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Public Service Department
Senate Committee on Natural Resources and Energy
Feb 19, 2016

Testimony re: S. 230, and particularly solar electric generation in the context of S.230

The 2016 Comprehensive Energy Plan informs my testimony, but I am not presenting on it today; I will refer to analyses we conducted for it, and am happy to come and talk about it some other time, but it goes beyond — far beyond — the questions addressed in S.230.

First: what's happening today with respect to the pace of solar PV development is driven by the (feared, but alleviated) Federal Investment Tax Credit (ITC) expiration and the net metering cap. The pace of deployment was much faster than anticipated, and the policy-adjustment process, wisely put in place in Act 99 in 2014, was simply a bit too slow (but really only a bit — 6 months faster and we would have hit it about right).

The pace of the last year, and the coming year, is faster than anticipated, faster than required by the RES, and faster than we really need to get to our long-term goals. That's why our net metering proposal lowers the payments, especially for large systems. The PSB will have a new draft of their rule very soon (we expect), and it may do the same. This should bring the pace down to a level that is more consistent with what we need now. We will need to accelerate again, but slowly, year over year, to reach 2050 goals, but we hope to have better planning in place by the time the pace again approaches the 2015-16 pace.

Regarding the total amount of solar we're planning for, the CEP considered two cases: 1500 and 2250 MW. These would have solar generating between 20% and 30% of the state's electricity, and 10-15% of the state's total energy, by 2050. This much solar would require 8,000 to 13,000 acres, at 7 acres per MW (after accounting for ~350 MW on residential rooftops). I understand you've heard some testimony with much higher numbers — this comes from different assumptions about what fraction of the mix will come from in-state resources and how much of that will be solar PV.

Using only solar PV would be nonsensical. In particular, it is nowhere near the least-cost solution, measured by economic, or economic plus environmental costs. It would mean peak generation that is 5 times above our summer peak demand and 10x over shoulder season peak. Imagine the transmission lines or the massive seasonal-level storage that would be required!

The RES from Act 56 requires 10% distributed generation by 2032. RES is measured using RECs. I know it's painful right now, that the net metering policy (in particular) we have in place was designed before the RES. With the significant decreases in PV system costs in recent years, this means that some projects are now able to get paid too much (19 cents from ratepayers, plus 4-5 cents from ratepayers in MA or CT) — thus our proposal to significantly lower the rate and

to explicitly address and reward RECs staying in VT to meet our goals¹. We believe that 3 cents, locked in for 20 years, will win out over 4-5 cents elsewhere today, but no guarantee of any sort for future years. We have heard from developers that the solar adder was very valuable in financing — you could literally take it to the bank. We believe the long-term, 3 cent value for RECs will similarly allow projects to be built or less. This will result in lower costs to ratepayers over time.

The RES puts us on a level playing field with other NE states regarding RECs. One of the choices when designing an RPS is whether to allow unbundled RECs. You chose, wisely, to match the rest of the region and allow RECs to trade separately from energy. That means that RECs are a commodity, and they will travel out of state, and into the state, just like milk or sneakers. I would want to see a Commerce Clause analysis before limiting what private citizens may or may not do with their property across state lines.

There will be a transition period — and it may be a decade or more — during which a significant fraction of the RECs generated in VT will be worth more elsewhere than they are here, and thus sold elsewhere. Depending on who is doing the selling, this will keep our rates down, allow more net metering savings to be shared with participating VT ratepayers, and (yes) allow some developers and financiers to make money. As the new NM program, and the RES generally, come into force, and more development happens in the new paradigm, with RECs flowing to the utilities, and retired by them, I expect that this disconnect will fade.

On interconnection and grid issues related to solar, and constraints.

- We are working with stakeholders to update the interconnection rule. It is crafted to be “future-proofed” so that it will automatically incorporate smart inverters and ride-through as soon as they are allowed by IEEE, UL, and the electric codes.
- Traditionally, in the utility world, the “cost causer” pays. S. 230 addresses socializing the cost of 3-phase line extension. I trust cost and market forces to get us the grid we need. Load will pay (as it always does), but we will pay the least, and not over-build.

Planning for meeting long-term goals:

- The RPC planning pilot has great promise.
- We could consider crafting RPC planning guidance as part of the CEP, the same way we have Integrated Resource Planning guidance to utilities. This would allow for consistency across time and between regions. In the meantime, we expect the plans developed by the RPCs under our contracts with them will be high quality and, once adopted, will be meaningful in the permitting process.

A few closing comments:

- On the Standard Offer: We asked the Board for a carveout of capacity for preferred sites this year. They didn’t feel they had the authority in the statute to do it. S. 230 addresses this, and I encourage you to keep a provision of this sort in the bill.

¹ The Board’s draft net metering rule, released after my testimony on February 19, reduces the value paid to customers who retain their RECs rather than increasing for those who transfer them; but the reduced amount should be thought of as the baseline, and the 6 cents in that draft rule as an incentive paid to the customer to help the state achieve its energy goals.

- Decommissioning: Be wary of requiring unnecessary cost (remembering that ratepayers will pay in the end)². Also, recognize that in many cases the best thing at end of life may be repowering the site, not returning it to greenfield state. Evergreen letters of credit are expensive, and would basically have ratepayers sending money to bankers for decades as assurance.

² The Board's draft net metering rule released after my testimony considers a 150 kW threshold for decommissioning requirements to kick in, which seems reasonable when you consider balancing project impacts with customer resources.