

SB191 State Energy Advisory Council (SEAC) Meeting Meeting Notes

Location: LOB 301

Date: April 21, 2014

Time: 1:30 to 3:30 pm

Council Members in Attendance:

- Meredith Hatfield, Director of the Office of Energy and Planning, SEAC Chair
- Amy Ignatius, Chair of the Public Utilities Commission
- Representative Charles Townsend
- Senator Martha Fuller Clark
- Mike Fitzgerald, DES, for Commissioner Burack

Other agency staff in attendance:

- Rebecca Ohler, DES
- Brandy Chambers, OEP
- Karen Cramton, OEP

1:35 Introductions & Approval of Notes from last meeting

1:40 Navigant Process Overview

Today is the last substantive meeting prior to the draft strategy being released; we will be discussing power generation options and grid modernization.

1:45 Power Generation

Residential/Commercial Scale Solar PV

- Limited development to date, ranked 31st nationally with 7MW; MA ranked 4th with 450MW
 - Fitzgerald – It might be more helpful to compare us to a similarly sized state, in terms of population.
- RPS solar requirement is set at a flat 0.3% for the entire life of the RPS
 - Sen. Fuller Clark—Do you have a recommendation for what the target should be changed to?
 - It is important to always consider cost implications of different options.
- Policy options range from market changes (SREC prices) to permitting
- Hatfield: Are the NetZero requirements in other states done through codes or incentives?
 - Ben: Mixed approaches depending on the state
- What's different in MA that created the 450MW?

- Ben: Overwhelmingly due to SREC pricing, though high electricity prices also play a role.
- Are there state tax policies as well?
 - Lisa: Yes, though those are decreasing.
 - Hatfield to Jack Ruderman: Initially solar did have an SREC premium, correct, but now it's the same as other Class I?
 - Jack: Yes, that was changed in legislation a few years ago. The other thing I would add is that MA has ambitious goals for solar, supported by legislation such as the Green Communities Act
- Public comment: we have a 27kW PV system at our offices, and the cost and difficulty of getting certified to participate in the REC market was a huge barrier
- Public comment: the public needs to be educated on the existence of RECs. True for businesses as well; some aggregators are able to sell in MA and NH.
- What's the annualized capacity factor on installed solar?
 - Lisa: About 15%

Utility Scale Solar

- Ben: Similar picture—in same REC class as small scale solar, there is room for much more economic solar development.
- Ignatius: You noted that there's a misconception that there's not enough sun for it to work, which calls for education and suggests that consumers aren't installing it. But does it also indicate that lenders may not be willing to lend for it?
 - Ben: Good question, a little chicken and egg, hard to pinpoint exact cause.
 - Lori Lerner: There seems to be a lot more marketing of it in MA.
 - One of the big drivers in MA is that the Governor is fully behind the initiative and has gone to state agencies and told them to make it happen. Those agencies are available to anyone who comes forward with a project, helping with the education and outreach and getting projects through.
- Clay Mitchell: lenders here aren't worried about the amount of sun in NH, they're worried about the inconsistency in the state policy and constantly fluctuating REC prices. Businesses need stability and consistency.
 - Hatfield: You could build PV here and sell the RECs to MA?
 - Only as regular RECs, not under the higher SREC carve out because the carve out (higher SREC price) is for in-state solar in MA.
- Dick Henry: MA REC value is 5-6 times what it is here. But we should not focus on any specific technology. We should have performance standards instead, would allow for creative solutions such as pairing PV with heat pumps.
 - Public comment: that would work great if you have on-site thermal load, but doesn't apply to utility-scale RECs, wouldn't incent those projects very well.
- Rep. Townsend: I'm concerned that the constant changes to the REC prices have eroded trust so badly that even if we increased the prices, lenders and the market may not respond because they assume they will just be changed again.

