

Finding Ambitious Demand Reduction Opportunities through Analysis of Peak Load

Personas

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This poster presents an approach for identifying customers that could be targets of peak demand reduction programs. The magnitude of peak loads, when the maximum demand occurs in the electrical system, determines the required size and capacity of the electric system and the associated cost of the system. Given the potential to reduce costs for customers and for the regional electric system as a whole, utilities are working to develop approaches to help customers reduce their demand during system peak hours. In order to invest resources where they can make the most difference, one Massachusetts utility researched which types of customers would be the best target for demand reduction efforts. The poster summarizes this utility's approach, including:

- Identifying what sector of customers (residential, commercial, or industrial) contribute the most to electric demand during system peak hours
- Considering how load profiles vary for different customer types or personas, and what types of demand reduction solutions may be applicable for each customer type
- Reviewing how interval load data be quickly and simply screened to identify customers with relatively "peaky" (or variable) loads during peak system hours

The poster illustrates customer loads by rate class for a sample peak day to show how different customers' loads contribute to the system peak load. The poster describes six different peak load "personas," defined by customer type, rate type, whether or not the customer experiences demand charges, whether or not the customer's load is optimized, and whether or not the load is coincident with the ISO peak. The poster then shows illustrative examples of load profiles for each persona, and discusses peak demand reduction solutions that may be applicable for this persona. The poster also plots five minute interval load data for samples of commercial and industrial customers in different customer segments (e.g., financial offices, educational facilities, and data centers) to examine whether coincidence with the system peak load varies by customer segment. Finally the poster suggests a simple statistic that could be used to screen customers to identify those with that may have loads that are not optimized during system peak hours.