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Me m o

To: Tim Higgins, Town Administrator
From: Paula Vaughn-McKenzie and Beth Greenblatt
Date: April 11, 2025
Re: Electric Vehicle Charging Stations at Town Hall

Tim:

Thank you for the opportunity to provide this project update in connection with the Electric Vehicle Charging Stations at Town Hall. Please see below a summary of our analysis and findings with respect to establishing a usage pricing strategy.

Station Overview:

The Town of Lincoln has contracted for the installation and operations of two Electric Vehicle Charging Stations at Lincoln Town Hall. Each 120-kilowatt Level-3 charger, each with two (2) ports provides a fast-charging option available to the public.

Level 3 chargers are able to charge an electric vehicle between 15 minutes to an hour, depending on the charging needs of the vehicle. A 120-kilowatt Level-3 charger can add 100-120 miles of range in about 30 minutes, making these charging stations highly efficient and convenient.

The total installation cost for the Electric Vehicle Charging Stations, inclusive of equipment, installation, station configuration, electric service upgrade and one-year network services was approximately \$343,961. The Town applied for and received an incentive from Eversource of approximately \$331,619 plus a bonus credit from the vendor of approximately \$9,342.00. The net cost to the Town was \$3,000.

The Electric Vehicle Charging Stations will be open to the public. Users will be charged directly at the Charging Stations. Payments will be accepted through the SWTCH Charging Station App which is downloadable from the Apple or Google App Stores. Payments will also be accepted by credit card, but a credit card processing surcharge will be assessed.

As discussed below, to establish the user rates and fees, the Town has considered all fixed and variable costs associated with the provision of the Charging Stations in addition to the actual cost of the electricity delivered to the Charging Stations.

Pricing Analysis:

- **Considerations**

In order to establish user rates and fees, the Town identified the fixed costs associated with the construction and operations of the Charging Stations, plus the variable costs associated with the electricity delivered to the Charging Stations. We recommend that the Town monitor the Charging Station's usage and frequency every six months and using then-current Eversource electricity supply and delivery charges, update the User rate. We also note that the Town may be able to secure a competitive fixed supply rate and recommend pursuing that option in connection with the existing electricity supply contract the Town is served under.

Variable costs include:

- Electricity supply and delivery costs. These costs are incurred on a volumetric basis and will be charged directly to the user.
 - Current delivery charges: \$0.09703 per kilowatt-hour
 - Current Eversource supply charge: \$0.13078 per kilowatt-hour
 - Total current proposed base electricity rate: \$0.22781 per kilowatt-hour
 - SWTCH User fee (10% of user rate): \$0.02278 per kilowatt-hour
 - Total proposed User rate with SWTCH fee: \$0.25059

Fixed costs include:

- Purchase Cost of \$3,000
- Annual Operations and Maintenance Costs of \$1,700
- Annual SWTCH Management Fee which was included in the purchase cost for first year and will be billed at \$1,560 annually thereafter
- Annual Eversource fixed Customer Charge of \$2,700
- Total first year fixed costs: ~\$7,400

Fixed costs recovery charge:

- The Town could elect to recover the first-year cost on a volumetric basis by increasing the proposed User rate to recover the fixed costs. Alternatively, the Town could assess a flat rate Customer Charge for each use.
- We analyzed both options and given the uncertainty of the frequency and use of the Charging Stations, conservative estimates for initial use results in a high fixed Customer Charge ranging from \$12.00 to \$18.00 per fill. We recommend that the Town monitors Charging Station usage and frequency to determine if a fixed Customer Charge is appropriate in the future.

- The following addresses the analysis undertaken to calculate a volumetric adder to recover the first-year fixed costs. This analysis is based on two scenarios: Low Usage and Medium Usage.
 - Anticipated Charging Station Usage - Low Usage Case:
 - Two 120 kilowatt Charging Stations: 240 kilowatts
 - Usage: 3 hours per day
 - Frequency: 100 days per year
 - Estimated consumption: 72,000 kilowatt-hours
 - Total first-year fixed cost: \$7,400
 - First-year Fixed Cost recovery adder: \$0.10278 per kilowatt-hour
 - Anticipated Charging Station Usage - Medium Usage Case:
 - Two 120 kilowatt Charging Stations: 240 kilowatts
 - Usage: 3 hours per day
 - Frequency: 125 days per year
 - Estimated consumption: 90,000 kilowatt-hours
 - Total first-year fixed cost: \$7,400
 - First-year Fixed Cost recovery adder: \$0.08223 per kilowatt-hour
 - Total User Rate with SWTCH Fee and Fixed Cost Recovery:
 - Low Usage Case: \$0.35338 per kilowatt-hour
 - Medium Usage Case: \$0.33282 per kilowatt-hour
 - Note that the rate is for every kilowatt purchased over the time period of charge.

Loitering Fee:

- The Charging Station User will be able to charge to full capacity. This will be charging based and not time based.
- Once the vehicle is fully charged, the User will receive a notification in the SWTCH App advising them that they have a 30-minute grace period after fully charged.
- After the grace period:
 - Option 1: a fee of \$0.75 per minute (effectively \$45 per hour OR
 - Option 2: a fee of \$1.00 per minute (effectively 60 per hour)

Recommendations

Based on the analysis above, we recommend the Town consider the following User fee structure for the balance of this calendar year, after which the analysis would be updated as informed by Charging Station usage and frequency, and Eversource electricity costs. We anticipate that the User rate should be evaluated in January and July of each year to ensure that annual fixed costs are recovered from Users and the electricity rate properly reflects current Eversource charges.

Recommended Rates and Fees for Lincoln:

- Recommended User Rate: \$0.35 per kilowatt-hour
- Recommended Loitering Fee: a fee of \$1.00 per minute after a 30-minutes grace-period to discourage loitering

Comparative Rates and Fees for Level 3 Charging Stations:

- According to the Department of Energy Resources the average User rate in Massachusetts is \$0.45 to \$0.55 per kilowatt-hour.
- Town of Lexington: \$0.30 per kilowatt-hour plus \$0.50 per hour for parking.
- Town of Concord: Time of use rates:
 - Peak (Monday-Friday, 4:00-8:00 PM): \$0.60 per kilowatt-hour
 - Mid-Peak (Monday-Friday, 6:00 AM-4:00 PM): \$0.40 per kilowatt-hour
 - Off-Peak (Monday-Friday, 8:00 PM-6:00 AM and Saturday-Sunday): \$0.30

Transaction and Revenue Process:

SWTCH will collect User fees in real time and on a quarterly basis remit to the Town by electronic payment all fees collected less their 10% User fee. The Town will be invoiced monthly by Eversource for actual charges from the use of the Charging Stations.

Thank you for this opportunity to support the Town of Lincoln with this exciting project. If you have any questions or need additional information, please do not hesitate to contact Paula or me directly.