

Minutes:

Stowe Electric Commissioners' Meeting

May 26, 2022 at 8:30 a.m. at Town of Stowe Electric Conference Room

Present:

BOARD MEMBERS: Richard ("Dick") Marron, Chairman; Larry Lackey, Vice-Chairman (via Zoom), Heidi Scheuermann, Commissioner (via Zoom)

STAFF: Ellen Burt, General Manager; Brent Lilley, Director of Operations; Sarah Juzek, Controller; Mike Lazorchak, Manager of Regulatory Compliance; Lily Burgess, Clerk of the Board

GUESTS: Lindsay George, Small Hydro Consulting
Mike Hall, Stackpole & French (via Zoom)

Dick called the meeting to order at 8:31 a.m.

Approval of the April 27, 2022 Meeting Minutes

On motion made by Larry Lackey and seconded by Heidi Scheuermann, the minutes of April 27th were approved.

Moscow Mill Hydro Project Presentation

Lindsay George is a water resources and civil engineer working in small hydro power, and she is very experienced with non-power dams like the Moscow Mill dam. Hydropower projects can be very complex with the need for electrical, mechanical and civil engineers, plus the associated regulatory issues. The Seaver Sawmill at Smith's Falls was built in 1822, was used for saw and grist milling, and later electricity generation. Tropical Storm Irene damaged the plant in 2011.

The four alternatives discussed were: Stabilization, Decommissioning, Hydro Restoration and "No Action".

Stabilization would include improving the spillway as well as restoring, repairing and stabilizing the dam, which has some deterioration after the past 100 years, to address the Public Utility Commission (PUC) Order. This would include improving the structural stability and capacity to pass water during high water/flood events for the next 50 - 100 years.

Decommissioning would mean the formal retirement of the hydro power and all its infrastructure and may require removal of components within the Mill as well. The PUC would no longer have jurisdiction over the dam and Agency of Natural Resources (ANR) jurisdiction begins. This approach has limited financial benefit and a dam removal will have unknown impacts to the Mill that will require additional design and study.

Hydro Restoration would mean restoring and modernizing the hydroelectric generation plant including replacing the turbines and stabilizing the dam to provide behind the meter generation. Additional benefits would be Tier II and Tier III credits to reduce power purchases and increase community good will.

No Action: Stowe Electric does not have the option of a “no action” alternative and must do something with the dam, sluiceway, and hydro-plant to meet PUC dam safety requirements.

Lindsay presented the estimated costs for the three alternatives, including three different sizes for hydro-generation, not including additional state and regional funding that may be available.

Options	Estimated Cost	Grant funding*	Out of Pocket Cost	Cost Savings (year 1 – year 30)
Stabilization (Dam Rehabilitation)	\$2,200,000	None	\$2,200,000	\$0
Decommissioning (Dam Removal)	\$1,500,000	30% federal funding for dam removal, possible	\$1,050,000	\$0
93 kW Hydro	\$3,150,000	30% Section 247	\$2,205,000	\$45,000 - \$114,000
130 kW Hydro	\$3,680,000	30% Section 247	\$2,576,000	\$53,000 - \$136,000
165 kW Hydro	\$4,040,000	30% Section 247	\$2,828,000	\$60,000 - \$153,000

The cost savings are yearly, with the lowest amount being in Year 1 and the highest in Year 30. Section 247 is a new grant program of up to \$5M per project and up to 30% of the capital investment. Since this new grant program is on a first come, first serve basis it would be best to get the process started as quickly as possible. The estimated costs listed above do not include any of the other grant sources that SED has applied for.

The cash flow projection over the next 40 years for the alternatives presented were discussed. For the annual cost of electricity (per kWh) Lindsay explained that the difference between the hydro generation capacities and the associated costs are relatively small. A larger hydro capacity (165 kW Hydro) would be higher cost in the beginning and lower cost at the end, and a lower hydro capacity would be lower cost in the beginning and higher cost at the end. All turbine options show higher costs for a regular major maintenance overhaul associated with rehabilitation of the equipment every 10 year.

