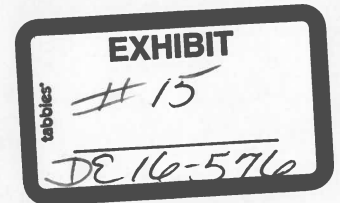


STATE OF NEW HAMPSHIRE
BEFORE THE PUBLIC UTILITIES COMMISSION
DOCKET NO. DE 16-576



DEVELOPMENT OF NEW ALTERNATIVE NET METERING TARIFFS AND/OR
OTHER REGULATORY MECHANISMS AND TARIFFS FOR CUSTOMER-
GENERATORS

DIRECT TESTIMONY OF EDWARD A. DAVIS

October 24, 2016

1 **Q. Mr. Davis, please state your name, position and business address.**

2 A. My name is Edward A. Davis. My title is Director of Rates for Eversource Energy Service
3 Company and my business address is Eversource Energy, 107 Selden Street, Berlin, CT
4 06037.

5 **Q. Mr. Davis, what are your responsibilities at Eversource?**

6 A. I am responsible for rate related matters for Eversource Energy's gas and electric operating
7 companies in Connecticut, Massachusetts and New Hampshire, including Public Service
8 Company of New Hampshire d/b/a Eversource Energy ("Eversource" or the "Company").

9 **Q. Mr. Davis, have you previously testified before the Commission?**

10 A. Yes. I have testified on several occasions before the Commission. I have also testified on
11 numerous occasions before state regulatory commissions in Connecticut and
12 Massachusetts.

13 **Q. Mr. Davis, would you provide a brief summary of your educational background and
14 work experience?**

15 A. I received a Bachelor of Science degree in Electrical Engineering from the University of
16 Hartford in 1988, and a Master of Business Administration degree from the University of
17 Connecticut in 1996. Since 1979 I have held a number of positions in the electric and gas
18 utility industry, in areas of responsibility that include state and federal jurisdictional rate

1 design, cost of service, rate regulation and administration; energy supply and delivery
2 service planning, marketing and sales; and customer engineering, operations and marketing
3 services.

4 **Q. What do you understand the purpose of this proceeding to be?**

5 A. This proceeding was initiated in order to comply with the requirements of HB 1116, “AN
6 ACT Relative to Net Metering” (31 N.H. Laws 2016), enacted by the Legislature during its
7 2016 session. RSA 362-A:9, XVI added by that law required the Commission to initiate a
8 proceeding to develop new alternative net metering tariffs, which may include other
9 regulatory mechanisms and tariffs for customer-generators, and determine whether and to
10 what extent such tariffs should be limited in their availability within each electric
11 distribution utility’s service territory. The Legislature specifically instructed the
12 Commission to avoid unjust and unreasonable cost shifting caused by net energy metering
13 customers.

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

15 A. The purpose of my testimony is to present the Company’s proposal for new, alternative net
16 metering rate schedules and corresponding rate designs. I discuss implementation of this
17 near-term proposal as well as possible development of a longer-term rate solution once the
18 Company has more information on the unique characteristics of these customers.

19 **Q. What exhibits have you prepared in support of your testimony?**

20 A. The following exhibits are included as part of my testimony:

- 21 • **Attachment 1 – Calculation of Proposed Distribution and Transmission Rates**
22 **for Residential DG and Small General Service DG customers**
23 • **Attachment 2 – Alternative Net Metering Rates: Illustrated Residential Bill**
24 **Comparison**

25 **Q. Please provide an overview of the Company’s rate proposal.**

26 A. The Company proposes to implement a new rate design that is based on rates approved by
27 the Commission and currently in effect. The proposed new rates will be applicable to

1 customers who receive a net metering capacity allocation for a qualified distributed
2 generation (DG) facility on and after the implementation date of the new tariff provisions
3 (see Docket DE 15-271 for capacity allocation procedures). Additionally, if the current net
4 metering cap has been exceeded before implementation of the new tariff, customers above
5 the cap who were allowed to take service under the current net metering provisions will
6 transition to the new tariff upon its implementation.

7 A new DG rate schedule would be added to the Company's Tariff corresponding to each of
8 the Company's current Rates R (Residential), G (General Service), GV (Primary General
9 Service) and LG (Large General Service). Under the Company's proposal, the DG
10 customer will be billed for delivery service charges based on their actual purchases from
11 the grid. Customers will continue to receive full net energy billing of charges for the
12 energy supply service in a given month. Excess energy produced after netting will be
13 compensated each month at the Company's avoided cost rate. Since the proposed design is
14 based on current, approved rates, it will address the near-term requirement for serving
15 qualified, new DG facilities. The Company will collect usage data from customers on the
16 new rates to determine appropriate costs and benefits that should be recognized in a
17 subsequent rate design.

18 This proposal is intended to meet an immediate need to address current issues and strike a
19 balance between providing customers with the opportunity to invest in renewable energy
20 resources and employing an equitable set of rates for utility services these customers
21 receive. Further, this proposal intended to serve as a first step in supporting longer term
22 goals for customer DG as they develop.

23 **Q. Please provide details of the Company's proposed rate design.**

24 A. For customers on the new rates, the Company will install metering that measures both
25 volumetric consumption and the peak demand requirements when customers use the
26 Company's electric system for deliveries of power to meet their electric service
27 requirements. I will refer to this as a customer's purchase of electricity. We will measure

1 the level and amount of power a customer purchases in units of demand (kW) and energy
2 (kWh) each billing cycle.

3 The Company's metering also measures the amount of excess power a customer's on-site
4 generation produces beyond what is being used by the customer on its premise. This
5 excess generated power is delivered to the Company's electric system. This will be
6 referred to as a wholesale sale of electricity. Wholesale sales are measured volumetrically,
7 in units of energy (kWh).

8 Retail purchases and wholesale sales measured over the course of a billing cycle are used in
9 calculating charges and credits on customer bills. During the billing cycle, when a
10 customer is purchasing energy there is no wholesale sale, and vice versa. Thus, retail
11 purchases and wholesale sales by DG customers occur at different times and are separate
12 transactions.

13 As described in the testimony of Messrs. Labrecque and Johnson, since net energy billing
14 reduces the purchases a customer pays for by offsetting retail purchases by wholesale sales,
15 these customers do not fully compensate the Company for the service they receive. As
16 explained in detail in Messrs. Labrecque's and Johnson's testimony, the avoidance of
17 paying for these costs while utilizing these services results in a cost shift to non-net
18 metered customers and provides a subsidy for the net metered customer. The Company's
19 proposed rate design for customers who install DG addresses the situation described above
20 in two ways.

21 First, in two of the Company's rate classes, Residential Rate R and General Service Rate G,
22 distribution and transmission service rates are assessed on a volumetric kWh basis. In its
23 proposed DG rates, the Company has converted the per kWh distribution and transmission
24 rates of existing Rate R and Rate G to a per kW basis. In performing this calculation, the
25 Company has retained the existing Commission-approved customer charge, and based the
26 design of the kW-based rate on the need to recover the revenue requirement from DG
27 customers via a demand charge. Such a charge follows fundamental rate design principles
28 because all costs of service for distribution and transmission service that are not customer-

1 related are demand-related. Traditional Rate R and Rate G customers have kWh-based
2 rates due to the simplicity of billing them with standard meters that reflect legacy
3 structures from a time when utilities provided vertically-integrated service. Though rates
4 have been unbundled, present distribution and transmission rates billed on a per kWh basis
5 were predicated on full requirements, kWh purchases.

6 The same revenue targets for rate design approved by the Commission in setting the current
7 kWh-based distribution and transmission rates for these rate classes have been utilized in
8 recalculating a corresponding per kW rate, using the kW demands of customers in each
9 rate class. This is a class-average, “revenue-neutral” rate design. Please refer to
10 Attachment 1.

11 Since most of the non-customer charge revenue requirements of Rate GV and LG are
12 charged on a per kW basis in the current design, no redesign of the delivery charges for
13 those rate classes is proposed in the DG rates.

14 Secondly, under the Company’s proposal, the distribution, transmission, Stranded Cost
15 Recovery, System Benefits and Electricity Consumption Tax charges would all be assessed
16 on the quantities registered in the “purchase” channel of the meter. In other words, there
17 would be no “crediting back” of these charges based on quantities in the “sales” channel.
18 This approach requires customers to pay for delivery services based on their purchases
19 from the grid and prevents bypass of components of service which are, by statute, non-
20 bypassable charges that all customers are required to pay¹.

21 **Q. How will net energy billing and sales of excess energy be compensated?**

22 A. This portion of the Company’s proposal addresses the retail purchase and wholesale sale of
23 actual energy by a DG customer. Under the Company’s proposal, customers continue to
24 receive net energy billing of charges for energy supply service for any surplus generation

¹ Under New Hampshire law, both the Systems Benefit Charge (SBC) and Stranded Cost Recovery Charge (SCRC) components of service are non-bypassable. References: For SBC see RSA 374-F:3, VI; for SCRC see RSA 374-F:3, XII(d) and RSA 369-B.

