

NEW ENGLAND RATEPAYERS ASSOCIATION



**REBUTTAL TESTIMONY OF
Michael Harrington**

**New Hampshire Public Utilities Commission
Docket Number DE 16-576**

Q. Please state your name and address.

A. My name is Michael Harrington and I live at 82 Garland Road in Strafford NH.

Q. Please provide your education and business background

A. I have a Bachelor of Sciences degree in Nuclear Engineering from UMASS-Lowell. I spent 25 years working in the power generation field. I held various engineering and management positions at the Seabrook Nuclear Power Plant. In 2000 I was elected to the New Hampshire House of Representatives and served four years on the Science, Technology and Energy Committee. Starting in 2004, I spent nine years at the New Public Utilities Commission serving two non-concurrent terms as a Commissioner and as the Senior Regional Policy Advisor. During this time, I was highly involved in the New Hampshire and New England electric markets and served as New Hampshire's Manager for the NESCOE (New England States Committee on Electricity). My presence in this docket is as an advisory board member to the New England Ratepayers Association.

Q. What is the purpose of your testimony?

A. I offer this testimony in response to initial pre-filed testimonies of other intervenors in this docket.

Q. Should distributed generators be compensated at full retail rate for electricity exported to the distribution system?

A. No. On page 4 of Paul Cherlick's pre-filed testimony on behalf of the Conservation Law Foundation he states that *"Customers should receive the same incentives and compensation to*

providing renewable energy to the system that they receive for reducing their loads.” This statement would imply that somehow the energy supplied to the grid is stored and thus “banked” for credit at a later date. The reality is that the grid does not store the excess electricity produced and supplied to the grid by distributed generators. This position is supported on page 18 of Thomas Beach’s testimony on behalf of The Alliance for Solar Choice (TASC), when he states that *“Net metering does not involve the storage of electricity, or energy in any form. This idea is one of the common myths of net metering...When the NEM customer is a generator, exporting power in excess of onsite load, as a matter of physics that generation is consumed by nearby customers. In no way is the power stored for later use.”* Credits for excess generation should not be banked for full retail credit at a later date as the power is immediately used by a consumer in the same manner that it would be if it was provided by any other generator. Also, when a DG customer is exporting electricity to the distribution system it is acting as a generator. In his testimony for TASC (page 14, para. 2) when speaking of the exchange of exported electricity between a distributed generator and a utility that *“this transaction is no different than when the distribution utility receives power from any other type of generator—the generator is not responsible for and does not have to pay to deliver the power to the utility’s other customers”*. We agree with this assessment and would note that proponents of net metering can’t own both sides of the argument when it comes to whether or not they should be treated like any other generator. We pay generators the LMP. We do not provide any additional compensation for possible transmission or distribution cost savings or “externalities”. When one acts like a generator, one should be paid like a generator. Because of this, the distributed generator should receive full retail credit for power consumed onsite, but

excess generation should be compensated at the Real-Time Locational Marginal Price (LMP) in the most granular way possible relative to time and location of production.

Q. Does that fact that intra class cost-shifts are inherent in utility rate-making justify supporting a net metering tariff that continues to shift costs from participants to non-participants?

A. No it doesn't. Many of the intra-class costs shifts (rural v. urban, seasonal, etc.) are complex and in many cases, are unavoidable. Cost-shifts that result from retail net energy metering are not complex, easy to identify and are entirely avoidable. It is fair to say that continuing with an avoidable cost-shift is both unjust and unreasonable. Additionally, this cost shift is from those who can afford the high initial costs of net metered solar installation to those who cannot. There is simply no justification for having a customer living in an apartment, a mobile home or a small house paying a higher electric bill to subsidize the bill of a customer living in a large house with large electric loads from things such as central air conditioning and swimming pools.

Q. Are current markets capable of compensating electricity consumers who net meter?

A. Yes. The wholesale energy markets can provide proper compensation to excess electricity fed to the grid from distributed generators. The Locational Marginal Price (LMP) accounts for energy (which includes the cost of carbon dioxide emissions via the Regional Greenhouse Gas Initiative), line losses and congestion; the capacity markets compensate generators for their

ability to provide electricity when the grid needs the additional capacity in times of stress; and to the extent that DG provides voltage support there is a market for that as well.¹ We recognize that there is a level of sophistication required to take advantage of these markets and implementation may require aggregators or some equivalent for participation, but that should not be used as an excuse to use an administratively set price in lieu of existing markets. We must also remember that compensation for customers who net meter at the LMP comes without the obligations that generators have. There is no obligation to bid into any market nor is there any obligation at any time to provide electricity to the distribution system. They can stop exporting at any time they choose regardless of system conditions.

