

Minutes of the August 6th, 2015 SIEC Board Meeting held at the Library.

Meeting was called to order at 6:35 PM

1. Approval of July 2nd Minutes (Eric and Ed)

Minutes were approved with the following amendments.

- Tom McAloon's name was deleted from the list of people interested in the Solar Investigation group.
- The SIEC Alternative Energy Committee paper: *The Question of Independent Power Options*, was modified in the paragraph reporting on Tom McAloon's estimates for several solar array scenarios. A copy of the revised report is attached, has been submitted for inclusion on our web site, and has been distributed to the Solar Investigation group.

2. Manager's Report (Jeffrey)

Disconnection Report: Same story every month. There are about 20 members who delay until the threat of disconnection, then they pay or enter into a payment plan.

Update on Steve Green Training with Fox Island Electric: Nothing further to report there.

Frenchboro Work Plan Update: The grid work is complete. Six new poles were installed, all wired.

Fuel Tank Removal Plan Update: Still no firm date from Billy Banks. Other options were discussed, such as metal salvage removal which would not get the pipes underground. Tom noted that we will have to get professional certification that the site is clean and this could be a factor in the Emera negotiations if we want to include their keeping some staff and equipment here on call. The site will have to be clean. Jeffrey was asked to inform Billy about these concerns and the urgency of tank and pipe removal and to request that work get underway before the end of this month.

Submarine Cable Costs Review. SGC Engineering submitted an estimate dated July 22, 2015 (attached). Bottom line is that a new 3 phase cable would cost \$2,304,240 from Lopus Point to Swan's Island. Swan's Island to Frenchboro single phase would cost \$446,832 for a total of \$2,751,072.

As to the damaged power outage that seems to be C-Phase cable related – it is. Tests at each end of the cable indicate that the problem is in the C-Phase cable itself, not at either of the connections. The cable keeps blowing fuses. So far no luck finding a firm to determine the nature and location of the damage and Emera doesn't do this kind of work. (See Ed's subsequent e-mails on this issue with some progress made). It was the sense of the Board that Jeffrey should go ahead with coming to terms with a solution and get Board approval through e-mail as speed is of the essence given that we have no back-up cable at the moment.

Usds Poles Disposal. Emera said they give theirs away having recipients sign a waiver about proper handling as they do contain materials hazardous to the coastal environment. Solution to this problem is a work in progress.

Asset Inventories Update for Emera Negotiations: Methods of determining an asset valuation were discussed. It was felt that book value would be insufficient. Jeffrey got an estimate from Doug Pierce on a professional assessment (his was the first firm to respond). This would take about 95 days and cost \$35,000. There was a sense of the board that a firm evaluation would be needed for the Emera negotiations and that we should expend funds to get one. No motion was made on this issue. (See Bob Pickup's subsequent e-mail on ideas to go about some of the valuation process and possibly save some money.)

Loan pay-off totals for Emera Negotiations: Jeffrey to solicit pay-off totals from CFC, FFB, and RUS.

3. Financial Close-out Report (Bob).

Short report. No closeout change since Annual Meeting report on July 23rd. \$49,700 is on hand.

4. Review of Annual Meeting (July 23rd) and Straw Poll results.

Good feedback on the annual meeting. Emera's Scott Richards said that we have made very good progress in shaping up our grid since last he was out here several years ago.

Straw Poll results: 243 ballots received, 223 in favor of proceeding with explorations with Emera, 13 opposed, 5 no opinion, 1 nothing checked but proposed a different option and 2 late ballots not counted but in favor.

(a) Emera Negotiations – Plans are in the works. Tentative dates have been set. These were discussed mostly in the Executive Session. [First negotiation meeting scheduled for Aug 25th was postponed at Emera's request so that they could do more due diligence work to assess our grid.]

(b) Old and new business.

Eric reported that Jennifer resigned from the Solar Array Investigation but said she would give us her report in a few days. Not sure whether this is the complete or partial report. When we get that report, we'll take stock again and see if more work needs to be done and if so, whether we can find a new "champion" to do that work. The larger group will be informed.

Steve Green brought up from the floor a comment and a question.

Comment: The Fox Islands Co-op is selling electricity back to the mainland from their wind turbines. Initially they were making money, but noise litigation cut that back. The suite outcome favored the co-op and they are back making a profit again.

Ed commented that one result is that the state has tightened up regulations for wind turbines. He also noted that our researched site is still good should anyone choose to make the investment. One option is to keep the co-op in mothballed format so that in the future conceivably it could make that investment. The Co-Op is authorized to purchase power and to generate power. This is a capability which could benefit the islands in the future if technology matures and provides advantages to both Emera and to the islands to work in partnership.

Question: What form would the mothballed co-op take and how would it work?

Board summary response was that there would have to be a group of members who would be willing to support the co-op financially. It would still have expenses, reporting and legal requirements to meet. This will need a lot more scoping out.

5. Executive Session

(a) Election of Officers for 2015-16. Results by acclamation were:

President: Ed Schwabe

Vice President: Jason Matthews

Treasurer: Bob Pickup

(b) Vote to fill unexpired term of Jim Stone

The three leading candidates behind Jennifer had votes as follows:

Sarah Lane: 28

Sam Gramiccioni: 25

Bill McMullen: 22

After discussion, the board selected Sarah Lane to fill the vacant position.

The meeting was adjourned at 8:40 PM

Attachments:

1. The Question of an Independent Energy Option

What have we done? Up to this point, the Alternative Energy Committee has been focused on building upon the work of the Cooperative which began in 2010 with a formal feasibility Study for Wind Power. The Committee has gathered material, sought volunteers from the Co-Op membership, and collected opinions from knowledgeable participants. We have not gone beyond the materials listed below posted on our website to explore options. However, options are explored provisionally and for other locations in these posted materials. We have not engaged experts to do an explicit study for an SIEC and member- owned solar array as this would require an investment similar to that undertaken for the wind study on Swan's Island.

On our Web Site:

- Tom McAloon's Study: *Options for Sustainable Delivery of Electric Service to Swan's Island and Frenchboro* (this baseline analysis was adopted by the SIEC as a resource).
- Monthly updated Matrix of Links to Alternative Energy Materials by Topic.
- Report to PUC on Stipulations, including Independent Power section.

Independent power options ruled out for Swan's Island:

- *Tidal power generation* is still in early stages of development such that there is not an option currently available that would make economic, technical or management sense for Swan's Island.
- *Wind Power* has proven to be a viable option technically for Swan's Island thanks to the results of our Island Institute funded (\$50,000) study. However, the numbers ceased to make economic sense when the federal subsidy expired. The initial investment would be over one million for one turbine plus substantial maintenance costs. Since the Cooperative is a non-profit and cannot directly take advantage of the Production Tax Credit, a separate Limited Liability Company (LLC) would have to be formed to raise the funds, sell the power, and the project costs would have to be paid off over a period of years. Further, the management and maintenance requirements exceed the institutional capacity of the SIEC. Feedback from Fox island indicates that their wind power generation has not significantly decreased their power costs but has raised other issues resulting in expensive litigation due to siting the turbines too close to several homes
- *Diesel powered, high efficiency variable speed generators* match fuel consumption/KWh production to demand and have proven effective for Monhegan. However, the rate charged there per KWh will exceeds what SIEC is paying to Emera so not a viable option here.
- *Intermittent operation spruce fired boiler generator* could use waste spruce on Swan's. However, Tom's quick look at the logistics, staffing, land and equipment requirements let him to conclude that this was not something SI should consider.

The Individual Solar Option. Solar is a dynamic growth industry globally in which costs are declining steadily and technological breakthroughs are frequent. There are options for individual consumers such as rooftop solar panels, passive solar heating, solar power generating windows and anticipated

big breakthroughs in home solar storage batteries. For individuals, it would seem to make sense where net metering is available. Net metering means that solar households can generate power beyond their own demands and against this surplus, claim power credits from their electric power company which is obliged by law to receive this surplus power. However, there is a fairness downside to net metering, economically speaking.

As the number of solar customers increases, the administrative and management costs of maintaining an electric utility and its grid system that are traditionally loaded onto KWh sales to customers have to be absorbed primarily by diminishing numbers of non-solar customers. Rising electricity rates and resulting customer angst pose a threat to the viability of the power companies in their power generation and grid maintenance. For this reason, it is highly likely that this net metering benefit will not be sustained. Cracks are already appearing in its foundation, even in Maine. SIEC is exempt from net metering, but if it were adopted here, the Co-op soon would be insolvent.

If Emera were to absorb the Co-op, they would be required to provide net metering as long as that requirement survives. Swan's Islanders investing in solar panels might be able to catch the tail end of that benefit. But, solar costs are coming down so fast that household solar panels may make sense even without net metering.

Jointly Owned Solar Power Generation (SIEC and Members). This "solar farm" or "solar array" option on the surface is quite attractive for many of the reasons already stated. Costs are coming down and technologies are ramping up. Already there are solar panels that are hydrophobic such that nothing sticks to them and panels that constantly orient towards the sun. There are many examples of successful community solar farms in the literature. It might be possible to find a free 10 acre site on SI at the dump, the old airport or a tract of land in reserve status with Maine Coast Heritage Trust. Or, it might be possible to lease a site for something like \$250/acre per month (both options were used in illustrative scenarios worked out in Tom's study).

The requirements for such a jointly-owned 10 acre 1 megawatt community based solar array would be as follows:

- ✓ Agreement by SIEC Board and members to undertake such a project.
- ✓ Concurrence of PUC.
- ✓ Professional study paid for by SIEC (Wind study was \$50,000) to determine technical and economic feasibility and parameters (optimal location, average hours of sunlight, recommended technology and equipment, management requirements, maintenance scheme, cost-benefit analysis with estimated rate of return).
- ✓ Land Lease: Free (see above) or at some agreed rental or purchase price.
- ✓ Partner or entity to provide initial capital investment or help SIEC to raise the funds.
- ✓ Create a Limited Liability Company (LLC). To take advantage of the Production Tax Credit, a Co-Op must create an LLC to run and maintain the project and sell power to the Cooperative which it, in turn, distributes to its members, while the LLC sells excess power, if there is any, to the mainland.
- ✓ Installation of solar array and linkages to the grid (low end estimate is around \$3.00 per watt).
- ✓ Management team with requisite skills.

McAloon Illustrative Estimates. To date, we have not undertaken the professional study that would be required though Tom McAloon has provisionally run illustrative numbers on four smaller solar arrays of 100 – 400 KW. In the most optimistic scenario, the costs to generate electricity from smallest to largest array ranged from 7.44 cents per KWh to 9.58 cents per KWh. The most conservative of the three scenarios has a cost of 16 to 20 cents per kwh. These represent the base rates. Billing would include also monthly delivery and meter charges, which account for more than half of what SIEC members pay per KWh. Currently, last month, SIEC purchased electricity from Emera for the equivalence of 9 cents per KWh including line loss and transfer charge. So, when you factor in the reality that under Emera, there would be a negligible monthly meter charge and no delivery charge, opting for solar vs. Emera doesn't compute. The monthly costs would be about what they are now, less the cable line loss and transfer costs. These estimates do not include any subsidies that might be available at the time.

Fox Island Study. The only actual study of comparable island solar array we have is from the Fox Islands. The cooperative there was contemplating a one megawatt solar array in the area of their three wind turbines. This was seen as a way to compensate for and supplement the lower summer wind, wind turbine power generation. A study was done using the students and faculty of the College of the Atlantic. Even considering the fact that the students were going to install the array, the investment company that was to fund the project said that they could not sell the solar generated power to the cooperative for less than 12.5 cents per KWh during the 7 years in which the company was scheduled to recoup its investment plus profit. After that, of course, the co-op would benefit from a substantially lower cost of production from the array.

Because of the high price per KWh, the Fox Islands co-op will either abandon the plan for now or go for a much smaller project, e.g., in the 100 KW range. Their decision is complicated also by the litigation that has arisen around various grievances over the negative externalities of the wind turbines.

Given the evidence to date, the SIEC Alternative Energy Committee cannot see a clear rationale for undertaking a more in depth analysis of a solar farm array for Swan's Island at the present time. Perhaps someone can convince us otherwise. Regarding the effect that a merger/acquisition with EMERA would have on the prospect for alternative energy on Swan's Island, it appears that the opportunities for net metering, coupled with dramatically lower electricity rates would encourage the wider use of heat pumps and bring about a reduction in the use of fuel oil for heating purposes on both Swans Island and Frenchboro. The net effect would certainly reduce the carbon footprint and simultaneously provide an economic boost to the islands' economies by freeing up more disposable income for other purposes, and aiding the sustainability of population on both islands.

2. Estimate from SGC Engineering on Cable Replacement Costs – on file with SIEC Manager.