

Testimony Before the Committee on Energy & Technology

Concerning

S.B. No. 9 AN ACT CONCERNING CONNECTICUT'S ENERGY FUTURE

Submitted by

John Humphries

Organizer, CT Roundtable on Climate and Jobs

March 1, 2018

Dear Members of the Energy and Technology Committee:

I am submitting this testimony to address two provisions of Proposed S.B. No. 9, An Act Concerning Connecticut's Energy Future.

I support the provision in this bill that would require Connecticut to update and extend its Renewable Portfolio Standard (RPS), but I strongly oppose the provision that would eliminate net metering for residential solar customers.

Renewable Portfolio Standard

I urge the committee to support an expansion of the RPS to at least 40% by 2030. As a member of the Governor's Council on Climate Change (GC3), I participated in discussions that led to a unanimous recommendation of an aggressive emissions reduction target for 2030 that will help ensure Connecticut achieves the goal of an 80% emissions reduction by 2050, as mandated by the Global Warming Solutions Act. The proposed expansion of the RPS to 40% by 2030 is the minimum required to meet that interim emissions reduction target in 2030.

Compliance with a higher RPS will reduce emissions of harmful pollutants like nitrogen oxides, sulfur dioxide, and mercury, thereby providing substantial health benefits for Connecticut residents.

The RPS is also good for Connecticut's economic growth. The RPS helps drive investments in renewables by guaranteeing that there is a market for that energy and by helping those renewables become more competitive with fossil fuel-based energy, which currently has a market advantage.

According to a January 2017 report by U.S. Department of Energy, there are nearly 37,000 energy efficiency and solar jobs in Connecticut. With the recent request for proposals for offshore wind issued by the CT Department of Energy and Environmental Protection (CT DEEP), Connecticut is well-positioned to benefit from in-state jobs and investment in this emerging regional industry. Continued expansion of renewables in Connecticut will mean more employment opportunities and economic growth.

Net Metering

I strongly oppose the proposed elimination of net metering for residential solar customers, and I urge the committee to reject this aspect of SB 9.

Eliminating net metering would stifle growth in what has been a thriving sector of Connecticut's economy, employing more than 2100 people in the state. Rooftop solar allows customers to better

control their energy use and reduce costs. The continued expansion of distributed solar is critical for achieving the growth in renewables necessary to achieve our climate goals.

Net metering for residential solar is not expensive. CT DEEP's contention that net metering for residential solar is costly for other ratepayers is based on a fundamentally flawed cost analysis that ignores on-site consumption. As a residential solar owner, I have tracked the detailed production records of my system, and I know that 40% of the energy produced by my solar panels is consumed directly by my house and is completely invisible to the grid and to Eversource. That portion of my solar production does not appear on my bill and yields no direct compensation from Eversource in the form of billing credits. It simply reduces the amount of electricity that I purchase from the grid.

By imputing a direct cost to the portion of solar production that is consumed on-site, CT DEEP has grossly inflated their estimates of the "net direct ratepayer cost" associated with net metering. This fundamental flaw in their assumptions is embedded in the "Distributed Generation Cost Analysis," an appendix to the Comprehensive Energy Strategy (CES), and it therefore invalidates their forecasted savings from shifting to a "buy-all/sell-all" tariff structure. This flawed assumption is carried into the calculations and graphics in the CES itself, providing a misleading and inaccurate assessment of the impact of net metering on other customers. As a result of this basic misunderstanding and oversight, CT DEEP has not provided any credible evidence to back up their cost-shifting claim.

In conversations with staff at CT DEEP and with legislators, I have found that many people have difficulty understanding how net metering works and have never seen a net metering installation or a net metering bill. Therefore, I have attached an annotated photo of my residential system, along with an annotated copy of one of my monthly electricity bills.

Net metering for residential solar can be improved. CT DEEP's goals of transparency and sustainability can be achieved without eliminating net metering altogether. One alternative path is to focus just on the excess energy exported to the grid, what Vermont's program calls "Net Excess Generation". This reform does not require any changes in infrastructure and can be achieved solely with a change in billing. The legislation should direct the Public Utilities Regulatory Authority (PURA) to conduct a proceeding to determine the appropriate tariff or credit to compensate residential solar owners for the excess energy exported to the grid.

