Illinois Commerce Commission  :
On Its Own Motion   :   18-NOI-01
:
Notice of Inquiry Regarding
Electric Vehicles

Comments of
Illinois Industrial Energy Consumers ("IIEC")

IIEC members are a diverse set of energy intensive industries and institutions, including steel, refining, cement, commodity, food processing, chemicals, auto manufacturing and heavy equipment manufacturing and institutions for higher education. They have consumed in Illinois as much as 13 billion kilowatt-hours (kWh) of electricity in a year and have employed as many as 93,000 people. IIEC has been actively engaged in electric and gas ratemaking, regulatory and energy matters before the Illinois Commerce Commission, the Illinois General Assembly and the Federal Energy Regulatory Commission since 1983. IIEC’s main focus has been on the availability, reliability and cost of electric energy and natural gas. They are sensitive to increases in energy costs in general, as well as the method used to collect those costs.

IIEC is interested in this matter as it may have implications for the delivery service rates and charges assessed on industrial customers. At this time, we offer only short general comments and responses to the questions related to Ratemaking only. However, we will review the responses of others and may offer additional comments in reply.

General Comments

IIEC believes the Commission is wise to seek information on technology changes that may significantly impact electric use of customers of the utilities which it regulates, in the event that such changes require different regulatory approaches under applicable Illinois law. In the case of electric vehicles ("EV"), it is possible, though far from certain, that at some point in the future investment in and operation of the distribution delivery service system of the regulated utilities may be significantly impacted. Even less certain, however, is whether the current regulatory mechanisms are in any way inadequate to cover changes in delivery service costs or infrastructure investments needed by the regulated utilities.

As a general principle, as long as reliable, adequate and least cost delivery services are provided to Illinois customers at rates that reflect the cost of providing such services, the proper signals will be provided to customers in making decisions about purchase of EVs and the ICC will have fulfilled its responsibilities. As enhancements to the regulated delivery systems of the utilities are needed to continue to provide reliable, adequate and least cost delivery service, it will be incumbent upon the utilities to advise the Commission of such need for enhancement and to seek proper rate treatment.
This general approach has been used successfully for decades, as customers’ use of equipment has evolved and has led to the robust, reliable distribution systems in place today. It is unclear at this time why such an approach would not continue to be adequate with greater penetration of EV, or other electricity using technologies.

Regarding the supply and transmission components of electric service, these are largely outside the Commission’s regulatory realm. For transmission, the responsibility for system enhancements, if needed, and regulation thereof is with the Regional Transmission Organizations (PJM and MISO) and with the Federal Energy Regulatory Commission. For supply, market forces will dictate price changes needed, if load shapes are altered significantly by greater penetration of EV. No action by the ICC will be needed in these regards.

Finally, IIEC would note that the regulated distribution delivery systems have been designed generally to meet the peak demand needs of customers, whether at the circuit or network levels. Assuming that the bulk of EV charging will occur during off peak periods, it would be speculative to assume that existing systems would be inadequate to serve additional load, as significant reserve delivery capacity exists in off peak periods. Consequently, large additional investment in distribution delivery systems may not be necessary with additional EV penetration.

Responses to Ratemaking Questions

A. Describe whether utilities should charge time-varying rates, such as time-of-use rates, to incentivize EV penetration in the state. Explain why or why not.

IIEC Response

Generally, the ICC should set rates that best represent the costs of providing regulated utility services. This is tempered by factors such as billing capabilities and by customer understanding and acceptance. If the rates for regulated services are properly set, it is generally unnecessary and inappropriate for changes in rate structures to be made for the purpose of incentivizing one use of electricity (such as charging EVs) over another. Said another way, if the merit and feasibility of time-varying rates exist as a matter of better reflecting costs, then such rates should be implemented. To do otherwise introduces inefficient use of the supply and delivery networks and introduces subsidies between customers and rate classes.

a. How would EV drivers benefit from these rates?

IIEC Response:

The simplest answer is that EV drivers would benefit if they had access to low or even subsidized rates at the times they are charging their EVs. The simple answer is not necessarily the best answer, however, if it violates cost of service principles. Violation of cost of service principles leads to inefficient usage, cross subsidies and ultimately higher overall utility costs.

It is important to distinguish between utility tariff rates for power supply versus rates for delivery service. Power supply time-of-use rates are common, and widely available today in Illinois and elsewhere for residential customers. Delivery service time-of-use rates are less common, and not currently available through Illinois residential tariffs. The primary reason is that, unlike for power supply, delivery service costs are largely fixed, i.e. do not vary with customer usage, and there is no significant
difference in the cost of providing delivery service across hours of the day or days of the year for much of a utility’s delivery service costs. For the portion of a utility’s delivery service costs that do vary based on the local coincident peak demands on the individual distribution networks, if any, the timing of the local peaks can differ dramatically from one another, making it very difficult to develop a cost-based time-of-use delivery rate for all customers.

A power supply time-of-use rate would be a cost-based rate design to bill customers for EV charging and other applicable usage, and if designed properly, could encourage efficient use of existing production and transmission capacity owned by the utilities. Whether the time-of-use rate design would incentivize EV penetration in Illinois depends on many factors, including whether the economics of electricity as a fuel provide savings versus gasoline as a fuel, coupled with the accompanying costs of purchasing, owning, and operating an EV versus a gasoline-fueled car. Over the long-run, if EV penetration occurs under utility rates and/or rate designs that are not cost-based, significant subsidies between utility customers are likely to develop and cause a push-back against continued EV penetration in the service territory, until and unless tariff rates are redesigned to be cost-based.

As mentioned, delivery service time-of-use rates are not common, even under utility tariffs that are currently designated for EV charging only, based on IIEC’s research. For a delivery service time-of-use rate to be fully cost-based, the time periods would have to be aligned not with the utility’s highest load periods, but rather with the individual local distribution networks’, i.e. circuits’, highest load periods, which can vary from neighborhood to neighborhood. This likely would necessitate different time-of-use periods and prices for every local distribution network or circuit. However, delivery service rates to customers charging their EVs must also be cost-based in order to avoid subsidies between ratepayers and allow for long-term EV penetration. A cost-based delivery service rate includes a fixed monthly customer or service charge that fully recovers the allocated fixed cost of providing delivery service to each customer. Other demand or energy charges may be used under a cost-based rate to collect the cost of providing delivery service that varies with the local maximum load. Neither the fixed monthly cost to provide delivery service to each neighborhood, nor the local maximum demand on the neighborhood distribution transformer will be reduced simply as a result of customers charging their newly-acquired EVs in their homes. If customers shift their existing load to time periods of lower distribution network utilization, i.e. circuit-level off peak periods, and do not add new EV load to high-utilization time periods, only then would a utility’s distribution cost to serve potentially decline over time.

B. Discuss whether charging infrastructures should be included in the rate base if the charging infrastructure is owned by public utilities. Explain why or why not.

IIEC Response

Assuming the term charging infrastructure excludes the standard utility delivery network, including a utility-supplied-and-owned meter, no component of the charging infrastructure should be owned by public utilities. EV charging equipment can be constructed and EV services can be provided by third parties other than the incumbent utilities. Given that this service is competitive in nature, there is little justification for allowing regulated utilities to build EV charging infrastructure and to include the cost of such infrastructure in regulated delivery service rates. If incumbent utilities want to compete in this space, their parent companies should do so at their own shareholder risk, through a competitive affiliate, not through the utility itself.
a. Discuss whether charging infrastructures should be accounted for as capital expenses. Explain why or why not.

b. Discuss whether charging infrastructures should be accounted for as operational expenses. Explain why or why not.

IIEC Response:

There are examples of utility’s designated EV tariff rates requiring a separately metered account specifically for EV charging. If in that instance, the utility supplies and owns the secondary EV meter for the customer, then that meter cost should be included in rate base as a capital expense. Additional EV meter costs should be allocated to cost-causers, which in this instance is the singular EV owner requiring the secondary meter. However, even if a secondary meter is necessary, this could be provided by a third party. The Illinois utilities’ tariffs already allow for competitive “Metering Service Providers.”

To the extent charging infrastructures require capital investment, they should not be accounted as operational expenses, in any event. This would be inappropriate and likely would violate Generally Accepted Accounting Principals.

C. What rate designs have other utilities implemented to encourage EV adoption and how successful have they been?

IIEC Response:

IIEC has not conducted extensive research on this topic at this time, however we are aware that some utilities in the country use EV-designated tariffs for service to customers that charge EVs in their homes. Some examples include Consumers Energy Company, DTE Energy Company, Pacific Gas and Electric Company, and Southern California Edison. Utilities may allow EV owners to remain on legacy non-time-of-use rates, and practically speaking may not be able to force all EV owners off of their existing residential rates, given that some EVs can be charged, albeit slowly, via a standard 120 volt home outlet. However, utilities may encourage customers to register their EVs with the utility, and promote switching to a power supply time-of-use rate, either for their total home electrical use or for their EV charging needs only, which could require installation of a secondary meter.

IIEC would note that such options as upgraded service and time of use rates are currently available to residential customers in Illinois under the regulated utilities’ existing tariffs.

Respectfully submitted,

ILLINOIS INDUSTRIAL ENERGY CONSUMERS (IIEC)