

With an uncertain future, GELD management monitors power markets very closely

GELD management and the Board make challenging decisions on a regular basis. In an environment where the future is uncertain, the complexities of these decisions are also ever changing.

The current challenges facing our industry are so severe that the average electric rate increase from 2015 to 2016 for the customers of investor owned utilities in Massachusetts (such as National Grid and Unitil) was 22%. During this same time period GELD was able to keep your rate increase below 3%. As coal and nuclear power are being phased out of New England's power portfolio we are doing everything we can to avoid the rate increases of the utilities surrounding us.

GELD maintains a time tested strategy that can preserve benefits as the markets around us change and transition with the political winds. Management spends a considerable amount of time analyzing various options while considering the risks of what the future markets will look like. A good illustration of this is the recent changes regarding the analysis of putting a 2 megawatt (MW) generator in our former garage structure. Management has been considering a 2 MW natural gas generator for years. Having local generation has the benefit of avoiding certain costs plus increasing reliability. The downside is the investment cost of approximately \$2 million. In previous analysis of a 2 MW generator various sites had been considered. Our ideal site at the substation located on Lowell Road, does not have access to natural gas. The next preferred site is our current location on Station Avenue because we would have the option of switching the generated power to all four corners of

our downtown location until the potential sale of our former garages yielded no proposals that were financially viable for our ratepayers.

Initial possible permitting discussions were so positive for a generator in our old metal garage that we commissioned an ambient sound analysis as the first step in the permitting process. Everything changed a couple weeks after we received the results back from the sound analysis when the forward capacity market for 2020 and 2021 cleared at a much lower price than everybody had expected. *For more information see the "What is the Forward Capacity Market" insert.* Before GELD would proceed with a \$2 million project we would need to know that the economics would be beneficial to the ratepayers over the long term. The results of this auction pushed the return on investment out so that an 8 year breakeven was the best situation we were looking at. GELD management is looking for a breakeven point of under five years before they would commit ratepayer money to a capital project.

The capacity market has dropped substantially two years in a row although experts were predicting it would increase last year and drop a little this year. This is the primary reason that the whole house generation program which we were looking at in December of 2015 has become uneconomical at this time. This idea will be continually analyzed and the program may have a future when the economics of the program are fitting. At the present time, the only program that looks economically viable is for people who already have a whole house generator with an automatic disconnect to operate that generator when we would call on them.

Even as we face an uncertain future, your reliable electric supply at the lowest price remains our mission.

What is the Forward Capacity Market?

The Forward Capacity Market (FCM) ensures that the New England power system will have sufficient resources to meet the future demand for electricity. Forward Capacity Auctions (FCAs) are held annually, three years in advance of the operating period.

Understanding capacity payments

"Capacity" payments are currently based on the single peak hour—usually in the summer on the third day of a heat wave—which is determined by ISO-NE, the regional transmission organization that oversees the operation of New England's bulk electric power system and transmission lines.

GELD is responsible for paying our portion of that peak hour multiplied by the Forward Capacity Auction (FCA) price each month for 12 months (from June to June). For example, the FCA for 2017/2018 is \$7.03. GELD's "peak" for 2016 was 17,561 kilowatt hours (kWh). So, GELD's capacity payment each month for 2017 thru June would be approximately \$126,000 per month. However, GELD also has ownership interests in different power supply projects where we **receive** capacity payments, which helps to offset these monthly obligations.

The FCA/capacity pricing is one of the reasons that GELD management has to look closely at the programs we offer and the projects we decide to participate in to be sure the economics match our long-term goals.



Groton's solar farm

An update on the actual costs and benefits of the Groton Landfill Solar Farm

For a quick refresher, there are now 9,310 solar panels spread over the closed landfill on Cow Pond Brook Road that produce 2.28 megawatts (MW) of electricity at peak operation. There were multiple hours this past fall when over 25% of the town's electricity was being provided by our solar farm. The farm was built by the company Ameresco with no upfront cost to the ratepayers of Groton.



We purchase the power output for a fixed price of 5.5 cents per kilowatt-hour (kWh) for the next 25 years. As a point of comparison, the average Day Ahead Peak power price we have been paying for market power since June when the solar farm went live has been 3.79 cents/kWh. When GELD purchases power, in addition to the generation cost there are two large costs—transmission cost and capacity cost. Because the solar farm has been producing a portion of its output during peak hours June through September there has been an additional benefit to Groton in the form of avoided costs. Avoided costs are those costs GELD would have incurred if we didn't have the solar farm to offset the costs. Both June and August saw substantial solar

output during our peak hours resulting in reduced transmission and capacity costs. The two peak hours during those two months generated 94% of our benefits for the year. Total transmission avoided costs during the four summer months was over \$40,000, but the big story happened on August 12 during the hour ending at 3:00 p.m. During that hour, New England reached their "peak demand" for the year while our solar farm was producing 1.6 MW of electricity.

What is peak demand?

Peak demand is a single hourly period which represents the highest point of customer consumption of electricity for the entire New England region.

By not purchasing that electricity through our substation we will see a savings in excess of \$135,000 from June of 2017 to May of 2018. So last summer GELD received a total benefit of over \$175,000 in avoided costs. Another way of saying this is the average ratepayer in Groton has a bill that is \$37 lower for the next year just because of the solar farm. This is one more advantage GELD ratepayers have over the surrounding communities. Unfortunately as more and more solar enters the New England market, the peak hour will be pushed into the evening lowering these benefits but we anticipate substantial avoided costs to continue for at least the next couple years.

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Take advantage of our auto payment option (administered through our office) Stop by or visit our website for more information www.grotonelectric.org.

Go paperless!

View and pay your electric bill on-line in 3 easy steps:

1. Go to <https://GELD.billtrust.com>.
2. Click "Enroll Now"
3. Enter the enrollment token found on your bill

The gift of warmth

"Give the Gift of Warmth" for those in need. The Good Neighbor Energy Fund is administered through the Salvation Army. Visit their website at www.magoodneighbor.org.

If you are having trouble paying your bill, one of these agencies may be of help:

Fuel Assistance

978-448-1170 (for seniors);
978-448-1100 (for non-seniors)

Good Neighbor Energy Fund

(managed by the Salvation Army):
339-502-5900

The Groton Trust Funds

Contact Karen Tuomi at 978-877-6787