1 they sell to the grid within a given month. Any excess energy produced after such netting
2 is compensated that month at the Company's avoided cost rate under PURPA as set forth
3 in Puc 903.02 and reaffirmed by the Commission for the Company in Order No. 25,920
4 Docket No. DE 14-238. The value of net energy billing and calculation and application of
5 compensation for a customer's excess generation is illustrated for a typical residential DG
6 installation, as provided in Attachment 2.

7 **Q. How is the Company's proposal consistent with ratemaking principles and**
8 **requirements of this proceeding?**

9 A. As indicated above, the redesign of distribution and transmission rates on a kW basis is
10 consistent with the underlying cost of service associated with rates approved by the
11 Commission. The Company's proposal is intended to maintain revenue neutrality with
12 calculation of rates for each type of charge (i.e., customer, demand and energy).

13 As discussed in detail in Messrs. Labrecque's and Johnson's testimony, the impact of net
14 energy billing results in a shifting of costs to non-net metered customers and subsidization
15 of net metered customers. This is the unjust and unreasonable cost shifting that HB 1116
16 requires the Commission to consider and avoid.

17 Addition and operation of a customer's DG facility reduces purchases and creates a lost
18 revenue situation. Net energy billing further reduces what a customer pays for the service
19 they receive and exacerbates the revenue deficiency problem. While rates may be reset
20 during a regulatory proceeding, or a lost revenue recovery mechanism may be
21 implemented, these approaches carry an inherent lag that nonetheless shift cost recovery to
22 other customers and do nothing to ensure that customers with DG pay a fair rate for the
23 services they receive. The Company's proposal provides a more equitable and sustainable
24 solution.

25 While it may be difficult to determine with absolute precision the lost revenue due to
26 displaced purchases without additional and potentially complex and costly metering, we

1 can readily know each month exactly how much electricity from the utility's system a DG
2 customer uses simply by reading their utility meter. And by charging for the demand and
3 energy they use, rather than maintaining only energy rates and promulgating net energy
4 billing, customers with DG pay for their actual use of the system at rates that are cost
5 based and that improve the fairness and equity of charges for service to them. The
6 Company's proposal is designed specifically to reduce cost shifting caused when
7 customers avoid paying for delivery service (i.e., the distribution, transmission, and non-
8 bypassable charges), and accomplishes this through a combination of rate design (i.e.,
9 setting a kW-based demand charge) and rate applicability (each customer pays for their
10 actual, metered purchases, for all delivery service components). At the same time,
11 customers continue to receive the benefits of net metering for the generation supply
12 component of service. Net energy billing for energy supply purchased throughout the
13 month is maintained, and compensation at PUC-approved rates is provided for any excess
14 energy.

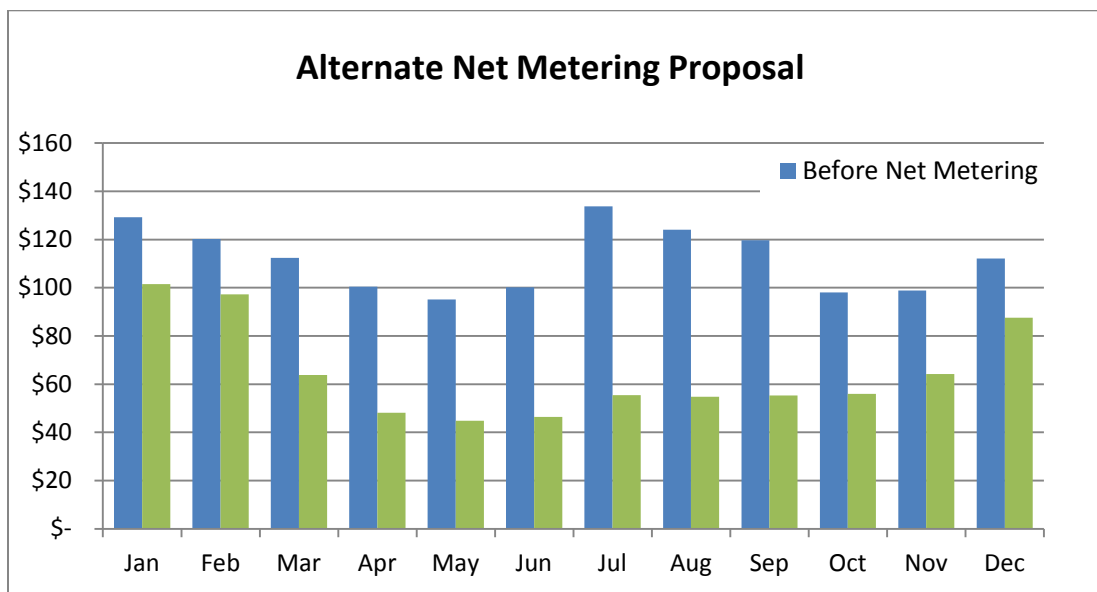
15 **Q. Describe the metering and other requirements necessary to implement proposed**
16 **rates.**