The benefits of restoring hydropower would be:

Increase the behind the meter renewable generation, and Tier II and Tier III Renewable Energy Credits (RECs), including avoiding transmission and capacity charges.

Offer equitable opportunity in SED’s Tier III program and community energy projects.

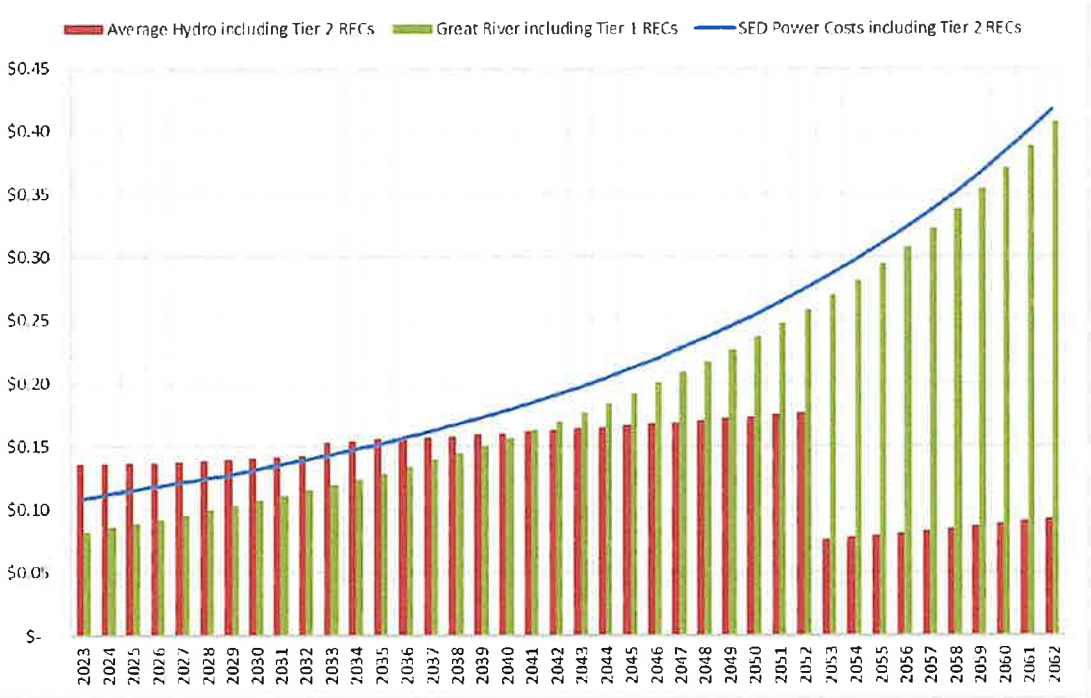
Provide another generation resource for SED’s micro-grid for Wilkins Substation.

Satisfy the PUC Order in the dam safety docket.

Opportunity to earn a return on SED’s historic mill building and lower power supply purchase costs.

Lindsay elaborated on the current annual cost of purchasing electricity (per kWh) in comparison to the cost of purchasing hydro power and the cost of the hydro power generation alternatives discussed. The [blue line](#) is SED's current power costs showing the wholesale power costs that are expected to continue to regularly escalate through the next 40 years. The [green line](#) is the cost of buying hydropower production from Great River, and only includes Tier 1 RECs (not as valuable as the Tier 2 RECs) which is slightly less than the wholesale power cost but is expected to escalate as well. The cost of buying hydropower production including the more valuable Tier 2 RECs would be above the wholesale cost of power. The [red line](#) shows the average cost of electricity from SED's hydro production, which in the early years (first 10 years) would be a slightly higher cost per kWh than the currently purchased power but then remains relatively constant without the cost escalation every year. All municipalities that Lindsay worked for in the 1980s are profiting from this kind of lower power cost compared to the wholesale market prices. A further benefit is the transmission and capacity savings since the power generation is behind the meter.

