



TO: Town of Wayland Energy Initiatives Advisory Committee
FROM: Steven Weisman, Peregrine Energy Group, Inc.
DATE: March 3, 2015
RE: Peregrine review of Ameresco's proposed solar projects

Overview

Peregrine Energy Group, Inc. ("Peregrine") has been engaged by the Town of Wayland as an advisor to review solar projects proposed by Ameresco, Inc. Peregrine is a Boston-based energy consulting firm whose core business is assisting cities and towns as their owner's representative to identify, plan, and implement clean energy projects. Peregrine has no business affiliation with Ameresco. The Town of Wayland has procured our services directly and is paying for them using an owner's agent technical assistance grant from the Massachusetts Department of Energy Resources.

Ameresco is proposing to design, procure, build, own, and operate photovoltaic (PV) power installations at four Town-owned locations, with the Town purchasing the power generated at that site under a Power Purchase Agreement ("PPA"). Solar photovoltaic generation technology converts sunlight to electricity, which can then be used at the point of generation or, as in the case of the proposed Ameresco projects, be transmitted onto the utility power distribution network and credited to the Town.

As the owner of the project, Ameresco will secure the funds for construction and recover its capital costs, financing costs, and operating costs by selling power to the Town. The Town will purchase and pay for all power generated by the project. Ameresco's all-in price per kilowatt-hour (kWh) generated and purchased by the Town has two components. The first is a unit price per year for power, escalating at 2% a year for the 20 year PPA term. The second component is a price adder per kWh that covers the \$30,000 cost of annual property taxes the Town is asking Ameresco to pay, as well as the cost for a letter of credit for the costs to decommission and remove the equipment at the end of the PPA term.

The four proposed PV installations on Town properties are a rooftop installation at the DPW building and ground-mounted "canopy" installations over parking lots at Wayland High School, Wayland Middle School, and the Town Building. The combined capacity of the four installations is 1,288.88 kW. The total estimated project cost investment by Ameresco is \$4,454,843. The combined first year output will be 1,537,144 kWh.

The Energy Committee has asked Peregrine to focus its review on the technical merit of the project as proposed and financial merit of the project (i.e., will it produce savings for the Town). Peregrine will also review the PPA proposed by Ameresco to identify legal and contract issues.

In summary, Peregrine finds that:

- The technical details of the proposed project are sound, and it should produce the power Ameresco is anticipating.
- The project cost presented by Ameresco is reasonable for the installations proposed.
- The price to be charged to Wayland for the power produced is consistent with the project costs.
- Wayland's 20 years savings from net metering credits should significantly exceed the Town's cost to purchase the power from Ameresco.

Technical review findings

The Peregrine team includes Zapotec Energy, Inc., a Cambridge-based design build PV contractor and consultancy, led by Paul Lyons, P.E. Zapotec has 20 years of ongoing hands-on experience in PV system design and customer support. It also includes the law firm McCauley-Lyman to address legal questions.

Zapotec has reviewed the PVSyst modeling runs provided by Ameresco for each of the projects to confirm that the amount of generation proposed is consistent with the design details. They have confirmed that the models are accurate and should produce the power output that Ameresco is projecting. We conclude, therefore, that the technical viability of the project should not be an issue. And given the structure of the agreement as a PPA, Ameresco will carry all performance risk anyway.

Financial review findings

Project cost:

Project cost is typically presented as cost per installed watt. In the case of the proposed projects at four locations, the blended total cost per watt will be \$3.46. Looking at the individual projects,

- The DPW rooftop installation has an installed cost per watt of \$2.18. In our experience, this is a reasonable price to pay for a project of this size.
- The three ground-mounted carport/canopy projects have a cost per watt of \$3.80 (Middle School), \$3.67 per watt (High School), and \$3.78 per watt (Town Building). Zapotec again feels that this pricing for the canopy installations, which have large structural racking systems that require significant foundations and site work, is quite competitive.

The total cost per watt is weighted toward the cost of the carport/canopy installations, which comprise over 80% of the total project capacity in kW. Therefore, we believe that the project cost is reasonable for the installations proposed.

Price per kWh:

As noted above, the proposed price per kWh has two components: a power charge of \$0.1280/kWh (in year one) that escalates at 2% per year for the 20-year term of the PPA; and a Tax Adder equal to a flat \$0.0195/kWh that covers the cost of the Payment in Lieu of Taxes (PILOT) charge of \$30,000 per year that the Town wants to receive from Ameresco.

As is typically the case in such projects, any payments that a customer requests from the developer for lease payments or, in Wayland's case, taxes, result in an increase in the net power price that the customer pays because these municipal charges increase the total cost of the project. Ameresco will increase the price of power produced and sold to the Town if the Town requests a higher PILOT charge and will reduce the price it will charge for the power if the Town lowers the PILOT. Ameresco has structured the total price so that power charge and adder are presented separately, with only the power charge subject to the 2% escalation.

Peregrine has seen that the prices charged per kWh for the same project or for different projects by developers can vary significantly. Factors that cause these variances include: differences in project development costs, materials and construction costs, financing costs, assumptions about the future value of SRECs, timing, the proposed price structure (i.e., if it is level or escalating over the term), and the developers' business strategy. The addition of lease or PILOT payments to a project will increase the price since that additional developer expense must be recovered. Also, carport/canopy projects will typically cost more than rooftop projects or landfill projects due to the cost of the canopy support structure.

Without the ability to compare cost components in detail between different projects and offers, understanding why costs vary is not possible. That said, we observed that Ameresco provided a high level of transparency in its financial projections, as well as a large amount of pricing and savings back-up information, especially compared to other developers and to other projects for other towns that we have seen. We did not identify individual cost components that were unreasonable in the information provided.

Project net metering credits and savings to Wayland:

Savings to Wayland will be the difference between the all-in cost paid to Ameresco for the solar power and the net metering credits that the Town receives on its utility bills for transferring the power to the grid instead of consuming it locally. These savings will depend on the difference between the PPA price

and the rate used to calculate the net metering credits. The PPA will set the price paid to Ameresco. The electric utility will set the rate for the credits.

Ameresco has been requesting that NSTAR place its PV project customers on either the B5 or A9 tariff because these rates currently create the greatest opportunity for customer savings. Ameresco requests the specific tariff desired as part of the process of getting NSTAR's permission to interconnect the project to the grid.

- The B5 tariff or rate is Eversource Energy's (NSTAR's) Optional Time of Use rate provided to small customers that has peak and off-peak pricing for different hours seasonally. Peak pricing is significantly higher than off-peak pricing, because of differentiated costs to Eversource for delivering power during these periods. A net metering credit against the B5 peak rate, at current prices, will yield the largest amount of net metering credits to Wayland. Ameresco has advised that it has previously secured this rate for the Town of Lexington and several MA Department of Transportation projects, and intends to seek this rate for the Wayland projects.
- The A9 rate is an Eversource small business rate that Ameresco often places virtual net metering customers on. This rate is equal to the Standard Offer rate for power. Again, at current prices, being on the A9 rate also will result in larger net metering credits to Wayland, though not as high as the B5. Ameresco has stated that it obtained this rate for several significant solar projects that the company has undertaken for other towns, including Sudbury (the 1.5MW landfill project), Acton (a 1.5MW landfill project), Natick (a 650kW project), Newton (a 650kW project), and Dartmouth (a 6MW project).

Ameresco is pledging to Wayland that if it cannot secure either a B5 or A9 rate for the meters on the four Wayland installations from Eversource, it will not proceed with construction without the consent of the Town. This is an important protection that Ameresco is offering to the Town.

Ameresco has suggested that Wayland use a current weighted annual average B5 rate escalating at 2% per year to calculate net metering credits and savings over the term of the PPA. In considering both the B5 and A9 rates as the source of credits and ultimately the Town's net savings, it is important for the Town to remember that the utility adjusts the rates every six months to reflect projected generation and delivery costs. The rates in force for January – June 2015 include a considerable fuel cost adjustment factor. Current utility electricity rates are at very high levels as of January 2015 due to a spike in the cost of natural gas, which is the primary fuel for Massachusetts generators. There is no guarantee that these high electricity prices will continue indefinitely, and many supply experts are anticipating that falling natural gas costs are likely for the region, with electricity prices returning to the lower levels of 2014.

A more prudent conservative perspective would be to anticipate that future average utility prices over the next 20 years may not escalate from current prices, but instead from 2014 prices. To be safe, therefore, Wayland's long-term net metering credit and savings projections should reflect this perspective. This more conservative starting point in calculating savings would use the tariffs in force prior to this winter as the starting point. This analysis will still show net savings to the Town over the 20 year PPA term.

The estimated average 2% price escalation suggested by Ameresco for future energy costs is reasonable and consistent with historic changes in energy prices, though individual years will vary above or below the average.

Peregrine has received and reviewed the sensitivity analyses of Ameresco's financial model prepared by Wayland's Energy Committee. This analysis demonstrates that Wayland should generate net savings if the utility allows either the B5 or the A9 tariff for net metering the solar production purchased from Ameresco. In other words, the rate under both of these tariffs is higher than Ameresco's proposed contract price, meaning that the savings from the net metering credits received by Wayland should exceed the cost of buying solar power from Ameresco. This analysis also shows Wayland seeing net savings from the project in every year under both the B5 and A9 tariffs, using 2014 fuel cost rates as the starting point with the likely 2% annual escalation.

Impact of potential regulatory change on credit projections and savings:

Could regulatory changes adversely impact Wayland's ability to realize these benefits?

B5 Tariff

While Ameresco has obtained this rate for other public sector entities pursuing net metering, Peregrine has no information about how extensive this practice is and is not aware of large numbers of electricity customers that choose this rate for this purpose. The optional B5 time of use rate is intended to give customers the advantage of savings in electricity costs if they can move their use to off-peak periods where it is less expensive for Eversource to supply service, but it requires that customers pay considerably more for service during peak periods.

The intent of this rate is not for net metering renewable energy generation projects. Peregrine cannot say with confidence whether this rate will continue to be available or will be withdrawn from use to support net metering. We have heard it referred to as a "loophole" that might be closed by regulatory action at some point in the future.

That said, prior regulatory and legislative modifications to solar incentive programs in the Commonwealth typically have applied to future projects, rather than being retroactive for existing

projects. While this practice might not be honored in the future, it is a reasonable assumption that a proposal to limit access to the B5 rate for net metering purposes would apply only to new projects, rather than operating projects.

A9 Tariff

This is the rate most typically applied for net metering. Over the past four years, net metering at full retail rates with the ability to carry savings forward indefinitely has been the foundation of Massachusetts' renewable energy policies for solar energy. The goal of the policies, which have been highly successful, has been to increase the installation of photovoltaic systems broadly and, in particular, to encourage municipalities and other government entities to enter into long-term contracts that are built on the availability and continuation of net metering.

Again, there have been and continue to be policy discussions, in part driven by the state's distribution utilities, about whether current net metering practices should continue indefinitely due to concerns about cross-subsidization of cost and whether there are safe limits to the percentage of power supply coming from intermittent generators delivering power on the distribution network. While there are no guarantees, we do not expect that net metering will go away, given the number of municipal projects and contracts in place in Massachusetts already. The uproar from such a "bait and switch" would likely be politically unacceptable.

While there may be changes in Massachusetts net metering policy moving forward, changes affecting municipalities, should they occur, will most likely be gradual and include some grandfathering of existing projects. If Wayland proceeds with the project under the current regulatory regime, it will be part of a large group that will likely work together to protect shared interests.

Finally, the Town may want to explore with Ameresco whether there are any additional ways that they can mitigate potential regulatory risks.

Legal review findings

Peregrine's partner McCauley-Lyman is still completing its review of the proposed power purchase agreement from Ameresco.