17 A. A meter capable of measuring maximum monthly kW demand (highest 30 minute demand
18 of each billing cycle) for the purchase channel is a new requirement for residential DG
19 customers (it is instructive to note that such a meter and corresponding meter data
20 collection and billing processes are in service for other classes). The cost of new
21 residential metering with this capability is comparable to that of currently installed meters;
22 therefore, the Company does not propose any additional charge to customers for these
23 meters. Our billing systems would need to be programmed to implement any new rate
24 structure approved by the Commission. The Company would request that in its order
25 approving new rates, the Commission allow sufficient time for billing modifications.

26 **Q. What are the impacts to customer billing and compensation of the Company's**
27 **proposal?**

28 A. Billing and compensation for customers who install and operate DG can vary significantly
29 depending on customer load and operation of their DG facility. Attachment 2 provides an
30 average monthly profile of demand and energy for a sample residential customer, along

1 with the monthly operation of a solar PV facility that such a customer might install,
2 estimated using actual operations of such facilities. Based on current rates and an assumed
3 rate for avoided costs, the Company has calculated the bill for such a customer without
4 DG, and the net bill after applying net energy billing and excess energy credits. As shown
5 in Attachment 1 and further summarized in Figure 1. the charges and credits for this
6 customer vary by month. On an annual basis, the customer in this example would see a
7 bill reduction of \$569, or about 42% of their total charge prior to installing DG.



8

9 Figure 1 - Alternate Net Metering Bill Comparison

9

10 While actual charges and credits will vary by customer, the illustration is representative of
11 the dynamics of net metering under the Company's proposal. The customer receives net
12 energy billing and excess generation credits commensurate with operation of their DG
13 facility, is charged for distribution and transmission service and the required non-
14 bypassable components of service based on their actual demand and use of the electric
15 system.

16 **Q. Discuss further the Company's proposal for development of subsequent rates relative**
17 **to the initial rate proposal presented herein.**

18 A. The Company is proposing distribution rates for its DG customers which are the equivalent
19 of rates charged to other customers in the class. This initial structure would be reviewed
20 and adjusted in a future rate proceeding based on subsequently collected customer demand

1 and usage characteristics, and a corresponding cost of service evaluation for customers
2 taking service under the initial rate.

3 **Q. What are the Company's concerns with respect to lost revenue, lost revenue recovery**
4 **and metering, administrative and other costs associated with net metering? How**
5 **does it propose to address these concerns?**

6 A. The Company does not anticipate significant, incremental costs to deploy metering
7 technology discussed above, but will need to evaluate the additional programming and
8 billing costs associated with implementing the new charges, and net energy billing and
9 payment protocols of this proposal. The Company believes that its proposed corrections to
10 billing of non-bypassable charges and implementation of demand-based rates for
11 distribution and transmission components of service provide a significant correction to the
12 lost revenue and cost shifting attributable to net energy billing, and to some extent the lost
13 revenue associated with displacements of load due to installation and operation of DG
14 facilities. These solutions contribute to a more sustainable rate design.

15 **Q. Should there be a cap on the amount of DG allowed under this tariff?**

16 A. Not initially. The proposed rate structure is designed to better align assessed rates with
17 cost causation, a traditional rate design principle that ensures fairness to all customers. As
18 additional amounts of DG are deployed and additional information about DG customers is
19 obtained, the performance of this rate design and the potential for revisions to maintain this
20 alignment should be reviewed.

21 **Q. Please summarize the Company's proposal.**

22 A. As discussed above, the Company's proposal provides a more equitable rate solution for
23 customers who install net metering facilities. The proposed rate design addresses
24 requirements of this proceeding by offering a solution that minimizes cost shifting, and
25 achieves the statutory goals of providing reasonable opportunity for electric customers to
26 invest in distributed generation and receive fair compensation for such generation.

1 Customers who install DG behind their meter have characteristics and interests that are
2 different than traditional customers, yet have the same overall requirements as customers
3 without DG. While customers with DG have the ability to generate some of their energy
4 needs, they place the same demands on our delivery system as customers without
5 generation and receive electric service within the same classes as other customers.
6 Accordingly, the Company has based its proposal on currently approved revenue
7 requirements and rates and charges in each class, based on actual purchases. Fairness
8 requires that these customers pay their share of the Company's revenue requirement, and
9 that they be compensated only for the actual value of any excess wholesale energy they
10 generate. While this is an initial rate design, the Company anticipates future review and
11 potential change to rate design based on characteristics of customers who install DG
12 prospectively.

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

14 A. Yes.