoided cost rates, adjusted for secondary sales, for this preliminary, November, account of net lost revenues, but reserves the right to revisit this issue when the case is resolved. Because the case will not be resolved prior to January 18, 1985, changes in final avoided costs employed to determine net lost revenues will be limited by the $25 \%$ constraint.

The subcommittee also analyzed the value of using time differentiated avoided energy costs and selected to use monthly avoided energy cost values for a more accurate account of net lost revenues. There is significant monthly variation in both avoided energy costs and projected kWh savings.
Additionally, there is a differential between on-peak and off-peak avoided costs. Matching the appropriate on-peak and off-peak avoided costs with onpeak and off-peak energy savings will yield a more accurate estimate of net lost revenues. However, estimates will be necessary to quantify on-peak and off-peak avoided costs and kWh savings. This will require significant Company resources and may or may not produce a result more accurate than using monthly avoided costs and kWh savings.

Because the monthly data is available and using the monthly data results in a significantly different estimate of net lost revenues, the monthly variation
was selected. Agreement was not reached on the application of peak/off-peak differentiation. Arguments against using the peak/off-peak differentiation are as follows:

- The peak/off-peak values overstate actual differentiation because they are based on the highest avoided cost and lowest avoided cost in a given month, not an average;
- The differentials between highest marginal cost and lowest marginal cost are applied to the PDMac average avoided cost assuming that half of the differential applies to peak and the other half to off-peak periods; this may not be the case and therefore adds uncertainty to the results reported above;
- The biggest impact on 1994 net lost revenues from applying peak/offpeak differentiation will result from the residential hot water saving program which will end in 1994, so on-going impacts will be smaller.
- The NLR subcommittee analysis used four commercial buildings, but industrial savings dominate and industrial savings will have the smallest amount of peak/off-peak variation.

For the reasons stated above, the subcommittee agreed not to apply peak/offpeak differentiation in this preliminary assessment of net lost revenues. The subcommittee is going to review additional information on the variation in system lambda between peak and off-peak periods to gain more confidence in the assessment of the impact of peak/off-peak avoided costs on net lost revenues. This information will be provided in an update letter to the Commission prior to January 18, 1995.

The monthly avoided energy costs employed in the calculation are shown on page 5 of Attachment 2.

ES: All kWh savings in Attachment 2 are engineering estimates for projects installed. Installation is generally measured as the day the Energy Service Charge contract is attached to the participants bill, or when installation and inspection is completed for non ESC projects. This is a very conservative date, as the building may be occupied months prior. The engineering estimates do not include any adjustment for verification, monitoring or estimates of free-ridership. Updates to these numbers will be provided prior to January 18, 1995 to the extent they become available. At that time, all Commercial FinAnswer program estimates will include adjustments for freeridership and load-building adjustments, which will be available from an evaluation report due in December, 1994, and from Industrial monitoring
data. In January, the Residential hot water saving program estimates may also be adjusted to reflect persistence of savings.

Currently, Commercial and Industrial FinAnswer programs provide monthly estimates of kWh . For the Residential programs, only annual data is available at present. Evaluation results will provide better estimate of the monthly variation in Residential energy savings.

Prior to January 18, 1995, the bulk of evaluation reports will be available to adjust the engineering estimates for free-ridership, load building, and persistence. Verified or measured savings will not be available until later in 1995, and therefore this adjustment will be subject to the $25 \%$ limitation.

Conservation savings achieved in 1994 from programs which are approved by the Commission subsequent to 1994 are included for 1994 NLR purposes.

Included as Attachment 1 is a list of all projects by class listing energy savings per building.

LG: As noted above, the value for load-building impacts in Attachment 2 is zero. Program evaluation results will provide quantification of this value, to the extent that such load building impacts are identified. The January update will include an estimate of this parameter.

DC: The retail demand charge is represented by the tail block demand charge rate for each customer class. (See Attachment 2, page 6)

ADC: The avoided demand charge represents a capacity credit made possible by a saved kW . A saved kW can be turned into a short term firm capacity sale which includes a fixed cost component.