Annual cost of electricity per kWh *Comparison of Alternative Energy Supplies*



Michael stated that there would be benefits to this project beyond just a cost benefit in power supply. SED should consider these additional benefits that are not captured in Lindsay's models since Vermont is unique with Tier 2 and Tier 3 RECs and the equitable opportunity mandates in Tier 3. SED also has the VLITE grant that will help the equitable opportunity program for SED's low- and moderate-income population. Creating a microgrid is another consideration as well as the historic Mill.

In collaboration with a turbine manufacturer Lindsay prepared a visual explanation of how she believes the Moscow Mills Community Generation Project could look.



Stowe Electric Department Moscow Mills Community Generation Project

New intake gates and screens would be installed at the riverbanks to prevent any leaves, sticks or anything else floating in the water to enter the forebay. The channel would carry the water to the turbines placed at the end. One option would be to build the turbines in the cubicle shaped powerhouse that could be finished in different ways for aesthetics. The water would fall out of the bottom and carry on to the river. This channel was originally built to expand the capacity of the existing facility but was never used. The concrete therefore is in good condition and shows little wear. The channel helps move the water through the facility without affecting the historic structure.

Currently the water flows underneath the building into the turbines and flows out underneath the building. Another possibility would therefore be to keep the current setup and to restore the hydro mill just like it was.

Michael stated that the dam currently is in fair condition, and SLR provided SED a work plan to stabilize and rehabilitate it. There is concrete that sloths off due to recurring ice events, which is why the “no action” approach is not an option. There is a lot of ledge that would allow SLR to pin rock anchors to the ledge. The basic plan would be to cut the top third off and restore the dam with a concrete tap that is anchored into the ledge that would provide a non-erodible crest that would last into the future. These costs are included in the dam rehabilitations estimates provided.

The trash racks can be manually cleaned up with rakes. An example of trash and debris control is shown above. The sweeping currents can brush debris and self-clean the trash off (sometimes by turning off the turbines). Other options would be adding an air bubble system that will burst in air to push the trash off, or a full power break that will automatically

turn on when it detects trash. The cost of the trash rack cleaning system is included in the range of estimates.

Larry asked if any of the estimates include an inflatable dam with a flashboard. Lindsay responded that this will be a design choice that will be made through the design process, but there is money in the dam cost estimates. Larry stated that he is worried about the current aesthetics and antique beauty of the historical structure, and that an industrial approach might not be well received. Lindsay assured that there will be a requirement to bypass and flow water over the dam for aesthetic and environmental purposes. The hydro facility can be designed to reduce the visual impact so that a rubber dam will never be seen other than the sheet of water flowing over the dam. The facilities for the hydro generation intake can be well hidden with wood or water.

Larry inquired whether a decision about the three different levels of output modeled needed to be made before starting the project since a lot of capital will be committed, or whether SED can decide to initially start with smaller, less expensive hydro and later retrofit to add capacity. Most of Lindsay’s projects include oversized pipes coming in, leaving one with a blind flange to potentially add a second unit later. The decision for the maximum capacity should be made early on though. SED could currently use all the generation capacity if the project is cost-effective. Since the hydro generation was historically sized at 93kW, it is possible that from a permitting aspect it would be faster and less complex to start with this lower capacity. This would allow SED to evaluate how the hydro is working out in a quick and faster way, while reserving the right to add on more capacity later.

Today’s turbines can be completely fish friendly. Currently, there is no fish passage capability so a restoration turbine would also be reconnecting the stream. A fish friendly turbine has a couple of advantages besides allowing fish to pass. If the turbine is not fish friendly, the screen must be fine enough to prevent all fish from passing. If fish do not need to be excluded, the trash rack gets bigger, thus allowing leaves, dirt and stick to pass while also reducing costs. Because of the Waterbury dam, fish passage is not a big concern, but regulators would prefer a fish friendly turbine.

