

ELECTRIC LIGHT DEPARTMENT (ELD) SUBCOMMITTEE
SELECTBOARD MEETING
Thursday January 10, 2022, 7:00PM
Meeting held remotely due to surging cases of COVID-19

Subcommittee Members Present: James Engel, William Craft, Whitney Hatch, Michael Schaaf, Edward Rauscher, Tammy Jones, Sarah Player

Select Board Members Present: Tammy Jones, Sarah Player, William Whitmore, Linda Alexson, Kerry Mackin

Other Officials in Attendance: Jonathan Blair (Electrical Manager), Ray Leczynski (Accountant), Dylan Lewellyn (Business Manager), Tony Marino (Town Manager)

Citizens in attendance: Michael Johnson, Gary Champion

With a quorum in virtual attendance, Meeting called to order at 7:04 p.m.

1. Citizen Queries:

Gary_Champion asked if Town Counsel approve the lease of the land for Wind 2 that was signed by the Select Board. He also asked why did the land lease leave Ipswich exposed to a \$1 million expense to remove the failed Wind 2? He also asked if the Town should focus more on wind turbine collaborative like the Berkshire project instead of replacing Wind 2? Mr. Engel answers that everything with Wind 2 was reviewed by Counsel and no objections were raised. Secondly, with respect to the liability for the removal of Wind 2, that was an oversight and the Town has admitted to that. The third question is the substance of tonight's meeting.

2. Power Portfolio Status and Goals

Jon Blair begins with where the ELD stands with respect to non-carbon power and REC optionality. The ELD's carbon intensity has continued to decrease over the past few years as the Department has made more investments in carbon-free power. Jim Engel asked what the cost of REC Optionality is for the town and Jon estimates the value at \$400 thousand. Next, Jon discusses the sourcing of the portfolio by type, including hydro, nuclear, wind and source agnostic (power purchased from the regional grid). Kerry Mackin asks if this includes the back source of dams; Jon answers it does not, but it opens a good conversation about our projects and our ideals. Looking into the future, there is an emissions standard from the state, which will mandate us to comply with certain portfolio goals and meet carbon-free milestones. Overall, the ELD is well-positioned, with respect to non-carbon energy, but we need to continue to press forward to make sure we hit the milestones the state has set forward. Jon sets forth his recommended strategy.

- Build and maintain a foundation of baseload carbon free power (20% Nuclear and 20% Hydro)

- Add a significant amount of complementary non-dispatchable, renewable resources (30% Wind and 10% Solar)
- Buy RECs to meet final 20% requirement in 2050
- Retire RECs to meet GGES requirements in most cost-effective way as milestones are reached.

Dr. Jones asks about tidal power, which Mr. Blair responds it would be something done farther north, since more significant tides (closer to 20 feet) would be necessary to make a project viable. The technology is not fully proven or commercially viable yet; there are also concerns about interference with the environment, fishing, and other coastal activities.

Projects being considered include regional carbon-free power purchase agreements for wind and solar. Local carbon-free power, including replacing Wind 2 and/or constructing a solar array at the old landfill and/or on the roof of the Ipswich Middle/High School is also being considered. Energy storage is a topic of strong interest for the Department, including both utility-scale and distributed, customer-owned systems. Regionally, the ELD anticipates having access to significant amounts of offshore wind through a power purchase agreement with Mayflower Wind; that opportunity would be available in 2028. Another opportunity would be a ground mounted solar array in southern New Hampshire with Borrego Solar, which would be available 2024. Replacing Wind 2 would be available this year, if the Select Board and Commissioners agree to move forward with it.

Mr. Leczynski asks about the new Wind 2. The appeal of the project is they are going to take down to old turbine which would cost us about \$1 million, which will produce approximately 4-million-kilowatt-hours of power each year at a cost of almost \$500 thousand annually. If we bought that power from the grid, it would only cost around \$100 thousand. Over a 25 year deal we are paying \$10 million premium for a savings of \$1 million. We could put a solar field there for much cheaper.