One measure of avoided capacity costs is a comparison to actual capacity sale and purchase agreements. Attachment 2, page 6, shows the capacity purchases from Southern California Edison and The Washington Water Power Company and capacity sales to Eugene Water and Energy Board. Since these are take or pay contracts, it could be argued that there is no related capacity savings from DSR programs. However, the subcommittee believes that additional short term firm sales could result from DSR capacity reductions. The capacity purchase contracts with SCE and TWWP and the EWEB sales contract are used here as a surrogate for the capacity component of short term firm sales agreements for those months in which the sales/purchases occurred. For months with no purchase or sales, a zero value is assigned.

These values are shown in Attachment 2, page 6.

NCPs: The method used to represent this value is dependent on the program. All kW in Attachment 1 are based on engineering estimates. For the Commercial and Industrial FinAnswer programs, DOE-2 modeled kW is used. For the prescriptive Commercial FinAnswer program, DOE-2 modeled kW from the non-prescriptive Commercial FinAnswer is analyzed and prorated on the prescriptive program buildings. For the Residential programs, the lowincome retrofit program and the multifamily hot water savings program, conservation load factors were applied to the estimated kWh savings to derive a kW saved. The conservation load factor provides an estimate of the amount of kW available from a given program based on customer class. This estimate is based on assumptions about the typical amount of kW per kWh provided for a given program. The conservation load factors used are based on PacifiCorp's analysis. PacifiCorp will provide analytical support for the conservation load factors used in the NLR calculation to the Collaborative prior to January 1, 1995. Approximately one-fourth of the kW savings are calculated using a conservation load factor (See Attachment 1).

These values are shown on pages 7 and 8 Attachment 2.
LGp: Load-building kW impacts were assigned a zero value at this time. Evaluation reports will update this value for the January update, to the extent load building impacts are identified.

## DSR MEASURE LIVES

Attachment 4 outlines the estimated DSR measure lives by energy conservation measure. PacifiCorp plans to use a 10 year amortization period for residential DSR programs, and a 15 year amortization period for commercial and industrial DSR programs, unless the specific characteristics of a project indicate that a different amortization period is more appropriate. After reviewing Attachment 4, the subcommittee determined that the Company's proposed amortization periods are reasonable for the following reasons: 1) they approximate the energy conservation measure lives shown on Attachment 4; 2) a standardized amortization period is easier to administer; 3) this is consistent with PacifiCorp's current practices and the measure lives used in other PacifiCorp jurisdictions; and 4) it is a conservative estimate which takes into account potential technological changes and persistence of savings.