<p>Estimated Budget to restore Hydropower</p>	\$700,000 –	93 kW – 165 kW Hydro Facility
	\$1,300,000	
	\$2,000,000	Dam Construction Costs
	\$200,000	Design and Permitting
	\$50,000	FERC Licensing
	\$250,000	Contingency
	\$3,200,000 –	Total Project Cost <i>not including grants or incentives</i>
\$3,800,000		

Larry asked about the grant applications, since the capital is such a large share of the cost of operating the hydro mill. Michael stated that SED has submitted multiple grant applications for the stabilization and restoration of the facility (not related to the hydro generation facility). SED has already cleared the 1st round for the Northern Border Regional Commission (NBRC) grant for up to \$1 million for infrastructure. SED is also applying for \$2.5 million from Senator Bernie Sanders. His office is likely to highlight this project for funding. There is a good chance SED will receive at least 1, or even all 3 grants for the historic preservation of the mill, flood control and hydro energy generation.

Between these funding resources, SED cannot receive more than 80% of the restoration costs from federal funding.

Larry asked whether the maintenance and operation will be primarily done in-house. Lindsay responded that the level and effort required for the daily maintenance and operation does not necessarily require special skills since cleaning the trash rack is easy. The system would be designed to require as little maintenance as possible as that is the most labor-intensive part of the hydro facility maintenance, other than restarting the facility when necessary. The rest would be checking alarms and statistics on a computer. The 10-year maintenance will be contracted out. The annual maintenance, such as greasing bearings, could initially be contracted out but could then be done in-house with training.

Larry asked Lindsay what the best next step would be, the associated costs, and whether SED should undertake anything before knowing whether they will receive grant funding. Because restoring the hydro-plant depends on the dam stabilization, these can be undertaken in parallel. SED can work on the dam stabilization while continuing to explore the hydro-plant development. SED could commit to stabilizing the dam, since this can happen in a shorter time frame (than the hydro plant) and would be required for the hydropower plant to move forward. Determining the capacity, dealing with stakeholders (which are the same for both projects) and licensing can happen during or after the dam stabilization.

Neither ANR nor PUC need to know whether SED plans to restore the facility to a functioning hydro plant to approve the dam stabilization since the PUC has already seen SLR's proposed plan and given their approval to continue with the dam stabilization project. An engineer would need to prepare the design. SED is hopeful to receive grant funding from NBRC, Senator Sanders and FEMA toward the dam stabilization.

Larry raised the concern that if the Commissioners were to vote to move forward with the dam stabilization, SED could lose access to grants since it might be interpreted that SED was planning to move forward regardless of funding and it might be viewed that SED does not need these grants. Heidi restated Larry's concern by asking whether SED is putting at risk the receipt of a potential grant by stating that SED was going to stabilize the dam. Ellen assured that SED was only moving forward with the design while continuing to apply for grants and was not committing the necessary \$2.2 million to the dam stabilization. Dick stated that he does not think that SED would risk receiving grants, as this is all provisional since SED needs the grants to move forward.

The Commissioners thanked Lindsay for the informative presentation, and she exited the meeting at 9:39 a.m.

Financial Report

March 2022 Financial Results: Sarah reported that SED ended March with a loss of \$532,821, which is \$203,210 more than the 2022 budgeted loss of \$329,610 year to date. The overall Operating Revenue was \$270K favorable to the budget. SED Electric Sales were \$247K above the budget, with Residential sales being \$70K up from the budget and Commercial revenue overall was \$173K favorable to budget. Contract work fees were \$23K favorable to the budget.

The overall Operating expense was \$478K unfavorable to the budget, with Purchase Power costs \$419K over the budget. Most of this cost is from Purchase Power Energy.

Prior Year Energy Comparison: Electric Sales are up by \$197K compared to the prior year (Jan-Mar). Purchased Power Costs are up by \$820K compared to last year (Jan-Mar).

The 2021 actual power costs for the entire year were \$7.6M. The 2022 budget as approved in November 2021 included Energy New England's original projected total power costs of \$8.9M. A few weeks ago, ENE revised their projected power costs for 2022 to \$10.2M.

The cost per MWh more than doubled this winter from \$56/MWh in 2021 to \$126/MWh in 2022. This resulted in a projected energy increase of \$900K in 2022 compared to 2021. Snowmaking costs increased by \$600K. The current contracts had a combined total increase of \$421K. VELCO transmission costs increased by \$380K, ISO fees increased by \$209K, and RES compliance increased by \$88K.