Finally, I wish to address the provision that would require distributed generation systems to be "sized so as not to exceed the load at the customer's individual electric meter." To achieve our climate and RPS goals, we need to take advantage of every opportunity to expand renewables. We must encourage homeowners to convert to electric heating, and we need to encourage on-site storage and charging an expanding fleet of electric vehicles. So we can expect residential electricity use to increase over time, and we should not artificially suppress that growth by limiting the size of distributed generation systems. And if PURA is establishing a new tariff structure for exported excess energy, then the additional purchases of distributed generation will be sustainable.

Thank you for this opportunity to submit testimony concerning SB 9, which would strengthen Connecticut's Renewable Portfolio Standard and thereby help to meet our state's climate goals while fostering local job creation and improvements in public health.

Respectfully submitted,

John Humphries

14 Tremont Street, Hartford, CT (john@ctclimateandjobs.org; 860-216-7972)

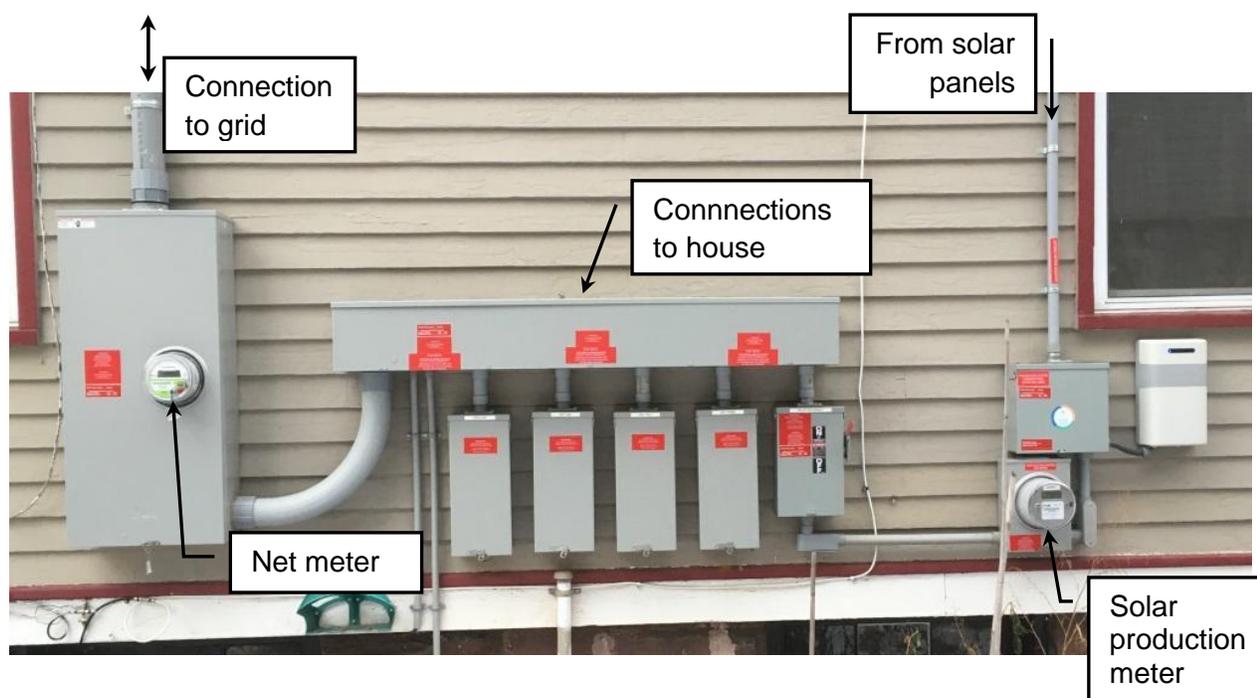
Net Metering for Residential Solar

The system pictured below is for a 3-family house with 9.66kW of solar on the roof supplying power to the whole house. All three apartments are on the same meter (one Eversource account).