PacifiCorp
Utah Jurisdiction 1994 DSR Projects

| Line No. | Month of Installation | Cust. Class | Program | ID | Sched. | Annualized Gross kWh | Load Growth | Annualized Net kWh | Conserv. Load Factor | kW |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | January | Res. | ECONS | 9999 | Schedule 1 | 748,243 | 0 | 748,243 | 48\% | 178 |
| 2 | January | Res. | ECONS | 9999 | Schedule 5 | 1,117 | 0 | 1,117 | 48\% | 178 |
| 3 | February | Comm. | Comm. Finanswer | 171 | Sch. 6 (<100 MWh) | 37,240 | 0 | 37,240 | 60\% | 7 |
| 4 | February | Comm. | Commercial Spec. | 3 | Sch. 6 (> 100 MWh ) | 444,219 | 0 | 444,219 | 60\% | 85 |
| 5 | February | Comm. | Finanswer 12,000 | 76 | Sch. 6 (<100 MWh) | 63,521 | 0 | 63,521 | 60\% | 12 |
| 6 | February | Comm. | Finanswer 12,000 | 55 | Schedule 23 | 35,070 | 0 | 35,070 | 60\% | 7 |
| 7 | March | Res. | ECONS | 9999 | Schedule 1 | 987,478 | 0 | 987,478 | 48\% | 235 |
| 8 | March | Res. | ECONS | 9999 | Schedule 5 | 1,119 | 0 | 1,119 | 48\% | 23 |
| 9 | March | Comm. | Comm. Finanswer | 159 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 76,610 | 0 | 76,610 |  | 18 |
| 10 | March | Comm. | Comm. Finanswer | 308 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 591,622 | 0 | 591,622 |  | 413 |
| 11 | March | Comm. | Comm. Finanswer | 153 | Sch. 6 ( < 100 MWh ) | 197,922 | 0 | 197,922 |  | 28 |
| 12 | March | Comm. | Comm. Finanswer | 264 | Sch. 6 ( < 100 MWh ) | 193,295 | 0 | 193,295 |  | 56 |
| 13 | March | Comm. | Finanswer 12,000 | 128 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 10,274 | 0 | 10,274 |  | 0 |
| 14 | April | Res. | ECONS | 9999 | Schedule 1 | 1,294,284 | 0 | 1,294,284 | 48\% | 308 |
| 15 | April | Res. | ECONS | 9999 | Schedule 5 | 2,720 | 0 | 2,720 | 48\% |  |
| 16 | April | Comm. | Comm. Finanswer | 232 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 104,168 | 0 | 104,168 |  | 14 |
| 17 | April | Comm. | Comm. Finanswer | 193 | Sch. 6 ( < 100 MWh ) | 167.430 | 0 | 167,430 |  | 31 |
| 18 | April | Comm. | Finanswer 12,000 | 150 | Schedule 9 | 21,000 | 0 | 21,000 | 60\% | 4 |
| 19 | May | Res. | ECONS | 9999 | Schedule 1 | 963,011 | 0 | 963,011 | 48\% | 229 |
| 20 | May | Comm. | Comm. Finanswer | 251 | Schedule 23 | 114,411 | 0 | 114,411 |  | 8 |
| 21 | May | Comm. | Finanswer 12,000 | 145 | Schedule 23 | 12,242 | 0 | 12,242 |  | 0 |
| 22 | June | Res. | ECONS | 9999 | Schedule 1 | 1,597,963 | 0 | 1,597,963 | 48\% | 380 |
| 23 | June | Comm. | Comm. Finanswer | 160 | Sch. 6 (> 100 MWh ) | 458,784 | 0 | 458,784 |  | 71 |
| 24 | June | Comm. | Comm. Finanswer | 200 | Sch. 6 (<100 MWh) | 143,865 | 0 | 143,865 |  | 27 |
| 25 | July | Res. | ECONS | 9999 | Schedule 1 | 318,395 | 0 | 318,395 | 48\% | 76 |
| 26 | July | Res. | Sch. 5 Water Kits | 9999 | Schedule 5 | 1,154,839 | 0 | 1,154,839 | 48\% | 275 |
| 27 | July | Comm. | Comm. Finanswer | 225 | Sch. 6 (<100 MWh) | 120,924 | 0 | 120,924 |  | 77 |
| 28 | July | Comm. | Comm. Finanswer | 283 | Sch. 6 (> 100 MWh ) | 1,513,908 | 0 | 1,513,908 |  | 362 |
| 29 | July | Indus. | Indus. Finanswer | 181 | Schedule 9 | 1,432,000 | 0 | 1,432,000 |  | 225 |
| 30 | July | Indus. | Major Accounts | 9998 | Contract 1 | 4,436,000 | 0 | 4,436,000 |  | 400 |
| 31 | August | Res. | ECONS | 9999 | Schedule 1 | 1,432,520 | 0 | 1,432,520 | 48\% | 341 |
| 32 | August | Comm. | Comm. Finanswer | 255 | Sch. 6 (<100 MWh) | 58,764 | 0 | 58,764 |  | 16 |
| 33 | August | Indus. | Major Accounts | 9998 | Contract 1 | 5,316,000 | 0 | 5,316,000 |  | 607 |
| 34 | September | Res. | ECONS | 9999 | Schedule 1 | 1,658,473 | 0 | 1,658,473 | 48\% | 394 |
| 35 | September | Comm. | Comm. Finanswer | 298 | Sch. 6 (<100 MWh) | 191,181 | 0 | 191,181 |  | 45 |
| 36 | September | Indus. | Indus. Finanswer | 197 | Schedule 39 | 181,743 | 0 | 181,743 |  | 23 |
| 37 | September | Indus. | Major Accounts | 9998 | Contract 1 | 4,015,000 | 0 | 4,015,000 |  | 544 |
| 38 | September | Indus. | Major Accounts | 9997 | Contract 2 | 20,411,000 | 0 | 20,411,000 |  | 3,100 |
| 39 | October | Res. | ECONS | 9999 | Schedule 1 | 198,697 | 0 | 198,697 | 48\% | 47 |
| 40 | October | Res. | ECONS | 9999 | Schedule 5 | 15,549 | 0 | 15,549 | 48\% |  |
| 41 | October | Comm. | Comm. Finanswer | 215 | Sch. 6 (> 100 MWh ) | 474,925 | 0 | 474,925 |  | 93 |
| 42 | October | Comm. | Comm. Finanswer | 162 | Sch. 6 (<100 MWh) | 173,874 | 0 | 173,874 |  | 200 |
| 43 | November | Comm. | Finanswer 12,000 | 118 | Sch. 6 (< 100 MWh ) | 72,000 | 0 | 72,000 | 60\% | 14 |
| 44 | November | Comm. | Finanswer 12,000 | 148 | Sch. 6 (<100 MWh) | 114,000 | 0 | 114,000 | 60\% | 22 |
| 45 | November | Comm. | Comm. Finanswer | 145 | Sch. 6 (> 100 MWh ) | 1,600,000 | 0 | 1,600,000 | 60\% | 304 |
| 46 | November | Comm. | Comm. Finanswer | 199 | Sch. 6 (> 100 MWh ) | 700,000 | 0 | 700,000 | 60\% | 133 |
| 47 | November | Comm. | Finanswer 12,000 | 211 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 90,000 | 0 | 90,000 | 60\% | 17 |
| 48 | November | Comm. | Finanswer 12,000 | 56 | Sch. 6 (<100 MWh) | 92,000 | 0 | 92,000 | 60\% | 18 |
| 49 | November | Comm. | Comm. Finanswer | 218 | Sch. 6 (> 100 MWh ) | 566,000 | 0 | 566,000 | 60\% | 108 |
| 50 | November | Comm. | Comm. Finanswer | 219 | Sch. 6 (<100 MWh) | 290,000 | 0 | 290,000 | 60\% | 55 |
| 51 | November | Comm. | Comm. Finanswer | 313 | Sch. 6 (<100 MWh) | 151,000 | 0 | 151,000 | 60\% | 29 |
| 52 | December | Comm. | Comm. Finanswer | 252 | Sch. 6 (<100 MWh) | 254,000 | 0 | 254,000 | 60\% | 48 |
| 53 | December | Comm. | Cornm. Finanswer | 232 | Sch. 6 (<100 MWh) | 232,000 | 0 | 232,000 | 60\% | 44 |
| 54 | December | Comm. | Comm. Finanswer | 250 | Sch. 6 (<100 MWh) | 290,000 | 0 | 290,000 | 60\% | 55 |
| 55 | December | Comm. | Comm. Finanswer | 185 | Sch. 6 (>100 MWh) | 1,059,000 |  | 1,059,000 | 60\% | 201 |
| 56 | December | Comm. | Comm. Finanswer | 146 | Sch. 6 ( $<100$ MWh) | 86,000 | 0 | 86,000 | 60\% | 16 |
| 57 58 | December | Comm. | Comm. Finanswer | 310 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 307,000 |  | 307,000 | 60\% | 58 |
| 58 | December | Comm. | Comm. Finanswer | 229 | Sch. 6 (> 100 MWh ) | 900,000 | 0 | 900,000 | 60\% | 171 |
| 59 | December | Comm. | Comm. Finanswer | 221 | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 392,000 |  | 392,000 | 60\% | 75 |



|  | Annualized MW (1) |  |
| :--- | :--- | :--- |
| Residential | Commercial Industrial $\quad$ TOTAL |  |

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\begin{aligned}
& \mathrm{SLO} \\
& 1.0 \\
& 81 \cdot 0
\end{aligned}
$$

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\mathfrak{o}
$$

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\begin{gathered}
\text { N } \\
\text { © }
\end{gathered}
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PacifiCorp

Utah Jurisdiction 1994 Net Lost Revenue Calculation |  |
| :---: |
|  |
|  |
| Annualized MWh (1) |
| Residential |
| Commercial Industrial | $\stackrel{8}{\circ}$

4.11
$\stackrel{H}{0}$

| ㅇ |  |
| :--- | :--- |
| $\stackrel{0}{\circ}$ | 0 |

$\hat{\circ}$
0


Notes: (1) MW and MW amounts come from project summary by month on pages 7 and 8 .

-
749
580
0.18
0.00

| N |
| :---: |
| $\mathbf{N}$ |

$\stackrel{-}{0}$
0.23
$\stackrel{\infty}{0}$ 0.35 0.34 $\stackrel{\circ}{0}$ 옹 $\stackrel{8}{\circ}$
0.00 $\begin{array}{r}0.00 \\ \hline\end{array}$
 응 $\begin{array}{r}4.90 \\ 0.70 \\ \hline\end{array}$

580
00
0
0
0
0
5,868
5,316
5,316
24,608

- 0
0

$146 \%$
2.47
0.30


$$
\begin{align*}
& \text { Joint Recommendation, Docket No. 92-2035-07 order dated February 10,1994) }  \tag{array}\\
& \text { (3) Per page } 2 \text { of this attachment, DSR summary per month. }
\end{align*}
$$

Page 2
Pacificorp
Utah Jurisdiction 1994 Net Lost Revenue Calculation
Net Lost Revenue Summaries by Rate Schedule and by Month of Installation

| JARY | 1，503 | 2，546 | 3，023 | 3，215 | 3，532 | 3，280 | 2，279 | 2，218 | 2，543 | 2，826 | 2，437 | 2，369 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RUARY | 0 | 535 | 1，450 | 1，506 | 1，747 | 1，678 | 949 | 892 | 1，069 | 1，249 | 1，013 | 1，007 |
| CH | 0 | 0 | 4，621 | 9，640 | 10，528 | 9，934 | 6，536 | 6，367 | 7，553 | 8，721 | 6，806 | 6，708 |
|  | 0 | 0 | 0 | 3，128 | 6，926 | 6，491 | 4，401 | 4，253 | 4，904 | 5，459 | 4，679 | 4，586 |
|  | 0 | 0 | 0 | 0 | 2，411 | 4，488 | 3，123 | 3，023 | 3，438 | 3，822 | 3，371 | 3，318 |
|  | 0 | 0 | 0 | 0 | 0 | 4，216 | 5，695 | 5，528 | 6，390 | 7，193 | 6，213 | 6，061 |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 4，335 | 7，843 | 10，553 | 12，809 | 10，277 | 9，672 |
| UST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2，433 | 6，863 | 8，503 | 6，930 | 6，363 |
| EMBER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $(1,331)$ | 4，025 | $(3,331)$ | $(5,569)$ |
| OBER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1，750 | 2，642 | 2，652 |
| Ember | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4，970 | 6，030 |
| EMBER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4，907 |
| TOTAL | 1，503 | 3，081 | 9，094 | 17，489 | 25，144 | 30，087 | 27，318 | 32，557 | 41，982 | 56，357 | 46，007 | 48，104 | Notes：（1）Energy NLR plus Demand NLR from Page 3. （2）The total net lost revenues are calculated identically to those on lines 1－10．However，the amounts are summed by month of installation instead of by rate

$$
\begin{aligned}
& \text { TOTAL }
\end{aligned}
$$




Oct
May Jun Jul Aug Sep


5,012

16,552

| Schedule 1 | 1,501 |
| :--- | ---: |
| Schedule 5 | 2 |
| Sch. $6(<100 \mathrm{MWh})$ | 0 |
| Sch. $6(>100 \mathrm{MWh})$ | 0 |
| Schedule 9 | 0 |
| Schedule 23 | 0 |
| Schedule 39 | 0 |
| Contract 1 | 0 |
| Contract 2 | 0 |
| TOTAL | 1,503 |

Utah Jurisdiction 1994 Net Lost Revenue Calculation
Accumulated Energy \& Demand NLR Savings by Rate Schedule

| 3,077 |
| ---: |
| 4 |
| 38 |
| 177 |
| 0 |
| 28 |
| 0 |
| 0 |
| 0 |



## 











Notes: (1) Calculated by taking the MWh savings by schedule on page 4, multiplied by 1000 to convert to kWh , multiplied by the net energy rate by schedule on page 5 . (2) Calculated by taking the kW savings by schedule on page 4 , multiplied by the net demand rate by schedule on page 6 .
PacifiCorp
Utah Jurisdiction 1994 Net Lost Revenue Calculation
Demand and Energy Savings by Rate Schedule


