

## Energy Committee Meeting Notes November 19, 2019

### Attending:

Northfield: Susan O'Connor, Andrew Vernon, Alex Strysky, Annie Chappell, Judy Wagner. And from Warwick: Janice Kurkoski, Steve Kurkoski, Jim Toth. Guest: Ben Weil.

### Agenda

Meeting was called to order at 6:05 p.m.

Ben Weil from Clean Energy Extension at UMass is joining us for guidance on our long term plan and energy measures to include in Green Communities application.

- What are Green Communities priorities and criteria (e.g. types of projects, payback and see the allowed list below). They are still measuring energy savings. Ben met with Mark Rabinsky the new Green Communities program person. Jim Barry had gotten everyone to sign up and now Mark needs to get everyone to reach their goals. Heating is the biggest use: need work on envelopes, correct sizing, transition to electric. Emphasis on pellet boilers has decreased.
- What about vehicles? Would municipal employees be willing to be tracked? Could do it for one year to establish a baseline. 14 towns are involved and there is one slot left. We would track data for one year. We would have quantity of fuel and odometer readings, how frequently they are fueled up and how much is non-optimal driving. Janice asked her highway department to track mileage. And with diesels, there are choices about how they drive, how much time are they idling to keep system running and keep fuel from jelling. But fuel filters can do the job for less. Mark came from transportation sustainability. Maybe we could at the least do an educational strategy drawing on his expertise.
- What about Air Source Heat Pumps? Yes, they are of interest given we don't have natural gas. If we optimize ASHP, we can reduce oil. In the NES South Building, teachers are asking for it.
- We could change water temperature re-set now that we have the envelope closed. And what about ventilation? But in terms of heat recovery ventilators, we might need to pilot this for them. Lauren Mattison is an engineer who works for Ben at U Mass and used to audit Mass Save and can help us. Don't know which goes first. Any estimates from boiler technician? Ben looked at VRF for Jackson Street school, and Mass Save just pulled plug on VRF.
- What about ventilation? Controls are pneumatic and it is a difficult system to control. We are losing heat through ventilation. In each classroom it could be possible to add a modular heat recovery ventilator unit so each classroom gets the right amount of ventilation. Then we only lose 10-30% of the heat. These don't have ducts (not Unos, but Ventacity 5000) which doesn't have capacity for 20 kids. It is possible to replace a



window panel with a pre-manufactured unit that has duct connections that will be ceiling mounted and throws fresh air and lets it drop. If we only use heat recovery ventilators makes ASHP more efficient, and can lower temperature of boiler water. 20-30% of heat loss is from ventilation. We could then buy smaller ASHP. PVRs has some rooftop ventilators. Another town had a 3-year payback. Might be about \$2,000 per classroom. Eversource supports heat pumps. Ben is getting better at getting Eversource incentives. Eversource buys into the heat pumps and are supporting this.

- Winserts are a possibility. And there are other craft projects to reduce heat loss. Commercial versions are too expensive. Pull them out in the summer so sun doesn't have the vinyl off-gas. Could be a math project measuring R value.
  - What about boilers. What if we just did ASHP? People are worried that it is an emergency shelter for the town. Would generators be enough to keep ASHP going? Would outside compressors be in the way of things? We need to have 100% back-up with the boiler because it is a school. Do we want it to be fuel oil or propane? We could fix the boiler and add thermal storage tank. We could come up with a new control system with outdoor temp as control for the boiler. When town replaces boiler offer to help with the controls, but can control turn off if we can get. Ben could come up and might need to bring up a consulting
- Plan is to "right size it" and spare the expense of a control system which is what Siemens would suggest and link to a computer that they charge for any repair. Rather than having big pneumatic controls, have a thermostatic valve that a teacher can control and adjust. In addition, this is a less expensive control system, but with temperature controlled to outside temperature. No more pneumatics and air compressor. Usually there is primary and secondary piping. If there is a thermostatic valve on your radiator and the room overheats, the valve will close.
- What will position us in the best way on Green Communities for a significant grant?
- What does the MEI data tell us about priority projects?
- Create a list of possible projects and what steps to take to prepare for GC application
- Decision-making tree and long-term planning process
- How do we vet contractors? Approved Project Expeditors (PEX) may overcharge. State is going to change the expeditors system. We need to get rough quotes. Mitsubishi could do ASHP quotes. Chris Mason from Northampton got some estimates on heat ventilators and we could ask him. (cmason@northamptonma.gov)
- PVRs: some data numbers are confusing. 10,000 gallons of oil were delivered in August, 4 deliveries October, Feb. Ben will have his class look at it in January. It probably means the system is not adjusted to the new environment. Adjust the controls. How much of the performance is delivery date or how much control issues? Warwick is willing to invest in PVRs, and to do number 4-15 on the list of strategies from original Energy Conservation, Inc. from 2018 audit.
- NES:



- Ventilation, modular system window units and close off existing ventilation. We would need to preplace wires and breaker boxes for this.
- Could put heat pumps first and could help reduce load on aging boiler; need two pole breakers at 30 amps (enough spacers for every three units). May need 4 with ventilators.
- Jason Burbank from Montague Energy Committee, just retired from UMass. He could be a helpful resource perhaps.
- Ben has a decision-making tree for individual buildings. There are lots of ways of getting heat and ASHP are good for NES.
- At the High School 40% of the load is ventilation. Ben would drop down ventilation when the building is not in use.
- Ben will ask Lauren to do a town energy profile with our MEI data

#### Updates

- Earthlight's contract and electrical work ahead.
- Tom Strunjo from Facilities Solutions group also submitted a proposal. Janice found that Earthlight's numbers are better, with cost of \$122,000 and Tom at \$109,000 but Earthlight is getting \$77,000 in rebate but Tom is only rebate \$28,000. Susan might meet with Janice, Sharon, Kevin, and Andrea so she can take this on. Tom's PPA proposal is 20 years for 1.5 megawatts; high school would need 60% of it, rest back to meter or to other schools.
  - PVRs and NES (Susan).
  - Library (Judy)
- Final report for Green Communities Grant
- Annual report for Green Communities Grant
- Other items

Review and approval of October 15, 2019 meeting minutes

December 17, 2019. 6:00 p.m. is our next meeting.

Meeting adjourned 8:36.