Q. Does retail net metering provide a Fuel Price Hedge?

A. No. First, you would have to know the marginal fuel that it displaces—if it is hydro then there is obviously no fuel price hedge. Secondly, the cost of the unit of DG displacing any unit of electricity provided from an alternative energy source would have to be less costly than the unit it is replacing—unlikely at the retail rate (especially given that the average LMP for 2015 was around \$41/MWh vs. a retail rate of around \$170/MWh). Third, a fuel price hedge only has significant value when a generator is providing electricity at a day/time of high pricing². For New England, the most extended period of time to provide that type of price hedge is winter afternoon/evenings which are periods of the year when solar is least productive.³ Thus, a “solar v. natural gas hedge” or a “solar v. coal hedge” is least impactful at the time when you

¹ https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_2/oatt/sect_ii.pdf Schedule 2, Section IV

² See Attachment ISO NE RT LMP Data is sorted from most-expensive to least expensive hours. This data clearly shows that highest cost hours are at times when solar generation is either non-existent or minimal

³ See Attachment: ISONE 2015 Solar Generation Daily. The data is sorted from highest to lowest solar generation days

most want it. Ashley Brown, in the *Valuation of Distributed Solar: A Qualitative View*, ably refutes the concept of solar DG providing a fuel hedge.⁴

Q. Do you believe that “external” benefits should be considered in evaluating a new net metering tariff?

A. No, I do not. As we mentioned in our initial filing externalities are already covered in a number of public policy initiatives: federal investment tax credits, ratepayer-financed Renewable Energy Certificates (RECs) from Renewable Portfolio Standards (RPS), Renewable Energy Fund rebates again funded by ratepayers for Alternative Compliance Payments (ACPs); payments by generators for carbon dioxide emissions via the Regional Greenhouse Gas Initiative (RGGI) which are factored into the LMP; as well as enabling legislation providing local property tax exemptions to DG owners. Also, built into the LMP and the Forward Capacity Market clearing price are the cost of other government mandated rules such as pollution control systems on fossil fuel generators and nuclear waste disposal. It is incumbent upon solar advocates to show that existing external support through these programs is insufficient relative to the quantifiable benefits that solar provides. We do not believe that any of the testimony filed to date has accomplished this.

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<http://www.ksg.harvard.edu/hepg/Papers/2014/12.14/Brown%20%20Valuation%20of%20%20Distributed%20Solar%20%2011.14.pdf> Section VII

Q. Do you believe that the Commission should consider other benefits to the grid?

A. No, the Commission's focus should be entirely on the value of the electricity at the time and location it is produced, which represents the true market value of the electricity to consumers. The Commission should also abolish the "banking" of electricity credits to be used at a later date. It is well-known that the grid does not provide storage of this electricity and is one of the most egregious practices of existing net metering policy. However, if the Commission is going to consider other purported benefits to the distribution and/or transmission system, reactive power, DRIPE, etc.; then, as we mentioned in our initial filing, the Commission should also consider potential costs such as increased capacity costs; increased costs because of the need for more fast-start combustion turbines; higher reserve margins; and load forecasting costs as a result of incorporating more DG and intermittent resources to the grid. Most importantly it is the responsibility of advocates for retail net energy metering to quantify the benefits they provide above and beyond other alternatives—meaning they must prove to be the lowest cost option. Only through that calculation can there even be consideration of additional compensation; and we do not believe that supporters of retail net energy metering have succeeded in providing a quantitative analysis at this time.

Q. Is there any anecdotal evidence that an aggressive net metering policy has led to lower electricity rates to all consumers?

A. No. In fact, Massachusetts, which has one of the most aggressive net metering and solar subsidy programs in the nation⁵, and has seen its installed solar capacity increase from 361.55 MW at year-end of 2013 to 947.10 MW by year-end 2015 has also seen its residential retail electricity prices increase 17% from 16.38 cents per kilowatt-hour⁶ in January of 2014 to 19.17 cents per kilowatt-hour through September of 2016⁷. During a similar time-frame wholesale electricity prices dropped 27% from \$56.06/MWh in 2013⁸ to \$41.00⁹ in 2015 and while final 2016 wholesale prices numbers have yet to be released they will likely be near 2015's numbers.¹⁰ Other states like Arizona and California who also have aggressive solar policies have seen their electricity costs increase during that time (Arizona increased from 10.92 cents to 12.77 cents and California increased from 16.64 to 18.22). We acknowledge that his evidence is anecdotal, but these numbers should be considered when claims of savings to all ratepayers are made.

Q. Does this conclude your testimony?

A. Yes.

⁵ <https://solarpowerrocks.com/2016-state-solar-power-rankings/>

⁶ http://www.eia.gov/electricity/monthly/current_year/march2014.pdf Table 5.6.A.

⁷ http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_06_b

⁸ https://www.iso-ne.com/static-assets/documents/nwsiss/pr/2014/2013_price_release_03182014_final.pdf

⁹ https://www.iso-ne.com/static-assets/documents/2016/05/20160526_amr15_release_final.pdf

¹⁰ http://www.masslive.com/news/index.ssf/2016/06/iso_new_england_wholesale_powe.html