

EV Demand Response Use Case

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EV Demand Response Use Case Example

Distribution Need:

- Location, magnitude and timing of EV uptake is unknown
- Uncertainty of load growth may complicate decisions on appropriate planning response –
 - risk of overinvestment (too much, too early)
 - suboptimal reprioritization of resources (EV-related needs met just-in-time, but with consequences for other capital projects)

DER Opportunity:

- Respond to and manage increasing system use without (over)building additional infrastructure, while maintaining quality of service and service reliability

Proposed Solution:

- Use non-utility services to manage EV charging, mitigate peak load and/or optimize loading

EV Demand Response Use Case Example Cont'd

Key Elements

- Service provider enrolls customers and installs required equipment
- Utility pays the provider to manage the load
- A service commitment from the provider to the utility
 - i.e., curtail or shift load to a set proportion or quantity, at given times, locations, etc.
- Limits are not technical as much as behavioural
 - Third party's value-add is knowledge of customer behaviour and value proposition, and appropriate range of service offerings to manage as much EV load as possible as new EV customers come on stream

Benefits of the DER Solution?

- Helps to manage new peaks on the system – capacity value
- Defers infrastructure/capital investment
- May be more flexible, scalable relative to other DERs or traditional infrastructure, which often comes in fixed sizes

EV Demand Response Use Case Example Cont'd

Considerations

- Some risks likely to persist – e.g.
 - More lead time may be required to build customer base and establish how firm response capability is
 - Scalability, dependability of customer response
 - How frequently to assess for efficacy, adequacy relative to traditional capital solution
- How might costs and benefits need to be assessed in order to reflect up- and downside risks of this approach relative to a solution involving a traditional distribution investment?
- What kinds of service arrangements would best allocate risk between utility, customers and service provider?

Transformer Load With & Without an EV

- A real example from EDTI's system:

