

ENVIRONMENTAL COMMISSION MEETING

February 6, 2017

Members Present

D. Dittrick
D. Fashano
P. Glawe
J. Hendricks
S. Iannacone
A. Kraynak
M. Leone
C. Matlon
D. Wilson

Liaison

J. Ferramosca –Absent-Excused (Representing the Planning Board)
T. Gallagher – Absent-Excused

Members Absent

R. Sarrel

Chairman Wilson called the meeting to order at 7:45pm according to the Open Public Meetings Act.

Approval of Meeting Minutes

- Reviewed meeting minutes from January 9, 2017. Secretary Kraynak asked if the presentation from January's meeting should be attached to the meeting minutes. Member Glawe suggested that the handout from this meeting to be attached to February's meeting minutes. Secretary Kraynak asked if there was a motion to approve the meeting minutes. Member Hendricks made a motion to approve the meeting minutes. Chairman Wilson second the motion. All members were in favor.

Correspondence

- Reviewed Morris County Soil Conservation District Soil Erosion and Sediment Control Plan Certification. Cedar Village East Hanover Avenue (230 Hanover Avenue) Block 601 Lot 1
- Reviewed 21st Annual NJ Land Conservancy Rally Friday, March 17, 2017, Hyatt Regency Hotel, 2 Albany Street, New Brunswick, NJ

Certified Mail

- None.

Old Business

- Energy Fair – 2017- Member Dittrick said that 10 vendors will be attending the Energy Fair. Secretary Kraynak asked if the Environmental Commission will have a table at the fair. Member Dittrick said yes. The Energy Fair is Saturday, February 18, 2017 from 9am – 1pm at the Hanover Township Community Center.

New Business

- Hanover Township Day – 2017 – Secretary Kraynak asked the commission if they had any ideas what item we could purchase for a free give away at Hanover Township Day. Member Glawe said we do have to come up with something to be handed out. Member Leone suggested having a poster board about the possible solar project at the municipal building. Member Leone also suggested maybe giving an LED light bulb, or LED flashlight.
- Shred Day – 2017 - All members discussed possible dates for the Shred Day Event at Employment Horizons. All members agreed after tax season for the Shred Day event to possibly be April 22 or April 29.
- Trees – Member Glawe said that he got from Liaison Gallagher that from the tree fund their thinking of planting a bunch of trees in town. Member Glawe said that there looking for if the Environmental Commission can recommend some sites for the trees to be planted. Member Glawe said that they want the trees to have a canopy effect. Member Matlon suggested to plant trees on the opposite side of the street where the power lines are located. Member Matlon also suggested to plant the trees in a cluster. Member Iannaccone also suggested if you want to get permission from the property owners to plant trees beyond the power lines. Member Matlon volunteered to recommend sites around town where trees can be planted.
- Florescent Light Bulbs- Member Matlon said that she has the long florescent light bulbs and she would like to know where to get rid of the lights. Member Glawe suggested at the MUA Hazardous household waste day.
- Solar Microgrid Project – Below is a possible solar microgrid project for at the municipal building. All members discussed at the meeting. The handout distributed at the meeting is attached at the end of the meeting minutes.

Adjourn

- Secretary Kraynak asked at 8:15 pm if there was any further business if not is there a motion to adjourn the meeting. Member Hendricks made a motion to adjourn the meeting. Chairman Wilson second the motion. All members were in favor.

Hanover Township Solar Microgrid Project

What should Hanover Township do?

The Environmental Commission and Green Team for Hanover recommend that Hanover Township explore the potential for the development of a ***solar based integrated electric battery storage micro-grid*** to serve the electric needs of the Township Facilities.

Why should Hanover install solar generation? E⁴

- ***Emergency Power***—Produce stand by electric power for emergencies such as super storm Sandy. It would provide increased resilience for the critical operations of the Municipal complex. The standby generators would have to operate far less during an extended electric outage reducing fuel procurement requirements.
- ***Economics*** -- No out of pocket costs. System would be funded by others with some of the funding from the BPU. Fixed electric cost at or below current rate for term of the contract. No maintenance or repair responsibilities – this will be the obligation of the integrated solar and battery system owner. Long term electric cost savings to the Township.
- ***Environmental Benefits***—Once operational, project would produce a substantial reduction in the carbon emissions from generating plants that supply electricity for the Municipal complex (the “Carbon Footprint”) of the Township facilities.
- ***Educational*** – Project would include an electronic display showing real time inflow and export of electricity, energy savings, and ongoing environmental benefits. The project would add to Sustainable Jersey point score. The presence of the solar arrays would provide a visual display of the Township’s progressiveness.

How is it different from the previous Morris County solar program?

The basic difference is how it is financed. The Morris County the solar program developed several years ago issued bonds and took on the risk that Solar Renewable Energy Certificates (SREC) prices would stay above a certain level. Unfortunately the solar market during that period became oversupplied with SREC’s and their price collapsed, creating financial problems for the project financing.

The program we are proposing puts all the risk on the project developer not the Township. The project would be financed and maintained by an investor group that can

utilize investment tax credits and the accelerated depreciation allowed for installed cost of the system. The system developer would also receive revenue from the sale of electricity and the sale of Solar Renewable Energy Certificates. The only obligation the Township would have would be to purchase the electricity supplied at the contract price for the term of the Power Purchase Agreement.

What would the system look like?

A microgrid is usually comprised of a group of buildings that can separate from the electric distribution grid when there is a grid outage, and continue to supply its electric needs from onsite electric production assets. The micro-grid would be comprised of several major components as follows:

1. Solar arrays located on the ground on the land adjacent to the west side of the township complex, solar arrays on parking awning structures in the parking areas, and a roof array on the Community Center.
2. A battery storage system sized appropriately to serve the peak shaving and emergency backup needs of the Municipal complex.
3. An automatic transfer switch which would operate to separate the Township electric system from the utility's electric grid during a utility system outage.
4. A control system that monitors and controls the state of charge of the battery system, the inflow and export of electricity, the status of the existing standby generator, and coordinates the operation of each to provide maximum energy cost savings and operational reliability.

Other Info

Normal Operation

The solar systems would operate under the Net Metering rules currently in place in New Jersey. During hours when the solar arrays produced more electricity than was needed in that building or the Municipal complex, the excess electric would charge the batteries as needed, or export the electricity to the grid for credit at retail electric rates. Credits earned would be used when the solar systems produced less electricity than was needed by each building or the Municipal complex as a whole. In the event of an extended electric utility outage the operation of the solar system, the battery system and the existing standby generators would operate in a coordinated manner to minimize the fuel needs of the generators. The battery storage system could automatically shave a portion of peak electric demands, further reducing energy costs.

Financing

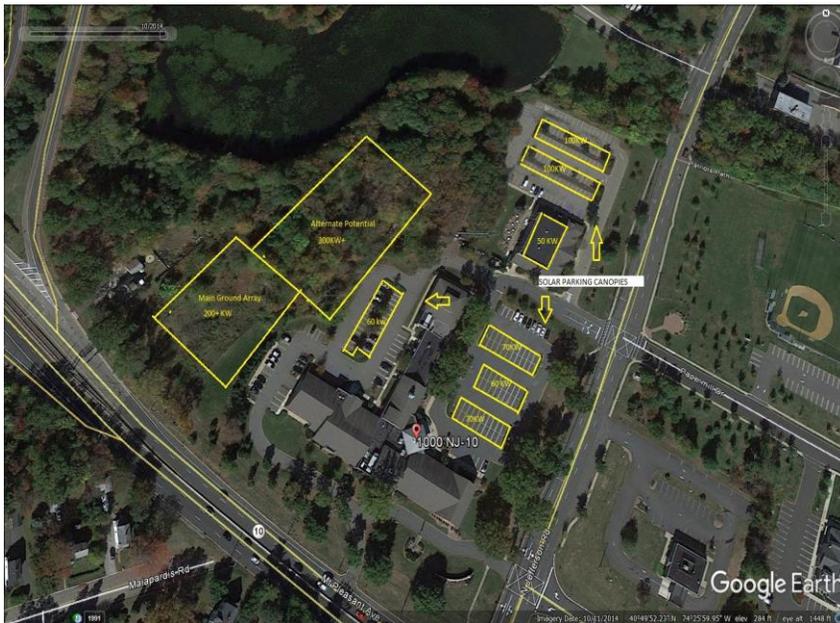
Investments in solar systems and battery storage receive certain tax benefits that include a 30% Investment Tax Credit and five year accelerated depreciation. These benefits are not usable by the Municipal government as a tax exempt entity. Utilize third party financing as a part of the procurement process to allow these tax benefits to be utilized. In capturing these benefits the financing entity will incorporate the financial benefits to lower the rate for the sale of the solar electricity produced and sold to the

Township. The contract for the construction of the integrated solar and battery system and the supply of electricity from the solar generation would be expected to be for a period of 20 – 25 years.

System Sizing

The combined size of the solar arrays would be calculated to supply a high percent of the combined annual electric consumption of the Municipal Buildings. This amount has historically been in the range of 1,000,000 to 1,300,000 kWh per year. The installation of LED lighting will reduce this amount about 10% to indicate a likely maximum solar system capacity of between 800KW and 1,000KW. The larger system size would produce sufficient electricity to support the conversion of some Township vehicles to electric drive at a future date.

Array Locations



Sample canopies and roof mount installations



Next step

We request Hanover Township authorize \$10,000 for the hiring of a consulting engineer with design expertise in micro grids in order to get the project started. These dollars would be carried as a line item in the Project RFP process keeping the Township cash neutral.