The solar production meter tracks the total production from the solar panels in real time (recording/reporting instantaneous power and cumulative production at 5-minute intervals).

Solar power first satisfies any demand from the house. Any excess energy is exported to the grid through the net meter.

The utility's net meter tracks (1) excess solar energy exported to the grid, and (2) any energy consumed from the grid. Again, this data is recorded in real time.



There are 3 possible "states" for the system at any given moment:

- Parity: At any moment that the solar array's output is equal to the demand from the house, all production is consumed on-site and no energy is flowing through the net meter to or from the grid.
- Consumption exceeds production: At any moment that the solar array's output is less than the demand from the house, all production is consumed on-site and the rest of the demand is satisfied by energy imported from the grid to the house through the net meter.
- Production exceeds consumption: At any moment that the solar array's output is greater than the demand from the house, the excess production is exported to the grid through the net meter.

0006038

EVERSOURCE

JOHN W HUMPHRIES

Statement date: Oct 17, 2017
Customer name key: HUMP

Due Date	Total Amount Due
Nov 14, 2017	\$83.62

Account number:

Contact InformationEmergency: 1-800-286-2000 (anytime)
Web Site: www.eversource.com
CustomerServiceCTElectric@eversource.com
Pay by Phone 1-888-783-6618**Residential customers:**

Customer Service: 1-800-286-2000

Your electric supplier isEversource
P.O. Box 270
Hartford, CT 06141-0270**Residential Generation Information**Standard Service Rate: 8.014¢/KWH
Term/Expiration: 6 mos until Dec 31, 2017To view supplier offers, visit the Rate Board at
www.EnergizeCT.com**Electric Account Summary**

Amount due on Sep 18	\$188.25
Payment Oct 13	-\$188.25
Balance Forward	\$0.00
New Charges/Credits	
Electricity Supply Services	\$29.97
Delivery Services	\$53.65
Total new charges	\$83.62
Total amount due	\$83.62

The "Total amount due" must be received by **Nov 14, 2017** to avoid a 1.00% late payment charge.**Detail for Service at:**

HARTFORD CT 06105

Service reference: Billing cycle: 12

Your meter reading for meter #

For billing period: Sep 18 - Oct 17 (29 days) Next read date on or about: Nov 15, 2017

Actual reading on Oct 17, 2017 purchases	8235
Actual reading on Sep 18, 2017 purchases	- 7381
Billed usage	= 854

imported from grid 

Please allow 7-10 business days for your payment to post.

Remit Payment To: Eversource, P.O.Box 650032, Dallas, TX 75265-0032

(continued on next page)

Make your check payable to Eversource. Please consider adding \$1 for Operation Fuel. To add more visit www.eversource.com

EVERSOURCE

Account Number

Statement date

Total amount due

Amount Enclosed

Oct 17, 2017

\$83.62

The "Total amount due" must be received by Nov 14, 2017 to avoid a 1.00 % late payment charge.

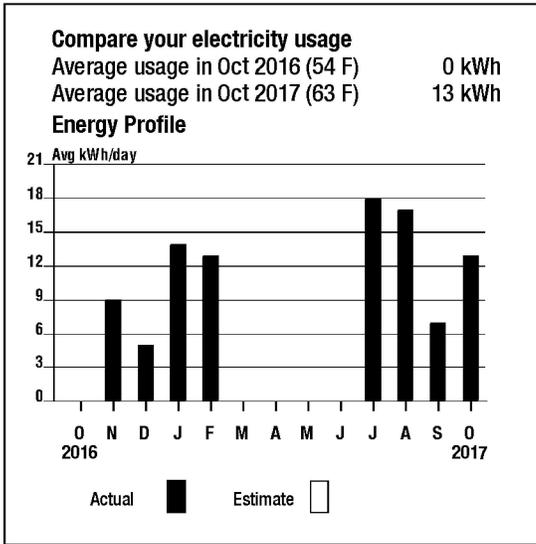
JOHN W HUMPHRIES

HARTFORD CT 06105

Eversource
PO Box 650032
Dallas, TX 75265-0032

5182218701944 0000083629 0000083629

Account number:



Your meter reading for meter #

For billing period: Sep 18 - Oct 17 (29 days) Next read date on or about: Nov 15, 2017
 Actual reading on Oct 17, 2017 sales 6191
 Actual reading on Sep 18, 2017 sales - 5711

Billed usage = 480

excess production exported to grid

Generation Detail	STANDARD SERVICE	
Generation Srvc Chrg**	374.00KWH x \$0.080140	\$29.97
Subtotal		\$29.97

Total solar production for this period was 901 kWh (as recorded by my solar production meter).

