



**THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

DE 15-xx

UNITIL ENERGY SYSTEMS, INC.

**DIRECT TESTIMONY OF
DOUGLAS J. DEBSKI**

EXHIBIT DJD-1

MAY 13, 2015

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COMPLETE LIST OF DJDSCHEDULES

<u>Schedule Number</u>	<u>Description</u>	<u>Pages</u>
DJD-1	Displaced Distribution Revenue due to Net Metering - 2013	16
DJD-2	Displaced Distribution Revenue due to Net Metering - 2014	16
DJD-3	PVWatts generation data	1

1 **I. INTRODUCTION**

2 **Q. Please state your name, your position, and business address.**

3 A. My name is Douglas J. Debski. I am a Senior Regulatory Analyst for Unitil
4 Service Corp., an affiliate of Unitil Energy Systems, Inc. ("UES" or the
5 "Company"). My business address is 6 Liberty Lane West, Hampton, New
6 Hampshire, 03842-1720. Both Companies are subsidiaries of Unitil Corporation.

7 **Q. Please describe your educational and professional background.**

8 A. In 1987, I graduated cum laude from the University of New Hampshire with a
9 Bachelor of Science Degree in Mathematics. I joined Unitil Service Corp. in
10 1988 and have held numerous positions in the Rates and Regulatory Service
11 Department while progressing in responsibilities to my current position.

12 **Q. Please describe your professional background.**

13 A. I joined Unitil Service Corp. in May 1988. Since that time, I have prepared
14 numerous regulatory filings, tariffs, price analyses and design, load research
15 studies and analyses, bill frequency analyses and load forecasting for, or on behalf
16 of, the Company and Unitil Corporation's other utility affiliates, Northern
17 Utilities, Inc. and Fitchburg Gas and Electric Light Company.

18 **Q. Have you previously testified before the Commission or any other regulatory
19 body?**

20 A. Yes, I have previously presented Testimony before the New Hampshire Public
21 Utilities Commission ("Commission"). I have also prepared and presented

1 testimony before both the Maine Public Utilities Commission and the
2 Massachusetts Department of Public Utilities.

3 **II. SCOPE OF TESTIMONY**

4 **Q. What is your responsibility in connection with this proceeding?**

5 A. I am presenting the Company's calculation of displaced distribution revenue
6 associated with net metering for years 2013 and 2014 for Commission review so
7 that it may be included in the External Delivery Charge for cost recovery in UES'
8 upcoming reconciliation filing. That filing will be made on June 17, 2015 for
9 rates effective August 1, 2015.

10 **Q. Please outline the organization of your Testimony and Schedules.**

11 A. In addition to Exhibit DJD-1, the written testimony here, I am presenting three
12 schedules. Schedules DJD-1 and DJD-2 are the calculations of displaced
13 distribution revenue associated with net metering for years 2013 and 2014.
14 Schedule DJD-3 is a PVWatts generation model output showing the amount of
15 annual kWh generated by a typical 1,000 kW-AC unit.

16 **III. DISPLACED DISTRIBUTION REVENUE**

17 **Q. Could you please explain why the Company is seeking recovery of the cost of**
18 **displaced distribution revenue associated with net metering?**

19 A. Due to the installation of customer-owned net metering generation, primarily
20 solar facilities and some wind generation units, UES is receiving less distribution

1 revenue than it would have otherwise received in the absence of any net metered
2 generation on the Company's distribution system. Because of the nature and
3 installation of net metering units, energy generated by these facilities displaces
4 energy that the electric utility customer would otherwise have had delivered to
5 their location. As a result, UES received less distribution revenue than it would
6 have absent net metering generation.

7 **Q. Under what authority does UES base its claim to recover the costs associated**
8 **with displaced distribution revenue due to net metering?**

9 A. UES claims the authority to recover lost revenue pursuant to New Hampshire
10 Code Admin. Rules Puc 903.02(o) which states as follows:

11 *“A distribution utility may perform an annual calculation to determine the net*
12 *effect of net metering on its default service and distribution revenues and*
13 *expenses in the prior calendar year. Pursuant to Puc 203, the commission*
14 *shall determine by order, after notice and hearing, the utility-specific method*
15 *of performing the calculation and applying the results, as well as a*
16 *reconciliation mechanism to collect or credit any such net effects with*
17 *appropriate carrying charges and credits applied.”*

18 **Q. Has UES previously a similar proposal to the NHPUC Commission for**
19 **review?**

20 A. Yes, in the UES June 17, 2014 External Delivery Charge filing, Docket DE 14-
21 170, the Company proposed to recover \$18,724 of lost distribution revenue due to

1 net metering generation for 2013. This amount was amended to \$17,337 at
2 hearing. The Company subsequently moved to withdraw this portion of the
3 External Delivery Charge filing without prejudice, which was approved. As a
4 result of changes in model assumptions and a change to exclude amounts included
5 in the Company's cost of service in the last distribution rate case, DE 10-055, the
6 amount the Company is seeking recovery of pursuant to the net effect of net
7 metering has been modified as discussed below.

