

MARBLEHEAD MUNICIPAL LIGHT COMMISSION  
Tuesday July 25, 2017  
40 Tioga Way, 3<sup>RD</sup> Floor, Conference Room, Marblehead, MA

Minutes

Present for the meeting were: Commissioners – Chairman Hull, Homan, Kowalik, Maccario and Tumulty, General Manager Hadden, Manager of Finance Dugan, Finance Assistant Barrett and Manager of Technical Operations Coleman.

Others Present: Billy Grant and Yura Zazulin of North Shore Consultancy, Dana Weeder and Michael Fields of Winter Street Architects

Chairman Hull opened the meeting at 4:03 P.M.

**Minutes:**

**Vote #2017 - 33**

It was moved by Commissioner Tumulty and seconded by Commissioner Maccario to approve the minutes of the June 27, 2017. **Unanimous**

**North Shore Consultancy:**

Billy Grant and Yura Zazulin of North Shore Consultancy updated the Commissioners on the building renovation. There have been three scheduling delays to date: asbestos, elevator and generator. A revised finished schedule has not been determined. The Commissioners have asked Winter Street Architects to request quotes for a new roof over the upper garage and switch gear room.

**MMWEC Funding:**

**AUTHORIZATION OF POOLED LOAN PROGRAM LOAN AGREEMENT  
AND PROMISSORY NOTE**

**WHEREAS**, the Marblehead Light Department (“MMLD”) is desirous of designing, demolishing and renovating it’s offices located at 80 Commercial Street, Marblehead, Massachusetts (“Renovated Office”); and

**WHEREAS**, the Renovated Office will be used in connection with the business of the MMLD; and

**WHEREAS**, the General Manager of the MMLD has determined that it is prudent and in the best interests of the MMLD to finance the costs of the Renovated

Office through funds obtained by a loan from the Massachusetts Municipal Wholesale Electric Company (“MMWEC”) through MMWEC’s Pooled Loan Program.

**WHEREFORE**, it is voted:

**Vote #2017 - 34**

It was moved by Commissioner Tumulty and seconded by Commissioner Maccario that the Board hereby accepts the recommendation of the General Manager and hereby finds that it is prudent and in the best interests of the MMLD to finance the costs of the designing, demolishing, building and renovating it’s offices, through funds obtained by a loan from MMWEC under MMWEC’s Pooled Loan Program; and

hereby authorizes and approves the MMLD’s borrowing of funds from MMWEC, from time to time, pursuant to MMWEC’s Pooled Loan Program for the purposes stated in this vote; and

hereby approves the Pooled Loan Program Loan Agreement between MMWEC and the Town of Marblehead acting by and through the MMLD (“PLP Loan Agreement”) substantially in the form of the PLP Loan Agreement presented to the Board at this meeting and made a part of the record of this meeting; and

hereby authorizes the General Manager to execute and deliver the PLP Loan Agreement substantially in the form of the PLP Loan Agreement presented to the Board at this meeting, with such changes and amendments thereto as the General Manager, with the advice of MMLD counsel, may deem necessary or appropriate; and

hereby approves the Promissory Note Pooled Loan Program Loan Agreement (“Note”), to evidence the obligation to repay the loan made by MMWEC to MMLD under the PLP Loan Agreement, substantially in the form of the Note presented to the Board at this meeting and made a part of the record of this meeting; and

hereby authorizes the General Manager to execute and deliver the Note substantially in the form of the Note presented to the Board at this meeting, with such changes and amendments thereto as the General Manager, with the advice of MMLD counsel, may deem necessary or appropriate; and

and hereby directs the General Manager to cause the MMLD to perform all of its obligations under the PLP Loan Agreement and the Note at such time as the General Manager determines is appropriate to carry out the intent of this vote; and

hereby authorizes the General Manager, with the advice of MMLD counsel, to execute, accept, deliver and/or perform obligations for such further documents, or agreements and take any and all further actions, as the General Manager deems may reasonably be required to carry out, give effect to and consummate the PLP Loan Agreement and the Note. **Unanimous**

**Vote #2017 - 35**

It was moved by Commissioner Tumulty and seconded by Commissioner Maccario that the Board hereby authorizes the General Manager to take any and all further actions the General Manager deems may be required for the purposes of accomplishing the PLP Loan Agreement and the Note. **Unanimous**

**Financial Report:**

Manager of Finance Dugan distributed to and discussed with the Commission the May 2017 Operating Statement and the June 2017 Accrued Operating Statement.

