Demand-charge mitigation strategies for EV chargers

A partnership with the Transportation Energy Institute's Electric Vehicle Council

April 23, 2024

Key takeaways

- The Transportation Energy Institute wanted to explore ways to ease the economic impact of utility demand charges on the hosts of DC fast charging (DCFC) station sites.
- E Source assessed utility rate tariffs, DCFC operations and economics, and the potential effects of demand-charge mitigation strategies for site hosts.
- In its final report, E Source included the four most common strategies for mitigating demand charges at DCFC sites, helping Transportation Energy Institute members and the broader community of EV industry stakeholders understand what's working now and likely to work in the near future.

The challenge

Low use of public EV fast chargers can lead to poor economic performance for site hosts. Many point to utility demand charges as contributing to the problem.

To address this issue, the Transportation Energy Institute launched a research effort with two goals:

- Explore ways to alleviate the economic impact of utility demand charges on DCFC station site hosts
- Assess these strategies in terms of the tradeoffs between the costs and benefits for site hosts, EV drivers, and utilities

Because DCFC stations can add significant new load to the electric grid during utility peak (when power is most expensive to deliver), the Transportation Energy Institute wanted to investigate cost-effective ways to

reduce or shift load.

Have questions about demand-charge mitigation strategies for EV chargers?

Contact our team to learn more about our expertise and how we can help.

The solution

The Transportation Energy Institute partnered with E Source to produce an assessment of utility rate tariffs, DCFC operations and economics, and the potential impacts of demand-charge mitigation strategies for site hosts.

In the final report, E Source described four ways to mitigate demand charges at DCFC stations now and in the near future, namely:

- Eliminating demand charges for DCFCs
- Capping the total monthly energy costs for stations with low utilization
- Installing colocated batteries or solar arrays to help manage peak demand
- Encouraging EV charging during times of lower demand

Choosing the best strategy will depend on location, station utilization, and market conditions.

> Demand charges are a critical issue affecting the expansion of EV charging infrastructure. We wanted to evaluate various mitigation options to better understand their impact on-site hosts, utilities, and drivers.
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> E Source was a great partner, working with the council through multiple rounds of peer review to ensure that the report objectively addressed the key issues facing the market. This report provides valuable insight to support constructive and collaborative efforts to find a sustainable business model for EV chargers.
>
> —John Eichberger, Executive Director, Transportation Energy Institute

The results

E Source's findings were thoroughly researched, informed by industry experts, and extensively reviewed by Transportation Energy Institute Electric Vehicle Council peers.

The final report answered every question the Transportation Energy Institute posed in its RFP, informing Transportation Energy Institute members and the broader community of EV industry stakeholders. Equally important, E Source delivered the information in a way that was easy for the public and stakeholders to understand and engage with.