## DEMAND TOTALS (kW) (2)

| 10 | Schedule 1 | 2,188 | 89 | 178 | 296 | 567 | 836 | 1,140 | 1,368 |  | 1,577 | 1,944 | 2,165 | 2,188 | 2,188 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | Schedule 5 | 280 | 0 | 0 | 0 | 1 | 1 | 1 | 139 | ! | 276 | 276 | 278 | 280 | 280 |
| 12 | Sch. 6 (<100 MWh) | 1,395 | 0 | 10 | 277 | 557 | 579 | 593 | 645 |  | 691 | 722 | 844 | 1,099 | 1,395 |
| 13 | Sch. 6 ( $>100 \mathrm{MWh}$ ) | 1,528 | 0 | 43 | 85 | 85 | 85 | 121 | 337 |  | 518 | 518 | 565 | 1,156 | 1,528 |
| 14 | Schedule 9 | 229 | 0 | 0 | 0 | 2 | 4 | 4 | 117 |  | 229 | 229 | 229 | 229 | 229 |
| 15 | Schedule 23 | 15 | 0 | 4 | 7 |  | 11 | 15 | 15 |  | 15 | 15 | 15 | 15 | 15 |
| 16 | Schedule 39 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 12 | 23 | 23 | 23 |
| 17 | Contract 1 | 1,551 | 0 | 0 | 0 | 0 | 0 | 0 | 200 |  | 704 | 1,279 | 1,551 | 1,551 | 1,551 |
| 18 | Contract 2 | 3,100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 1,550 | 3,100 | 3,100 | 3,100 |
| lotes: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (1) | Monthly energy from program summary on Pages $7 \& 8$. These are calculated by taking half a months amount in the month of installation, plus the full months amoun for all DSR installed in prior months. The monthly amount comes from either DOE-2, engineering estimates and metering, or one-twelth of the annual amount. (See Pages $7 \& 8$ for more details on how monthly amounts are calculated for specific programs) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (2) | Monthly demand from all DSR projects inst | gram su in prior |  | $7 \& 8$ | ese | ulate | aking | a mon | amoun |  | the mo | of insta | on, plus | full am | ts for |


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Avoided Cost Calculation
Line
No．
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## PacifiCorp

Utah Jurisdiction 1994 Net Lost Revenue Calculation
Energy Rate Calculation（All amounts are cents $/ \mathrm{kWh}$ unless noted）
Apr

11．47\％ 4．08\％
1.6888
1.6217
1.5768



## Net Energy Rates

Net Avoided
Costs（6）
Secondary Distib Transmission


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1.5150
$$





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| :--- |
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Notes：（1）Tail block rate minus avoided cost adjusted for secondary distribution line losses．
（3）Tail block rate minus avoided cost adjusted for transmission line losses．
（5）Per PacifiCorp＇s December 31， 1993 Embedded Cost Study filed with the Utah Public Service Commission． （6）Avoided energy cost on line 1 ，increased by line loss percents on lines 2－4．
（7）Tail block rates by rate schedule as currently approved by the Utah PSC．
Schedule 1
Schedule 5
Schedule 5
Sch． 6 （ $<100 \mathrm{MWh}$ ）
Sch． 6 （ $>100 \mathrm{MWh}$ ）
Schedule 9
Schedule 23
Schedule 3
Contract 1
PacifiCorp


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$$

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Utah Jurisdiction 1994 Net Lost Revenue Calculation DSR Projects by Month of Installation（Page 1 of 2）

| Gross |
| :---: |
| Annualized | | Load |
| :---: |
| Growth | Annualized ${ }^{\mathrm{KWh}}$ $\begin{array}{rlr}748,243 & 0 & 748,243 \\ 1,117 & 0 & 1,117\end{array}$

$\begin{array}{lr}\text { Sch．} 6(<100 \mathrm{MWh}) & 37,240 \\ \text { Sch．} 6(>100 \mathrm{MWh}) & 444,219\end{array}$
웅

$, 294,284$
271,720
271,598
21,000
963,011
114,411
12,242
1，597，963 458，784 318，395
 $1,432,520$
58,764
$5,316,000$ 1，658，473 181,743
$4,015,000$
$20,411,000$ 20，411，000 Customer $\quad \begin{gathered}\text { Rate } \\ \text { Class }\end{gathered}$
DSR
Program $\begin{gathered}\text { Customer } \\ \text { Class }\end{gathered}$ Residential Schedule 1 O
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$N N_{N}$
$N$
$N$ 110＇896
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0
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0
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0
0 $1,658,473$
191,181
181,743
$4,015,000$
$20,411,000$ 0000 0000 o 0000  000
 000 o 00000 0 00 か゚ Conservation
Load
Factor（10）

 Load Demand Factor（10）$\quad$（9）

| Approx． <br> NLR |
| ---: |
| $\$ 31,728$ |
| $\$ 44$ |
|  |
| $\$ 885$ |
| $\$ 9,842$ |
| $\$ 1,466$ |
| $\$ 903$ |
| $\$ 34,542$ | こちS‘ャと\＄











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N $\infty 0$ ${\underset{C}{\infty}}_{\circ}^{\infty}$ $\stackrel{N}{N} \underset{N}{N} \underset{N}{N} \mathrm{~N}$
$\underset{\sim}{\square} \underset{8}{\circ}$
 $\stackrel{\circ}{\circ}$ $\stackrel{\circ}{8}$ $\stackrel{\circ}{\circ}$ $\stackrel{\circ}{\circ}$
 $\stackrel{\circ}{\infty}$ Class Schedule （1）

 Commercial | 0 |
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| $E$ |
| $E$ |

 Commercial
 드 Comm．Finanswer
Commercial Spec． Commercial 12000 Finanswer 12，000 ECONS

Line
No．

February

anuary

January
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$\sum \sum$ March $\wedge \infty \sigma$ 응 으
＝ －NM Schedule 1

Sch． 6 （＜ 100 MWH ）
Schedule 9
Schedule 1 Schedule 23
Schedule 23

Schedule 1
Sch． $6(<100 \mathrm{MWh})$
Sch． $6(>100 \mathrm{MWh})$ Schedule 1

 Schedule 9
Contract 1 Schedule 1
Sch． 6 （＜ 100 MWh ） Sch． 6 （＜ 100 MWh ）
Contract 1 Schedule 1
Sch． 6 （＜ 100 MWh ）
Schedule 39 Contract 1

Residential

 Industrial
Industrial
 дәмsueu！d wuos Comm．Finanswer ECONS Sch． 5 Water Kits Comm．Finanswer Comm．Finanswer Indus．Finanswer
Major Accounts Major Accounts ECONS Comm．Finanswer
Major Accounts Major Accounts

September ECONS September Comm．Finanswer September Indus．Finanswer September Major Accounts
 $\stackrel{ \pm}{5}$ $\propto \infty$ ㄷ N N N N N

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Page 8
PacifiCorp
Utah Jurisdiction 1994 Net Lost Revenue Calculation
DSR Projects by Month of Installation (Page 2 of 2)




| Conservation |
| :---: |
| Load |
| Factor (10) |

$48 \%$
$48 \%$


| Line No. | Month | DSR Program |  | Customer Class | Rate Schedule | Gross Annualized kWh | Load Growth kWh | Annualized kWh |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 35 | October | ECONS | (1) | Residential | Schedule 1 | 198,697 | 0 | 198,697 |
| 36 | October | ECONS | (1) | Residential | Schedule 5 | 15,549 | 0 | 15,549 |
| 37 | October | Comm. Finanswer | (3) | Commercial | Sch. 6 (<100 MWh) | 173,874 | 0 | 173,874 |
| 38 | October | Comm. Finanswer | (3) | Commercial | Sch. 6 ( $>100 \mathrm{MWh}$ ) | 474,925 | 0 | 474,925 |
| 39 | November | Comm. Finanswer | (3) | Commercial | Sch. 6 (<100 MWh) | 441,000 | 0 | 441,000 |
| 40 | November | Comm. Finanswer | (3) | Commercial | Sch. 6 (> 100 MWh ) | 2,866,000 | 0 | 2,866,000 |
| 41 | November | Finanswer 12,000 | (3) | Commercial | Sch. 6 (<100 MWh) | 368,000 | 0 | 368,000 |
| 42 | December | Comm. Finanswer | (3) | Commercial | Sch. 6 ( $<100 \mathrm{MWh}$ ) | 1,561,000 | 0 | 1,561,000 |
| 43 | December | Comm. Finanswer | (3) | Commercial | Sch. 6 (>100 MWh) | 1,959,000 | 0 | 1,959,000 |

