

# EV Demand Response Use Case

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# EV Demand Response Use Case Example

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## 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

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### 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

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## 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:

