



Legislation Text

File #: 20-1317, Version: 1

CITY COUNCIL AGENDA ITEM

ACTION REQUESTED:

Waive the first reading and pass the ordinance amending Title 8 (Public Utilities) Chapter 1 (Electricity) Article B (Service Rules and Policies) Part 2 (Communications) of the Municipal Code regarding the transformer upgrade costs and residential electrical vehicle charging stations (requires six positive votes)

DEPARTMENT: Electric Utility

SUBMITTED BY: Lucille Podlesny, Director

BOARD/COMMISSION REVIEW:

On October 15, 2020 the Public Utility Advisory Board (PUAB) unanimously supported staff's recommendation to amend the ordinance (5-0).

BACKGROUND:

The Electric Utility (Utility) offers rebates for installing a Level 2 or Level 3 electric vehicle charging station. A residential rebate of \$200 is available through the Illinois Municipal Electric Agency (IMEA) for all customers and an additional \$500 rebate is available for customers that participate in the Renewable Energy Program for at least two years. As of October 31, 2020, according to the Illinois Secretary of State, 1,095 electric vehicles were registered in Naperville zip codes, but the City has received less than 200 permit applications to install an electric vehicle charging. As such, the City continues to look for ways to encourage the adoption of electric vehicles and ensure they are installed in a safe manner.

When a resident requests an electric vehicle charging station, the Utility uses a variety of standards to determine the required service wire and distribution transformer size to support the necessary electric facilities upgrade cost. Depending on the service wire and transformer size needed, the resident may be required by Municipal Code to pay for the cost of upgrading the electric transformer. Originally, the complete cost was borne by the initial resident's permit request, even though the transformer may be shared across many residences. In recent years, the Utility has divided the cost of the transformer upgrade portion of the electric facilities upgrade across all residents connected to the transformer (approximately \$750 per resident). To date, the Utility has not had more than one resident per transformer request an upgrade, and thus has not recaptured any additional incremental costs.

DISCUSSION:

The proposed text amendment would eliminate the transformer upgrade portion of the cost if the resident charges their vehicle during non-peak hours (10 p.m. - 7 a.m.). Moving to non-peak hours

reduces the contribution to the Utility's peak demand. That demand contributes to the IMEA peak demand, and by lowering the demand, less capacity must be procured by IMEA which results in lower energy prices. If necessary, residents would still be required to pay for the service wire upgrade portion.

Major benefits resulting from the text amendment are:

1. ensuring Code-compliant installation of electric vehicle charging stations;
2. lowering the number of transformers to be upgraded resulting in lower infrastructure costs and system losses during lightly loaded periods;
3. improving the load factor, reducing the Utility's peak demand, which contributes to a lower rate charged by the IMEA;
4. ability to utilize aggregate load data for electric vehicle charging station installations, analyze impacts on the system peak, as well as monitor, and verify, that charging is being completed during non-peak periods.

The potential of moving to time-of-use rates will be evaluated during the next rate study which is expected to be completed by third quarter 2021. Proposed rate and cost-of-service adjustments will be presented to the City Council in fourth quarter 2021. If approved, changes will go into effect on January 1, 2022.

FISCAL IMPACT:

Upgrading a transformer to accommodate the extra load of an electric vehicle charging station during a planned outage will cost an average of \$6,000. An unplanned outage due to an overloaded transformer is \$10,000. This results in a \$4,000 savings.

Furthermore, by absorbing the transformer upgrade cost in exchange for non-peak charging, the Utility may also see a savings of \$180 per month per electric vehicle charging station. With these anticipated savings, the ROI on a transformer upgrade is less than 34 months.