Exhibit 1

## Formula for Calculation of Net Lost Revenue

1995 and Subsequent years
For purposes of the faterim Policy NLR shall be the sum of lost energy revenue and lost demand revenue. Both an energy and demand component will be calculated for each rate schedule. The formulas for these calculations are defined below:

Energy: $\quad$ Net Lost Revenue (energy) $=(R-A C) \times(E S-L C)$
where:
$\mathrm{R}=$ Tail block rate per kWh for the customer class per the current tariff.
$A C$ - = Monthly short-run avoided costs per kWh based on modeled production costs. Adjusted for sales for resale credit and average line losses.
$E S=W_{W h}$ energy savings actually incurred or estimated by engineering analysis for conservation measures during the fiternmerned. Engineering analysis will be updated with the most current evaluation information, through -1995. Such evaluation shall include the appropriate treatment of free riders, free drivers, snapback and persistence of savings (See Exhibit 2) to the extent such elements can be quantified. (see note 1)
$L G=k W h$ sales increase related to load building impacts of DSR programs. This component will be based on engineering analysis and will be updated based on program evaluation. through 1995. Load growth related to DSR programs in the new construction area will be included in this component of the Formula.

Demand: $\quad$ Net Lost Revenue (demand) $=(D C-A D C) \times(N C P=$ ISp $)$
where:
$\mathrm{DC}=$ Demand charge per kW for the customer class based on the current tariff.
$A D C=$ The identified avoided demand cost savings for 1894 that result from DSR programs. This component will be adjusted to an NCP basis and will be adjusted for line losses.
$\mathrm{NCP}_{s}=$ Non-coincident peak ( kW ) savings at the sales level produced by energy conservation measure. The non-coincident peak savings will be based upon engineering analysis. In the event that engineering analysis of the non-coincident peak savings is not available. the $\mathrm{NCP}_{s}$ component will be estimated based on the best available data.
$L G p=$ The impact on the NCP of load building affects of DSR programs. This component will be based on engineering analysis and will be updated based on program evaluation through 1995.

Note 1 Initial engineering analysis employed for purposes of NLR calculation will be those used contractually between the Company and the customer related to conservation savings. Such engineering analysis will be updated based on program evaluation. Some conservation measures do not involve a specific contract between the Company and the customer. The NLR for these measures will be based on the engineering analysis included in the program design. Certain DSR programs may include a combination of DSR activities and increased electrification. The energy savings of such programs will be the efficiency increment (based on engineering analysis) over the "base line" of what the customer would have installed absent the Company's involvement.

ALSO ADD SOMETHING LIKE:

$$
\begin{aligned}
& \text { "The NLR amwuruts will be booked } \\
& \text { during the subsequiant } 12 \text { months } \\
& \text { foller'man project installation." }
\end{aligned}
$$

## MEASURE LIVES ENERGY CONSERVATION MEASURES

## Measure Life

BUILDING ENVELOPE

- High Efficiency Glazing ..... 20
- Perimeter Floor Slab Insulation ..... 30
- Exposed Floor Insulation ..... 30
- Roof Insulation ..... 30
- Wall Insulation ..... 30
WATER HEAT MEASURES
- Time Clock Control - SHW Recirc. Pumps ..... 10
- Flow Efficient Shower Head ..... 10
- Heat Pump Water Heater ..... 15
LIGHTING MEASURES
- Compact Fluorescent Light ..... 15
- 4 Foot ES Fluorescent Lamps ..... 15
- Electronic Ballast ..... 15
- Exit Sign ..... 30
- High Pressure Sodium ..... 15
- Occupancy Sensors ..... 10
HVAC
- Airside Economizer ..... 15
- Energy Management System ..... 10
- High Efficiency Chiller ..... 15
- Programmable Thermostats ..... 10
- Water Source Heat Pumps ..... 15
- Efficient Air-Source Heat Pumps ..... 15
- Exhaust Air Heat Recovery ..... 15
- Heat Recovery Chiller ..... 15
- Tower Free Cooling ..... 15
- Variable Speed Drives Fans \& Pumps ..... 15
- Direct-Indirect Evaporative Cooling ..... 15
OTHER
- Energy Efficient Motor ..... 15
- Vegetation for Cooling ..... 15
- Efficient Refrigeration ..... 10


[^0]:    ${ }^{1}$ Utah Energy growth from September 1993 to September 1994.