Total per kWh charges (see next page) = \$0.1719/kWh

My total savings = \$0.1719/kWh * (480 kWh exported + 421 kWh direct consumption)
 = \$0.1719/kWh * 901 kWh = \$154.88

Total compensation for solar production that appears on this bill
 = \$0.1719/kWh * 480 kWh = \$82.51

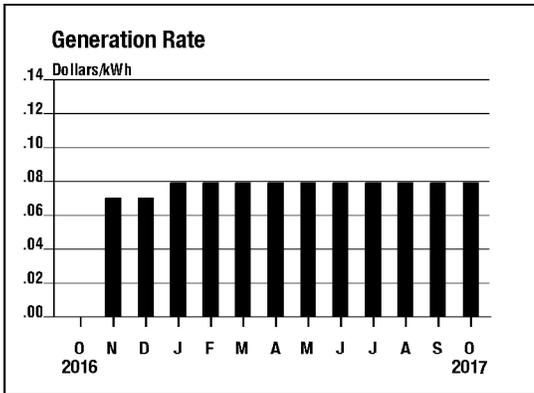
Compensation per Total Production
 = \$82.51 / 901 kWh = \$0.092/kWh = **9.2 cents/kWh (Direct Cost to Ratepayers)**

Please allow 7-10 business days for your payment to post.

Remit Payment To: Eversource, P.O.Box 650032, Dallas,TX 75265-0032

(continued on next page)

Account number:



Historical generation rate information will be added to this graph each month, providing you with 13 months of information over time.

Delivery Services Detail

Transmission Chrg	374.00KWH	x	\$0.031600	\$11.82
Distr Cust Srvc Chrg				\$19.25
Distr Chrg per kWh	374.00KWH	x	\$0.034670	\$12.97
Revenue Adj Mechanism	374.00KWH	x	\$0.001360	\$0.51
CTA Chrg per kWh	374.00KWH	x-	\$0.000080	-\$0.03
FMCC Delivery Chrg	374.00KWH	x	\$0.010770	\$4.03
Comb Public Benefit Chrg*	374.00KWH	x	\$0.013210	\$4.94
Distribution Adj Chrg***	374.00KWH	x	\$0.000420	\$0.16

DISTRIBUTION RATE: 001

Total Delivery Charges	\$53.65
Calculation of Carry Fwd kWh	
Current Sales kWh	480
plus 0 Prev Carry Fwd Sls kWh	
minus Purchase kWh	854
= 0 New Carry Fwd Sales kWh	
Net kWh Billed	374
Subtotal	\$53.65

Explanation of your charges

*The Combined Public Benefits Charge represents a combination of three charges formerly known as: Conservation and Load Mgmt Charge, Renewable Energy Investment Charge, and Systems Benefits Charge. This charge also includes the Conservation Adjustment Mechanism approved by the Public Utilities Regulatory Authority in Docket No. 13-11-14.

**Effective January 1, 2007, the Generation Services Charge (GSC) and the Bypassable Federally Mandated Congestion Charge (BFMCC) have been combined into the "GSC Charge" listed in the Supplier Services section of your bill. The GSC reflects all of the cost of procuring energy from Eversource wholesale suppliers. The BFMCC portion of this line item is -\$0.0001/kWh. If you multiply this BFMCC rate by the number of kWhs on your bill, you can calculate the dollar amount associated with the BFMCC.

***Distribution Adjustment to be collected over 24 months beginning December 1, 2015, as a result of an accumulated deferred income tax adjustment.

Please allow 7-10 business days for your payment to post.

Remit Payment To: Eversource, P.O.Box 650032, Dallas,TX 75265-0032