

New 4/40 Rate Option

GELD's newest electric rate option, introduced last summer, has been designed using your historical data.

If you have been reading our newsletters or watching the GELD updates on the Groton Channel, you are aware of GELD's rate challenge. In case you have missed it, please read the "Rates-How to make them fair" article on the back first. This new rate is called the **4/40 time of use rate**.

For the last two years, GELD and its consultants have been analyzing customer's historical data and working on a rate design that would be both fair and understandable. During the summer of 2020, we

The way this rate was designed, our average customer with an average-use profile would see a minimal change in the dollar amount of their monthly bill. Customers who do not use a lot of power between 4 and 8 pm and customers who can shift their electric use out of that time period will see their electric bills drop. Customers who use a lot of power during those hours would be paying their true cost of power which could be substantially higher than what they are paying now.

4/40 Time of Use Residential Rate	Generation Rates	Distribution Rates	Total Rates	Early Pay Discount	Total with Early Pay	Customer Charge
8 pm-4 pm	4¢	4¢	8¢	1.3¢	6.7¢	6.25
4 pm-8 pm	40¢	4¢	44¢	1.3¢	42.7¢	

This new 4/40 rate structure accomplishes multiple things in the changing world in which we find ourselves. It addresses a fair rate structure and assigns costs to those customers using the electricity during those peak times.

did an initial test of the rate with 60 customers. The results were impressive. The test customers changed their usage patterns for electricity so much that if we could get the same results with the entire town, GELD's transmission and capacity costs could drop over \$500,000, which is 14.2% of the total costs.

It also gives those same customers a way of reducing their costs by shifting use out of the peak times. For example: Electric Vehicles (EVs) can draw substantial amounts of electricity when customers use fast chargers (aka Level 2 chargers). Customers who can charge EVs during the 20 hours a day when costs are low would pay those lower generation costs (4¢ per kilowatt hour), while customers who need to charge during the peak hours of 4 and 8 pm would pay those peak generation costs (40¢ per kilowatt hour). This rate would also incentivize customers interested in energy storage (such as batteries or power walls) to use that storage in a way that would benefit both themselves and GELD.

This 4/40 rate structure is a true representation of where GELD's costs are incurred and would fairly distribute those large evening costs over the customers who use electricity in the evening where our capacity and transmission costs occur. Under this rate, for 20 hours a day, customers would pay about half what they were paying under our standard residential rate. From 4 to 8 pm the generation portion of their bill would increase ten-fold.

During the summer of 2021, we plan on testing this rate with more customers before we plan to introduce it to all customers next year.

This year we are working with energy researcher Dr. Andrea La Nauze at the University of Queensland (formerly at the University of Pittsburgh) to scale up the pilot program. As part of the evaluation, Dr. La Nauze has developed a survey to help us understand how our new rates might affect different groups of customers and how we can better help our customers adjust to the new rates going forward.

Please help us by completing our customer survey!

To better understand our customers' use profiles GELD has designed a survey alongside a university research team. The results of the survey will help us prepare for next year. **As thanks for your participation, survey respondents will go into a draw to win one of ten \$200 Amazon Gift cards.** Any GELD customer can complete the survey. In the survey you will need to provide your account number or other identifying information like your address. Your account number is in the top right corner of your bill, the third line down. **To participate in the survey please go to the following address or use the QR code on your phone:** tinyurl.com/5556h2hw



Rates—How to make them fair in the future

We have a challenge to the way our rates are structured

Our current rates have been flat with relatively small increases in the winter to cover our increased winter power costs. Historically, our rates have been spread evenly over all residents in town with a modest discount for the small users and an approximate 10% discount to those who pay their bills promptly. Because our early pay discount has been so effective at getting most of our customers to pay by the 12th of each month, GELD incurs minimal costs in

collecting delinquent payments and has minimal write offs each year.

One aspect of our costs – transmission – is steadily increasing and will continue to increase for the foreseeable future. Transmission, which covers our costs to get the electricity

from where it is generated to our substation now accounts for about 20% of our total costs each year; and these costs are determined by our load during the regional peak hour each month. This hour is most commonly from 5:00 to 6:00 in the evening but can vary from 4:00 pm to 8:00 pm.

Another one of our costs that occurs in the evening period is our capacity costs. Our share of the region's highest peak hour of the year determines our capacity cost for the year. The capacity cost is in place to ensure that New England has enough electric generation on hand and in reserve to adequately meet demand during this one peak hour. The recent high capacity cost is due to the large number of electricity generation plant closures in the recent past and the need to construct new generation facilities to meet the regional needs for electricity. Two years ago, this cost from one hour represented about 15% of our total costs for the year, and last year it was about 10% of our total costs for the year.

A large percentage of our costs are driven by Groton's total load during a very small number of hours during the year. One of our challenges going forward is figuring out how to spread these costs fairly since some of our customers are large electric users during those few hours while other customers

use a small amount of electricity during those times.

A recent addition to our load, which is amplifying the problem, is electric vehicles (EVs). The problem occurs when somebody uses an electric vehicle during the day, then comes home and plugs in to recharge during those evening hours when our transmission and capacity costs are being determined. Many cars have "level II" chargers so the car can plug in at 240V and these chargers draw a large amount of electricity each hour. GELD requests that customers with electric vehicles program their chargers so that even if they are plugged in, they don't begin charging until after 8 p.m.

We are currently analyzing multiple options to make our rates fair so that the customers generating those evening costs would pay their contribution of the costs they are creating. We will keep you posted as we work through the details on these options. Until we have specific programs in place, it is very beneficial to GELD if electric load that is not urgent can be programmed not to occur between 4 and 8 p.m.



2020 Fuel Mix for Energy Purchased by Groton Electric