The Purchased Power Adjustment for June 2017 remains at .16 cents per Kwh for all customers.

Manager of Finance Dugan informed the Commissioners that Goulet, Salvidio & Associates P.C. has completed the 2016 financial audit.

**General Manager's Report:**

General Manager Hadden informed the Commission that Tim Kucab of Tighe & Bond is working with Sue O'Connell of the DEP to resolve the Wilkins stack issue.

The LED street light conversion is well on its way. The crews started on West Shore Drive and Pleasant Street. The main streets will have a 150W bulb and the secondary streets will have a 70W bulb. The fixtures have a 10 year warranty.

Colin Coleman informed the Commissioners that the Eco-net replacement program is going well with about half of the 250 Eco-nets replaced to date.

General Manager Hadden will contact John McGinn, Town Administrator, to discuss the Ocean Avenue underground project for the possibility of adding one more street light for public safety reasons. The project is currently slated to have four street lights.

General Manager Hadden informed the Commission that he is in the process of taking bids to replace the line bucket truck with a replacement cost of about \$175,000.00.

General Manager Hadden informed the Commission that MMLD will contract with SOS Mobile for the crews to have tablets which will modernize the work flow process. Middleton and Groton report that the SOS Mobile application has been very effective for their operations.

### **NREL Presentation:**

National Renewable Energy Laboratory (NREL) of Denver, Colorado is a national laboratory of the U.S. Department of Energy. Commissioner Kowalik presented to the Commissioners NREL's draft scope of work as follows:

#### **Background**

The Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is the only DOE national laboratory solely dedicated to advancing renewable energy (RE) and energy efficiency (EE) technologies and applications. Since its inception, NREL has supported both the public and the private sectors in integrating EE and RE within energy systems to lower energy use and to meet remaining energy needs with resources having minimal environmental impact. NREL is now a sought after resource for EE, RE, and energy integration expertise.

Marblehead Municipal Light Department (MMLD) is a municipally-owned electric company providing electric power to the citizens and businesses of Marblehead, Massachusetts. MMLD is interested in working with NREL to understand the technical and economic viability of renewable energy in Marblehead.

### **Project Description**

The goal of this project is to assess the technical and financial viability of adding RE generation to MMLD's electrical system and prioritize technologies with potential sites; identify opportunities for emerging technology demonstrations; identify the potential impact of increasing electric vehicle deployment; and understand how RE and storage can contribute to community resiliency. Potential future NREL support could provide similar assistance to Massachusetts Municipal Wholesale Electric Company (MMWEC), which includes twenty Massachusetts municipal utilities.

The following tasks will be performed:

- 1. Assessment of Renewable Energy and Storage Techno-Economic Feasibility**  
NREL will conduct a screening to evaluate the technical and economic feasibility of potential RE and storage opportunities in Marblehead, and prioritize potential technologies and associated locations to meet varying RE goals. This task will help MMLD to understand the economics of achieving different penetrations of RE.

NREL will evaluate opportunities for solar photovoltaics (PV), wind (onshore and offshore), ground source heat pumps (GSHP), and battery storage.

MMLD will provide:

- a) Potential locations for RE and estimates of space available at each location.
- b) MMLD 15 minute load profile for one year.
- c) Wholesale energy prices for the same one year period that RE generation will offset.
- d) Information on other value streams that may be available to RE or storage, such as incentives, ancillary service markets or capacity markets.