Bond Financing: SED submitted the summer bond initial application last month. Michael Hall from Stackpole & French has sent the filing to the Public Utility Commission (PUC). The funds should be available to SED by mid-August.

Rate Case: Dave Lamont is finalizing his model for the rate case. The estimated increase has gone up from his initial 6.70% to 9.25%, resulting from the updated forecast from ENE for power costs. The initial 6.70% was based on the \$8.9M power costs from SED's 2022 approved budget, whereas the power costs projected for the rate case year of August 2022 to July 2023 are \$10.3M.

SED has only increased rates 8.43% over the past 12 years, which includes a 3.5% rate decrease in 2014. SED will file the rate case on June 15th and the increase will be applied on August 1st.

SED will publish a press release explaining why the rate increase is necessary before the filing of the rate increase petition.

Larry Lackey made a motion to authorize the General Manager to petition the Public Utility Commission for a rate increase not to exceed 10%, with effective date August 1st, with the final exact amount of the rate increase to be determined through the calculations by the Department and its consultants. Heidi Scheuermann seconded the motion, and the motion was approved.

Forecast: The market is continuously changing. At this point in time, SED is expecting a total loss of \$650K by the end of July. This includes an updated projection of Power Costs from ENE, which increased from \$8.9M to \$10.2M. Power costs were highest in the winter; therefore, SED should see their losses slow down. At this point in time, the year-end forecast is showing a total loss of \$800K. This loss includes the rate increase of 9.25% from August 1st through December 31st.

Operations Report

The Operations Report was part of the Commissioners' Meeting Packet but was not discussed in further detail.

Regulatory Report

Michael reported that in the previous month the Legislature, PUC and DPS wrapped up the legislative session, which saw the clean heat standard fail. SED is still waiting for guidance on federal funding and the passage of the Transportation bill.

Vermont Energy Investment Corporation (VEIC) held the first quarterly meeting for the Tier III Technical Assistance Group, which will guide Tier III rebates for 2023.

SED continues to review all the utilities Tier III 2021 plan submissions. Staff spoke with DPS staff and DPS will submit a report approving the Tier III credits claimed in 2021

The PUC continue their review of net-metering rulemaking updates, biennial net-metering programmatic review and stakeholders are continuing to participate in rule revisions for Rule 5.100, Rule 8.313, Rule 5.400 and Rule 5.500.

SED to date has paid incentives for 12 electric vehicles, 2 e-bikes, and 71 heat pump rebates.

UVM Engineering students presented their final capstone reports and papers. The students looked at the stabilization of the mill and installation of hydro. The reports were favorable and staff from the National Hydropower Association attended the presentations and suggested UVM apply for a Department of Energy funded collegiate research program.

Staff continue to work with EVT on weatherization initiatives and are presenting on May 25 to interested Stowe and Lamoille County residents.

Executive Session (Personnel and Contract Matter)

The Board moved to go into Executive Session at 10:07 a.m. to discuss a contract and personnel matter and invited Sarah Juzek to stay.

The Board made a motion to come out of Executive Session at 10:15 a.m. and the motion carried.

No action was taken or motion made.

Other Business

Northern Border Regional Commission (NBRC): The Board of Commissioners signed the letter to the NBRC expressing the Board's support for the NBRC application for the dam restoration. The Town of Stowe Selectboard signed the letter of support as well.

Dick Marron made a motion that it be resolved that Ellen Burt, as the General Manager of the Town of Stowe Electric Department ("Electric Department"), is authorized to sign any and all document(s) related to the Northern Border Regional Commission ("NBRC") State Economic & Infrastructure Development Program grant application on behalf of the Electric Department, and that Ellen Burt is further authorized to execute, on behalf of the Electric Department, any and all NBRC investment documents that are necessary to execute the award of funds to the Electric Department for the Moscow Mills project. Larry Lackey seconded the motion for the resolution and the motion carried.

The Board scheduled the next Commissioners' meeting for Wednesday, June 22nd at 8:30 a.m.

There being no further business, the meeting was adjourned at 10:17 a.m.

Respectfully Submitted,



Lily Burgess
Clerk of the Board