8 **Q. Can you describe how you estimated the monthly and annual generation for**
9 **the net metering customers?**

10 A. The calculation of the kWh displaced per kW of AC generation installed is based
11 on the PVWatts generation model and is used at the location of the Concord
12 Airport, TMY2 (see Schedule DJD-3). PVWatts is a commonly used model
13 designed by the National Renewable Energy Laboratory for the purpose of
14 estimating generation. In order to calculate the amount of annual kWh generated
15 per kW of AC installed, the model inputs utilized a 1,250 kW-DC and a DC to
16 AC derate factor of 1.25 to achieve the desired 1,000 kW-AC. The model
17 estimates annual generation kWh per kW-AC of 1,637.869 kWh. This amount is
18 then applied on a calendar month basis in the amounts shown in the Schedule
19 DJD-3.

20 **Q. Please describe how you estimated the displaced distribution revenue**
21 **associated with net metering?**

1 A. Schedule DJD-1 shows the 2013 data and Schedule DJD-2 shows 2014 data.
2 Distribution rates are used in each month in which they were in effect. For
3 customers in the general service classes (shaded rows), the distribution kWh rate
4 is \$0, so the estimated displaced distribution from these customer classes is \$0.
5 The company has assumed that the monthly billing kW or kVA for these
6 customers is not affected by installed generation due to the intermittent nature of
7 solar and wind generation, whether or not that is actually the case. This produces
8 a conservative estimate of displaced distribution revenue for these customers. For
9 residential customers, the blocked kWh rates that were in effect in 2013 and 2014
10 are shown and utilized in the model each month.

11

12 The estimated kWh generation for each customer is calculated each month based
13 on the size of the customer generator in kW-AC multiplied times the monthly to
14 annual ratio of the PVWatts data described above. This amount is then compared
15 to the kWh billed each month for the customer. Depending on the amount of the
16 generation and the kWh billed, the displaced distribution revenue is calculated by
17 computing the appropriate kWh at each block level times the appropriate block
18 rate. For example, if the customer billed above 250 kWh (first block cutoff), all
19 the displaced kWh would have been at the second block rate. If the customer
20 billed less than 250 kWh, then the kWh displaced would be allocated to the first
21 block (up until the combination of billed kWh and a portion of displaced kWh
22 reaches 250 kWh) and the second block (remaining amount of displaced kWh)

1 appropriately. For customers who installed generation during one of the months
2 of the year being calculated, the estimated displaced distribution revenue is only
3 calculated for the month, or portions thereof, that the generation was installed.
4 Detailed calculations are shown in the two schedules. The Company only
5 estimates the costs of displaced distribution revenue for kWh that is actually
6 displaced. Therefore, in months the customers generates more than they
7 consumed, they have a net surplus of kWh generation, and the difference between
8 the kWh generation and the kWh consumed is not included in the calculation of
9 displaced distribution revenue. For 2013 (Schedule DJD-1), the calculation yields
10 displaced distribution revenue of \$15,261 and for 2014 (Schedule DJD-2), the
11 calculation yields lost distribution revenue of \$26,367.

12 **Q. How has test year displaced revenue associated with the Company's last base**
13 **rate case been excluded from these calculations?**

14 A. The Company's last test year for a distribution rate case was in 2009. Customers
15 with on-site generation installed prior to 2009 are not included in Schedules DJD-
16 1 and DJD-2. For those customers installed during 2009, the portion of annual
17 displaced kWh following the date of the installation served to lower the test year
18 billing units. Therefore, in Schedules DJD-1 and DJD-2, only the portion of the
19 year up until the date of the installation is used in the calculation of estimated
20 generation and displaced kWh and distribution revenue. The remainder of the
21 year is not included because the test year already took those "losses" or reduction
22 to sales into account. In summary, the Company included the displaced kWh for

1 all new customer installations since the test year, and for customers with
2 installation during the test year, the Company included the displaced kWh for
3 only a portion of the year. For example, the customer installed on 6/15/2009 had
4 a certain amount of displaced kWh and revenue after 6/15 in the test year. The
5 new models for 2013 and 2014 only have kWh generation for the customer up
6 until 6/15 and nothing for the rest of the year.

7 **IV. BILL IMPACTS**

8 **Q. Have you prepared an estimate of the bill impacts associated with this**
9 **proposal?**

10 A. Yes. A simple estimate of the proposed costs of \$41,628 divided by estimated
11 kWh sales for August 2015 – July 2016 of 1,245,327 MWh yields an incremental
12 rate of \$0.00003 per kWh, or about \$0.02 increase, or 0.01 percent, on a current
13 monthly 600 kWh residential bill of \$140.23.

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

15 A. Yes it does.