Patricia Martin
17 Farrar Road
Rindge, NH 03461
Pmartin2894@yahoo.com

Debra Howland, Executive Director and Secretary
NH Public Utilities Commission
21 S. Fruit Street – Suite 10
Concord, NH 03301
September 16, 2015

Re: IR15-296 Grid Modernization

Dear Ms. Howland,

Thank you to the NH PUC for inviting public comment on IR15-296.

I offer my comments as a consumer, chair of my local Energy Commission, and a retired electrical engineer. My systems engineering career was spent chiefly in the design and development of portable, battery operated computer systems.

My understanding is that the comments submitted will be discussed in technical sessions to determine the scope of the investigation.

In preparation for these comments, I read the NH 10 Year State Energy Strategy and the June 19, 2015 Least Cost Integrated Resource Plan from Eversource. I hope that the PUC investigation will consider prioritizing the following topics:

1.) Research and Development Investment by Utilities – How can NH utilities leverage the work being done in other States on grid modernization?

The States of New York and Illinois are deeply engaged in Grid Modernization. I would respectfully request that the Commission share this work with stakeholders in one or more presentations in order to launch a similar initiative for developing a "vision" of a modern New Hampshire Grid.

Links to the whitepapers and work being done in New York can be found here:
http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument
And here: http://nyssmartgrid.com/about-us/priority-initiatives/
The membership of the NYS initiative is described as,
"The Consortium is a unique public-private partnership by virtue of its structure. It is made up of major utilities, global-scale technology developers, leading academic and research institutions, and government and quasi-government entities."

We should also consider what percentage of utility operating budget is dedicated to R&D in this rapidly changing and challenging energy market. Utility engineers should have opportunities to participate in organizations dedicated to the research and study of grid modernization; such as the Institute of Electrical and Electronic Engineers, Smart Grid Working Group. http://smartgrid.ieee.org/resources
In addition to revamping pricing methodology to support energy efficiency, energy storage and distributed generation, the utilities also need to become much more engaged and proactive in building a modern grid.

In the last legislative session, utility experts testified against raising the "cap" on net metering for solar PV. Their testimony denied the immediacy of the caps being reached. Only a few months later, it is abundantly clear that solar installations are already exceeding the caps for most of the utilities.

The State Energy Strategy addresses the lack of momentum in support of renewable and distributed generation on page iv, "Frequent changes to the RPS in recent years have disrupted the market's development, and the Business As Usual forecast (see Appendix A) projects that New Hampshire will not meet its RPS goal of 25% by 2025. To realize the full economic and security benefits of in-state energy, the State must to recommit to a strong and stable RPS. As noted by the National Renewable Energy Laboratory, "RPS targets should be stable, ramp up steadily over time and not be subject to sudden or uncertain shifts."6

In researching pricing mechanisms, the PUC and utilities should factor in an increase in the R&D budgets for the utilities as a necessary means of moving these organizations in a direction that allows them to fully embrace new realities in the environment and the markets, instead of simply fighting change.

2.) Demand Response – How will New Hampshire deal with the installation of brand new AMR meters in 70% of the residential market?

On page 19 of the State Energy Strategy, the financial benefit to ratepayers for Time Of Use (TOU) metering programs is clear, "The Business As Usual forecast (see Appendix A) shows a projected 49% increase in wholesale electricity prices in the absence of policy changes. Fortunately, peak load reduction is one of the most promising applications for grid modernization, as demonstrated by programs around the country. A pilot program by Connecticut Light & Power that utilized peak time pricing in conjunction with Smart Grid technology demonstrated peak reductions of up to 28.5% in the residential sector and 9.4% in the commercial sector,52 and a program by Oklahoma Gas & Electric (OGE) saw a 59% reduction in peak demand.53 A national review conducted in 2009 saw an average reduction in peak of 13-20%.54 Reducing peak load also has air quality benefits as all generators, including the dirtiest ones, must run to meet peak need."

Please address the issue of how the State can recover from Eversource deploying 500,000+ AMR meters to New Hampshire customers. These meters restrict 70% of electric ratepayers from benefiting from Time Of Use rates. While it is true that the NH Legislature passed a law requiring utilities to receive customer permission before installing Smart Meters, why did Eversource not ask permission instead of going forward with the AMR meters? What plans do they have to fix this problem? How much did the AMR meter program cost ratepayers and what will it cost per user to convert to Smart Meters?
It is worth noting that Eversource lists TOU pricing in its 2015 NH Electric Rates:

Rate R-OTOD, Residential Time-of-Day Service
Available to customers living in individual residences and apartments – varies by time of day.
Off-peak hours: 8 p.m. to 7 a.m. weekdays; all day weekends and holidays.
- Customer Charge (per month): $29.61
- Distribution Charges
o On-Peak Hours (per kWh): 13.299 cents
o Off-Peak Hours (per kWh): 0.194 cents
- Transmission Charges
o On-Peak Hours (per kWh): 1.957 cents
o Off-Peak Hours (per kWh): 1.277 cents
- Stranded Cost Recovery Charge (per kWh): 0.131 cents
- System Benefits Charge (per kWh): 0.330 cents
- Electricity Consumption Tax (per kWh): 0.055 cents
- Energy Charge (per kWh): 8.98 cents

How many Eversource customers have access to or have contracted for these rates?

3.) Establish an EERS to help guide the “sizing” of the system and threats to fuel security. Although this docket is focused on grid modernization, the use of energy efficiency as the first option for reducing baseload and peak demand should be linked to everything that is done in terms of grid modernization.

From my perspective, allowing natural gas utilities to use energy efficiency dollars to expand the market for home heating should be re-examined.
On page 6, in the section, 1.5 RESOURCE POTENTIAL AND GAP ANALYSIS of the NH 10 Year State Energy Strategy, "Conversion to natural gas is economic for those on an existing main, and trucked CNG will provide opportunities for natural gas to off-main industries." Yet, on page 34 of the section on improving consumer financing, "Be technology and fuel neutral - let the market and consumers decide which technology and fuel works best."

These statements seem to be in conflict. The policy allowing energy efficiency funding to be used to subsidize customer conversion from one fossil fuel (oil) to another (natural gas) based on lower cost and presumed “cleaner” emissions is not fuel neutral. In fact,

oil and gas prices fluctuate and the methane emitted in producing and transporting natural gas is a far more potent greenhouse gas in the short term than the 50% greater carbon emitted burning oil.
Energy Efficiency funding should never be used to expand the fossil fuel markets.

In summary, I applaud the Legislature and the PUC for opening this investigation. There is much to discuss. I have only touched on three issues that I feel will have the most impact. I look forward to participating in the investigation as a consumer and appreciate the welcoming attitude of the PUC in inviting public participation.

Sincerely,
Patricia A Martin
17 Farrar Road
Rindge, NH 03461