

**From:** Springer, Darren [Darren.Springer@state.vt.us]  
**Sent:** Friday, March 06, 2015 8:11 PM  
**To:** Rebecca Ellis  
**Subject:** RE: Distributed Energy and Energy Transformation Aspects of H-40

More responses below for your reading pleasure!

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**From:** Rebecca Ellis [rellis@leg.state.vt.us]  
**Sent:** Friday, March 06, 2015 2:35 PM  
**To:** Springer, Darren  
**Subject:** Fw: Distributed Energy and Energy Transformation Aspects of H-40

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**From:** Willem Post  
**Sent:** Monday, March 02, 2015 5:27:51 PM  
**To:** Tim Ashe; Claire Ayer; Becca Balint; Philip Baruth; Joe Benning; Christopher Bray; John Campbell; Brian Collamore; Ann Cummings; Dustin Degree; William Doyle; Peg Flory; Jane Kitchel; Virginia Lyons; Mark MacDonald; Norman Mcallister; Richard McCormack; Alice Nitka; Anthony Pollina; John Rodgers; Richard Sears; Michael Sirotkin; Diane Snelling; Robert Starr; Jeanette White; David Zuckerman; Aaron Rosenbluth; preservethewellfleetilove@gmail.com  
**Subject:** Distributed Energy and Energy Transformation Aspects of H-40

All,

H-40; RESET has three major aspects:

1) RE Systems (mostly the familiar systems on ridgelines and in meadows, etc.) ***DS - as noted before, nothing in Tier One would guide a utility to prudently invest in new wind or solar projects when the ACP is a penny per kilowatt hour and there are RECS on market for a tenth of that price.***

2) Distributed Systems (mostly rooftop, etc.)

3) Energy Transformation (not sufficiently defined in H-40)\* ***DS - Tier three is clearly defined as projects that reduce fossil fuel use and GHG emissions for customers, and is defined in a technology neutral way to accommodate a variety of approaches. One size does not fit all, and utilities should have opportunity to partner and innovate on different projects.***

\* Prior to voting, a significant, clarifying rewrite of Item 3 would be required.

I am surprised Klein's committee members and the House members did not notice the vagueness of ET before voting on H-40.

Also subsidies, penalties, surcharges, fees, feed-in tariffs, etc., should be more clearly spelled out, instead of obliquely hinted at. ***DS - There are no new subsidies, no surcharges, no fees, and no feed-in tariffs in H. 40. Period. The only thing there is, is a requirement for utilities to own a certain quantity of RECS and meet their Tier Three goal, and cost caps at how much they can prudently spend in each Tier to do so.***

My prior memo covered Phases I and II of Item 1. This memo covers Items 2 and 3.

Willem

#### **H-40 MANDATES DISTRIBUTED RE TO BE 10% OF UTILITY RE SALES AT END 2032**

H-40 mandates distributed renewable energy to go from 1% of utility RE sales, or 30,800 MWh, at end 2017, to 10%, or 420,000 MWh at end 2032, and increase of 389,200 MWh over 15 years.

That would require ADDING, in 15 years,  $389,200 \text{ MWh} / (8,760 \times 0.14) = 317,000 \text{ kW}$  of installations, equivalent to (63,470) 5 kW distributed systems, at a capital cost of  $317,000 \text{ kW} \times \$3,500/\text{kW} = \$1.11 \text{ billion}$ . It would be a major challenge to properly locate such a large number of systems, unless many systems are greater than 5 kW.

***DS - I have covered much of this before, but I would note Tier 2 sets a project size cap of 5 MW, not 5 kW. It seems Mr. Post is trying to assume utilities will meet the requirements with only the smallest and least economic projects available. In addition to extent there are capital costs to build 5 kW size systems, those are net metering and the capital costs are borne by the private customer installing the system, not the utility. The utility will be getting net metering RECs at no additional cost under H. 40. I could quibble with his capacity factor assumption too.***

About \$300 million is estimated for grid upgrades. The estimated total capital cost would be at least \$0.17 b Wind + \$1.91 b Solar + \$0.30 b Grid + 1.11 b Distr. = \$3.49 billion by end 2032, or 3.49 b/15 = \$233 million PER YEAR for 15 years. **H-40 is SPEED on steroids!**

***DS - I believe this is a made up number. I have not heard this from any other person. In addition, as noted previously, his assumptions about spending on solar and wind are WRONG, and based on idea that utilities will meet Tier One with solar and wind in Vermont, when they will in actuality be able to meet it with a combination of already contracted for in and out of state hydro, and RECs available on the market for a tenth of a penny per kilowatt hour. He again assumes only the most wildly expensive scenario, and in this case the cost caps in the bill would prevent this scenario from ever actually happening.....***

### **H-30 MANDATES ENERGY TRANSFORMATION**

H-40 mandates energy transformation, ET, as follows:

% of total utility sales at end of 2014\*.....Unknown?

2% of total utility sales at end 2017.....56,000 MWh

12% of total utility sales at end 2032.....672,000 MWh

Increase of ET+ .....616,000 MWh. This is not a trivial quantity. It will affect many tens of thousands of households.

\* No qualifying ET quantities were provided for existing ET at end 2014!!

+ Over 15 years, or 41,067 MWh/yr.

After reading the H-40 text, it was not clear what utilities and ratepayers would be required to do to effect “energy transformation”. Some examples of this “innovation” would have been useful. What would an ET program consist of? Why is the H-40 description of the ET aspect so vague? With such vagueness, legislators would have no idea what they would vote for. Was the vagueness on purpose? Energy transformation does have a nice “feel-good” aura to it.

### **GENERAL COMMENTS**

To make capital outlays at those levels for 15 years, and have all systems in operation, in Vermont, by the end of 2032, and pay for the expensive RE, would be a major additional headwind for Vermont’s fragile economy and environment.

In addition to diverting scarce capital from more useful investments, it would be misused to destroy ridgelines and meadows, and to produce RE at about 3 - 5 times New England wholesale prices, which have averaged about 5 c/kWh for the past 5 years.

***DS - According to Energy Information Administration the New England wholesale price in 2014 was over 7.5 cents per kilowatt hour, not 5 cents, and that makes New England the most expensive wholesale electric market in the country, not to mention utility capacity obligation costs, transmission costs, and distribution costs on top of that 7.5 cents. In that context, you might want to have renewable energy projects sited near customers like solar (now under 12 cents per kilowatt hour delivered), wind (around 9 cents per kilowatt hour delivered in VT), and hydro (4 cents per kilowatt hour delivered).***

A major headwind for Vermont's weak, low/near-zero-growth, economy, with mostly already-struggling households, whose real incomes have DECLINED since 2000, and with low/near-zero-profit businesses, all trying to make ends meet, while paying more and more, for an ever-growing, ponderous, expensive government sector that acts as a wet blanket on the shrinking, hollowed-out private sector.

Because H-40 abolishes the expensive, dysfunctional SPEED program does not mean the lucrative SPEED feed-in tariffs disappear. Most RE projects could not exist without them.

***DS - Vermont has no feed-in tariff. The Standard Offer is a capped program that offers a market based procurement of 5 megawatts per year of solar, rising to 7.5 megawatts soon. A feed-in tariff is a fixed price contract offer that is typically widely available, not capped to the first two or three projects selected in a given year. Germany has a feed-in tariff. Vermont does not.***