

Promoting renewable energy in Vermont: a view from the ground

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View from the trenches of a town energy committee – the good news

- The first Waterbury/Duxbury Solar Year:
 - Launched in April 2012 at the Waterbury LEAP Fair, aim was to double community solar in one year
 - We created a photo display, held a summer solar celebration, wrote articles, held a solar for businesses meeting, held open houses, began discussions with select boards and school boards
 - Within 11 months, we had doubled the total installed solar in our two towns
- The second Waterbury/Duxbury Solar Year:
 - Emboldened by our success, we launched the second Waterbury/Duxbury Solar Year in April 2013, and are on track
 - There have been many new residential installations throughout the year, the vast majority of which are modest, middle-income homes; many are low-income
 - Last month we celebrated with a ribbon cutting of the state's largest solar school array in Duxbury
 - We've flipped the switch on a new 32-kilowatt array on our fire house.
 - There are plans for a 500-kilowatt array in Waterbury Center, a 150-kilowatt community array, and several other large projects for early this year
 - We are fully on track to quadruple our 2012 installed solar capacity in mid-2014
- The numbers:
 - In 2012 we had 375 kilowatts of installed community solar capacity; in 2013 we had 750 kilowatts, and in 2014, we will have 1500 kilowatts of local, renewable community solar, equivalent of more than one full solar panel for every single one of the 6700 men, women and children who live in our two towns.
 - To put these numbers in perspective, Duxbury has the highest per capita solar in Vermont, and Waterbury has the third. Our two towns have 3.5 times the state's average, in a state that already ranks 5th in the nation. If our two towns were compared with other states, we would be leading Arizona by more than 50 percent, and we would be leading the nation by a margin of more than 12 to one. In some parts of North Duxbury, that figure is closer to 25 times the national average.

The other side of the story

- Current renewable energy capacity versus current energy demand:
 - Duxbury uses 1,500 MWh, and produces roughly 5% of its total electricity from local renewable energy. But if you've ever been to Duxbury, you realize that there's not much there – the two schools are the largest users in town, accounting for more than a third of our total electricity consumption.
 - Waterbury uses 60,000 MWh; the solar installations there account for only a fraction of 1% of the total use – heavy electricity users include Ben and Jerry's, Shaw's, Green Mountain Coffee Roasters, the Ice Center and many others
- Current rate of growth versus required rate of growth to meet our target of 20% by 2020 and 90% by 2050
 - If we added one new 500 kw project every year through 2050, we'd still be only a third of the way toward our goal; it would take us more than a century to get to the goal of 90%. This assumes that electricity use will remain flat, but we know that electric air heat pumps and electric vehicles are likely to radically increase demand in the coming decades.

The 2 largest constraints in expanding solar in Waterbury and Duxbury

- **The limited geography wall:** In order to host a 500 kw array, a parcel must be at least 4-5 acres, cleared, south-facing, relatively level, a non-wetland, and a non-floodplain, and within 500 feet of a 3-phase power line, and ideally has limited agricultural, recreational, scenic and development value. In other words, prime solar real estate – extremely rare to find.
- **The 3-phase power line wall:** Waterbury is relatively blessed with a decent infrastructure of 3-phase electric lines, size. Of the more than 31 miles of road in Duxbury, however, less than 2%, or roughly half a mile, of these roads have 3-phase power lines

along them. Of the 28,000+ acres and the hundreds of land parcels in Duxbury, there is precisely *one* 15-acre parcel that could currently host an array of 500 kw or larger because of these 3-phase power line limitations.

General reflections about the two bills:

1. I do not support these 2 bills as currently drafted, and believe they would bring a new level of uncertainty and confusion to the siting and permitting process of renewable energy across Vermont.
2. When combined with net-metering rules and requirements, these two bills create an undue burden on renewable energy projects, particularly community-scale solar. We are already struggling to find suitable siting for solar; adding additional requirements in permitting will only serve to further slow the adoption of renewable energy.
3. Both of these bills are very broad ranging, and it is unclear whether they apply equally to small-scale, mid-sized or industrial-scale arrays. There should be a clear cut off between 500 kw arrays and under, vs. large 2.2 mw speed projects.
4. Because of the ambiguous language in these bills, there is ample room for multiple and inconsistent interpretations, including by the Public Service Board, by municipal and regional planning commissions, and by “any particularized interest”
5. Given the broad scope of many of the components of these bills, there is ample room for unintended consequences. Although these are not fully clear, they do appear to trend toward slowing down the adoption of renewables, just when we should be ramping up.
6. Municipal town plans are revised every 5 years, and subject to the whims and vagaries of town politics, creating a climate of uncertainty for those who would invest in solar, including municipalities, schools and business owners.
7. At the same time, regional planning commissions remain ill-equipped, both financially and technically, to adequately provide any kind of regulatory role when it comes to siting renewable energy.

Specific recommendations:

If you do plan to move the bills forward, I recommend the following changes:

Bill S292

- P.3, line 2; Strike “on-site” – a large number of systems are not located on the owner’s premises
- P. 3, Line 5, either strike “site preparation for or” or modify by stating “significant site preparation involving the development of roads, or significant disturbance of soil”
- P. 4, Line 15-17 Add a clause exempting solar projects, or add a time element, such as a 5-year period. If the goal of this bill is to serve as a GHG accounting mechanisms, the most efficient mechanism to do so is not necessarily project by project, but rather by industry standards as a whole. Solar has a proven track record of a net carbon negative within 2 years, including delivery and installation carbon accounting. We should not subject every solar project to the additional burden of carbon accounting.
- P. 5, Line 5-8 The language in this section is widely open to interpretation. I suggest removing aesthetics, since this is so highly variable depending on the sensibilities of each person. Better still, this section should simply refer to existing considerations as part of the permitting process.
- P. 5 Line 15-18: Add clause exempting 500 kw sites and under.
- P. 2, Line 19: Strike “on-site”
- P. 6, Line 12-16, Strike “particularized interest” and “or other person” – this can be too widely interpreted, and can serve to shut down projects by introducing undue complications into the public review process
- P. 10, Line 2: Change text back to “due consideration”

Final thoughts:

- If the most active energy committee in the state of Vermont, in a town with the *highest* rate of solar adoption, in a state with 5th highest rate of solar adoption, is at almost a total impasse when it comes to siting renewable energy, and if the current trajectory of solar adoption has almost no chance of achieving the goals in the Comprehensive Energy Plan, then we must adopt policies that facilitate rather than inhibit the adoption of renewable energy.