Mr. Blair continues with cost and time of delivery comparisons, which impact project value. All these sources are not the same, there are some around-the-clock sources (nuclear and hydro) or there are intermittent sources (solar and wind). The premium that is being paid depends upon the replacement cost of power at the time the power is delivered. Batteries are beneficial because they can increase the value of intermittent power sources by shifting the energy from a period of low replacement cost to a period of high replacement cost, thereby reducing the premium. Additionally, batteries can reduce our demand at the wholesale level, which results in a significant reduction of wholesale expenses, and they can provide backup power in critical times. Potential installations sites for a utility-scale battery project include Utilities Department on High Street or Fowlers Lane, the new public safety facility proposed for Pineswamp Road, and the existing site of Wind 2. Dr. Jones asks how many times a month the Ipswich Power Plant operates to reduce the peak; Mr. Blair responds about 3 or 4 times each month for about 2 hours each. Dr. Jones asks how long would a 5-megawatt battery take to recharge, if we had both winds or solar to recharge the battery if we used it during peak times. Mr. Blair says he's not sure how long it would take to completely recharge the battery, because it would depend on the size and output of those intermittent sources. Hypothetically, if 5MW of production was

applied to a 10MW-hour battery that was equipped with a 5MW discharge rate, then it would take two hours; however, we do not currently have 5MW of wind and solar, so it would take something longer than that. Tammy Jones likes the ideas of trying to knock off the peaks without using fossil fuels and saves the town money, and wonderings what the rate of savings would be. Mr. Blair answers that it is a perfect question going into the last slide which is the proposed project ranking.

3. Wind, Solar and Battery Storage Projects

Each project is broken down by type, location, estimated size, strategic goals, method, difficulty sustainability merit and annual savings. The top three projects are:

- Remote Solar Power Purchase Agreement
- Offshore Wind Power Purchase Agreement
- Peak Shaving & Resiliency Battery

These are all rough rankings based on the type, value, and difficulty of each potential project. For example, there are many logistical obstacles to develop solar panels on the roof of the Ipswich High School and the objective value would be quite modest; therefore, that project received a lower score than a power purchase agreement for a large amount of solar being developed outside of Ipswich, which has more value at a cheaper price with no logistical burden.

Ms. Player asks if we would we buy energy from these remote projects and store it in batteries? Mr. Blair says yes, but the charge and discharge cycles would be dictated by the wholesale market, not necessarily by individual projects or assets. Mr. Engel adds that we would charge the batteries in the middle of the night when power is the cheapest and has the lowest carbon intensity, we would then discharge the battery during peak hours when the opposite is true.

Mr. Leczynski points out that all of the projects that reduce our carbon footprint, increase the cost to the customer; the only project that reduces costs is the batteries, which don't directly reduce our carbon footprint. Jon wants to take the savings from battery peak-reduction projects and use it to fund these premium, carbon-free assets to net out the difference. Comparing the projects side-by-side, the same volume of wind power from Green Development would cost Ipswich 50% more (approximately \$160 thousand annually), than contracts for offshore wind. Offshore wind opportunities are still six years away for Ipswich, but Wind 2 could be constructed in less than one year.

Mr. Schaaf is in favor of going back to Green Development to negotiate pricing that is more aligned with offshore wind. Mr. Craft adds that if we can't get a better deal from them, we should just take the hit on removing Wind 2 ourselves and then move on to the battery opportunities. Mr. Marino also adds it's not on the ELD to remove it, it's on the town but we need to find the money to be able to do it. The Town does not have the \$1 million budgeted for that expense and would need to put the work out to bid.

Several members would like another meeting to discuss these projects and their specific costs. Mr. Blair mentions that it is budget season so vetting and approving the budget and rates must take priority on upcoming agendas. The Subcommittee tasked Jon with reaching out to Green

Development and asking for them to provide disaggregated pricing for the decommissioning of Wind 2, separate from the replacement power purchase agreement. The Select Board is going to discuss the topic at an upcoming meeting and provide additional guidance to the ELD. The Town Manager is going to investigate any possible alternative use for the tower, like removing the blades and marketing it as a cell tower for mobile communication companies.

4. Old / New / Other business:

A survey will be coming in the next round of bills to reach everyone including low income, renters, and other it may not necessarily reach on energy rebates etc.

Motion to adjourn by William Craft; Second by Sarah Player
Motions passes unanimously. Meeting adjourned at 10:02pm.