Biomass

- Biomass is popular in NH; we did receive a number of public comments that we needed to be careful not to recommend biomass in both the thermal and electric sectors at a level that exceeds the available resource.
- The target installations here are those co-located near the wood source.
- Ignatius: Current RPS target for existing biomass has resulted in a mis-match of demand and supply. Some of it is due to the fact that facilities can get a lot more money for the RECs in other states.
 - Ben: There might be a way to pin REC prices to regional averages
 - Amy/Jack: Original RPS law did that, but over time changes have resulted in NH being different from the region.
- Dick Henry: I would strongly recommend that the state not focus on using more biomass to generate electricity—it is much more efficient to use it for thermal (heat production). I don't even think that CHP is more efficient than pure thermal.
 - Ignatius: On thermal, the PUC just issued a set of rules for the thermal REC requirement—NH is the first in the country to include thermal in their RPS.
- Public comment: I think we're not going to see wood-fired electricity in the foreseeable future in NH. But I do think there's a lot of potential for community-scale CHP.
 - Ben: We are putting these issues out there to help have this discussion, you are the NH experts.
- Fitzgerald: I concur with those remarks, but we do also need to take into consideration that the current level of biomass usage is important to maintaining our working forests as a carbon sink, so they don't get sold and cleared.
 - Rep. Shepardson: Middlebury College was working on growing willow to feed their biomass plant—quickly growing renewable, something to look into?
- Ignatius: I hope that our strategy recognizes that if there are landfills currently flaring methane, that they should be investigating capturing and using that because there are so many benefits.
 - Randy: Are there any regulations in place for new construction that require piping for that?
 - Public comment: Many of our existing landfills are too remote to make it economic to run the 3-phase power lines. However, for older landfills that did have methane production (and therefore have the power infrastructure) but are no longer producing (most landfills get about 30 years' worth of gas), they could be ideal candidates for solar installations.
- Did you look at anaerobic digestion more broadly (beyond just cows)?
 - The state could look at that.

Terrestrial Wind

- Based on the wind speeds studied by NREL, there's a tremendous amount of opportunity in the state, and community-scale (smaller than utility-scale) wind could be a good fit for the lower density of loads.
- How are you defining 'community scale'?
 - Ben: It's based on the size of the turbine.
- Lisa Linowes: what really drove wind development in the last few years were cash grants, not the PTC. NH has met all of its Class I obligations through 2025, except that the RECs are getting sold out of state. Also, you don't mention transmission constraints in this at all, so how does that affect the potential and cost? Maybe community scale alleviates those concerns.
 - Ben: I do think that community scale does address a lot of those concerns.
- What about the intermittency of the power output?
 - Ben: An older way of dealing with that was to co-locate gas-fired with wind, but we are seeing more on-site battery backup.
 - Public comment: But doesn't that just drive the price sky high? We're going to end up like Europe with rates 4 times what they are now?
- Hatfield: Does NH currently have any installations that would be considered community scale?
 - Not sure, have to look into that.
- Rep Townsend: For both solar and wind, I hope we will consider pumped-air storage and other innovative solutions
 - Ben: We will discuss that in the grid modernization section.
- Looking at the RPS targets, do we think that there's an opportunity to make a policy change and shift some of the Class I from wind to solar?
- How are we ever going to meet our RPS goals if we keep selling our RECs out of state?
 - Ben: Our baseline forecast actually does predict that NH will not meet its RPS goals.
- Is it true that the ACP drives the value of the RECs?
 - Ben: It sets a ceiling for it, but the REC prices in other states provides a compelling reason to sell elsewhere
- Fitzgerald: There are two choices for utilities to comply—support building new generation to supply RECs, or pay ACPs if the generation didn't occur or price of RECs were too high. The theory was that ACPs are supposed to be invested back into the marketplace and increase the supply of RECs. In the situation we have now where the disparity of REC prices with other states is so great, companies are choosing to pay the lower NH ACPs. That doesn't mean the RPS is failing.
- I would also just add that the idea of the ACPs is to help incent competition to drive REC prices down.
- I want to add that the Berlin Biopower plant is going to get us really close to meeting our Class 1.

Offshore Wind

- None yet in North America yet, but large technical potential. Long-term technology to be mindful of, but not relevant for horizon of this strategy.

Hydro

- Most of the forecasted potential is very small scale
- FERC fish-passage requirements present a challenge
- We looked at opportunities for pumped hydro (perhaps better classified as storage)

Any additional ideas?

- Two things that I see missing, one is the influx of generation coming from out of region (NY and Canada), I think that's going to play a significant role. NY in particular has a lot of wind that might be seeking New England REC prices. I also think we could do a better job using existing resources, upgrading facilities.
- Fitzgerald: What about municipal solid waste, etc?
 - Ben: That is another options that the state could look at.
- I don't see anything about costs to ratepayers in any of this, is that not a consideration?
 - Ben: That is a key part of deciding which recommendations to implement, and how.
- You asked the question "which offers the best fit," but does it really matter/is it the right question? Shouldn't we be leaving the door open to new, cost-effective technologies?
 - Ben: Yes, but if policy is too open-ended, we risk complete inaction. The recent roll-out of solar energy in MA has been done in large part because of the leadership of Gov. Patrick. While we certainly see the appeal of innovative, open-market solutions, we think there are some initiatives that we need to put a finer point on and specifically incent.
 - Seems the operative word there is focus-- if you leave the door open, you run the risk of chasing everything that comes along rather than putting us on a clear, set path with a goal.
- Is small-scale nuclear on the near horizon?
 - Lisa: It's a good question, there are people look at developing smaller scale nuclear units, but I think the economies of scale are tough for affordability. It is something to watch.
- What about other things going on in the region, such as the possibility of a larger natural gas pipeline into MA or CT? Wouldn't that reduce the amount of power being demanded from NH?
 - Ben: Will check our baseline forecast and see if/what size pipeline it has factored in.
 - Along those lines, when you talk about costs, do you consider transmission & interconnection?