NREL will work with MMLD to define analysis assumptions, including:

- a) Cost assumptions for RE and storage.
- b) Ownership models (MMLD-owned or 3<sup>rd</sup>-party financed).
- c) Economic parameters including analysis period, discount rate, utility escalation rate, and inflation rate.

NREL will conduct a site visit to assess potential sites, and then use existing modeling tools and renewable energy resource data to evaluate five scenarios for MMLD:

- a) Minimum lifecycle cost: This scenario minimizes the cost of energy to MMLD over the analysis period.
- b) 25% renewable energy: This scenario provides the least-cost combination of renewables to generate 25% of MMLD's energy requirements from RE.
- c) 50% renewable energy: This scenario provides the least-cost combination of renewables to generate 50% of MMLD's energy requirements from RE.
- d) 75% renewable energy: This scenario provides the least-cost combination of renewables to generate 75% of MMLD's energy requirements from RE.
- e) 100% renewable energy: This scenario provides the least-cost mix of renewables to generate 100% of MMLD's energy requirements from RE.

For each scenario described above, NREL will provide MMLD:

- a) Prioritized list of technologies and sites recommended, including technology type, size, and energy production.
- b) Economics including the initial cost, annual cost/savings, and lifecycle cost
- c) Dispatch strategy for the recommended assets.

Note that the described work only includes energy balance modeling to assess the ability of RE generation to meet load. It does include any power flow modeling to identify RE interconnection potential; this could be conducted in follow-on work.

**Deliverable:** NREL will provide a written report (~15 pages) or slide deck (~25 slides) summarizing analysis assumptions and results for each of the scenarios outlined above. The report will provide a prioritized list of options to meet varying levels of renewable energy generation. NREL will also provide a spreadsheet of modeling results. The budgeted cost includes two trips to Marblehead: one for initial site assessment, and a second to discuss study findings.

**Schedule:** Draft results will be delivered three months after receipt of all required data from MMLD. Final results will be delivered 1 month after receipt of MMLD comments on draft results.

**Budget:** \$90,000

## **2. Emerging Technologies Evaluation**

NREL will identify up to ten emerging technologies that may be good candidates for demonstrations in Marblehead, such as building energy efficiency measures, wave power, or tidal power. NREL will outline the expected costs and potential energy generation of each technology, and recommend the top three technologies for MMLD's consideration. If MMLD elects to conduct a technology demonstration, NREL can support measurement and verification (M&V) of the technology under a future contract. M&V is not included here.

**Deliverable:** NREL will provide a slide deck (~10 slides) and webinar summarizing technologies MMLD could consider for technology demonstrations.

**Schedule:** A draft slide deck and webinar will be delivered two months after kickoff. A final slide deck will be delivered 1 month after receipt of MMLD comments on the draft slide deck.

**Budget:** \$25,000

### **Vote #2017 - 36**

Moved by Commissioner Tumulty and seconded by Commissioner Homan to move forward with NREL's proposal #1 and #2 subject to:

1. A discussion with Massachusetts Municipal Wholesale Electric Company (MMWEC) for their input, ongoing involvement and financial support.
2. Contact American Public Power Association (APPA) to inquire whether comparative services exist and if the NREL project qualifies for APPA DEEDS (Demonstration of Energy & Efficiency Developments) funding.
3. Discussion with Mass Clean Energy (MassCEC) about their grant programs in the MassCEC Renewable Energy Trust Fund. MMLD would be required to join as a permanent participant with fees fixed by the State legislature at .0005/kwh for all kwh's billed by MMLD. Once MMLD becomes a participant in the trust fund, MMLD could submit applications for renewable energy projects. **Unanimous**

### **Joseph Kowalik NREL:**

#### **Vote #2017 - 37**

Moved by commissioner Tumulty and seconded by Commissioner Homan to reimburse Commissioner Kowalik for expenses incurred towards the NREL facility visit.

**Unanimous**

**Adjourn:**

Chairman Hull requested a motion to adjourn.

**Vote #2017 - 38**

It was moved by Commissioner Tumulty and seconded by Commissioner Maccario to adjourn at 6:45 P.M. **Unanimous**