- I'm getting confused about this idea of leaving the door open for everything. New England doesn't have a capacity problem, we have a lack of fuel at some points during the year, but not a lack of generation. So what are you saying our goal should be?
 - Ben: Given that the forecast says we're not going to meet our RPS goals, we're asking what we might want to do to help us meet it.
 - So are you saying that we've reduced our strategy down to meeting our RPS?
 - Ben: No, that's one component of the overall strategy, and it's all working toward trying to meet the ideals we defined in the energy vision.
- Can you talk about how you looked at the need for new electric transmission?
 - Ben: When the full cost of what any particular development would be is considered by a developer, that would get factored in.
 - Hatfield: I think we have focused a lot on some of the smaller-scale resources because they are some of the things that the state has influence over, more so than gas pipeline expansion, though clearly the regional issues are important for the state to participate in.

Grid Modernization

- Randy: Grid modernization helps us integrate a lot of what we talked about earlier

SmartGrid

- Randy: Two levels: distribution/customer, and transmission. Really exciting technology both for consumer empowerment and for grid reliability.
- Ignatius: One of the things that we saw in the NHEC roll-out of the smart meters was a lot of community resistance and uncertainty, and in some cases misinformation. Opt-out provisions seem appropriate.
- Fitzgerald: Utilities in Texas who are only seeing an opt-out rate of 1 or 2%. Asking consumers to opt-in is a real barrier.

Consumer behavior

- Time of Use (TOU) programs have been shown to be very effective, provides economic incentives by charging customers different rates at different times of the day
- A second powerful tool is neighborhood comparison and positive reinforcement on electric bills
- Rep Townsend: The meters belong to the distribution utility, right? So a third party promoting TOU and smart meetings couldn't upgrade those if they weren't already there?
 - Brandy: Yes, but there are other behind the meter technologies that can be installed that communicate over the web that don't necessarily need the meter, so there's opportunities for consumer behavior changes that aren't

necessarily ‘smart *grid*’ but allow customers to save money – like the Nest system.

- What’s the typical impact of these TOU rates? What about low-income customers?
 - Brandy: Definitely a concern, but there are innovative programs going on in other states that show that it’s possible to overcome those challenges.

Demand response

- Tough for NH, limited applicability due to load profiles
- Easier for larger customers, new technology may help smaller customers.

Storage

- This is the future of energy issues.
- Immature industry that needs support, yet there’s limited funding for it
- California now has a storage mandate, and Long Island Power Authority looking into it as a resiliency tool
- Public comment: I don’t know of any operating storage anywhere in the US that is operating as backup power. It’s providing ancillary services. I think it remains to be seen whether California’s mandate can actually be met.
 - Randy: There are some operating as backup power, I can look it up and send you the details offline.
- What about the enormous battery capacity in electric vehicles?
 - Randy: vehicle to grid is another exciting technology, being experimented with, but one of the challenges is how to maintain battery life with those extra charges and discharges. Tesla is aggressively pursuing it, and Nissan is looking into using old Leaf batteries that are no longer in cars.
- Rep Townsend: Are there any other residential-level storage solutions?
 - Randy: Lithium ion batteries are one, thermal storage is being looked at on a commercial level (creating ice at night and using it during day to provide cooling)

CHP

- Portsmouth Naval Shipyard runs gas or oil—see Ameresco website for case study
- What’s CHP adoption outside of NH like?
 - Randy: I would have to look into that and get back to you. I imagine it’s probably similar, within North America. Europe has much higher adoption.

General Comments

- It seems like some of the regulatory barriers were hinted at, but not made explicit, and I feel like there is a lot more that could be said about utility incentives and planning.

- Hatfield: There is legislation right now that is updating the utility planning process, and there is more emphasis on looking at demand side resources
- Ignatius: We do also have a distributed generation statute that allows utilities to invest in these types of solutions

Next steps

Draft Strategy will be posted on OEP's website on May 1; on May 16 it will be presented to the Council, and we will also have a preliminary schedule for going out to the public.

The meeting was adjourned at 3:30.