

DR17.11 Assessment of DR-Enabling Technologies Roadmap

OPPORTUNITY

Develop a DR enabling technology roadmap.

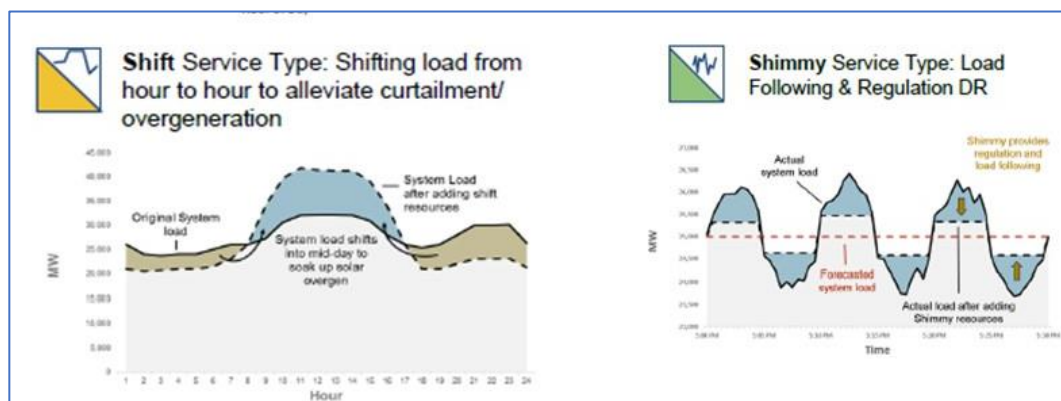
Southern California Edison (SCE) worked with Navigant and the Lawrence Berkeley National Lab (LBNL) to develop a Demand Response (DR) enabling technology roadmap that focuses on facilitating customer engagement for participation as fast and flexible DR services. The roadmap provides prospective guidance to SCE on developing innovative research in its Emerging Markets and Technology program during the next five years.

TECHNOLOGY

What type of technology was evaluated?

The roadmap reviewed multiple types of DR-enabling technologies (ex. HVAC, lighting, batteries, etc.) in terms of their ability to provide flexible DR services across four service types (shed, shift, shimmy and shape) to a variety of industries including residential, commercial industrial and agricultural.

Shift and Shimmy Demand Response Service Types



Source: 2015 California Demand Response Potential Study, Phase II Report; Final Study Results.

EVALUATION

How was the technology evaluated?

LBNL provided DR potential supply curves for SCE's service territory that help identify the greatest contributors to DR potential across different sectors and end-uses and their levelized costs. The technology assessment not only covered conventional electrical end-uses such as HVAC, lighting and pumps, but also included innovative development and applications of electric vehicles and behind-the-meter (BTM) storage as DR resources. The roadmap identified factors that currently influence DR deployment and are likely to affect market uptake of DR-enabling technologies in future including standards and interoperability, customer awareness and value proposition, and market/regulatory requirements.

FINDINGS

What were the major findings of the roadmap?

- Technology assessment summary highlights key areas of technology development and demonstration required for enhancing DR capabilities to provide fast and flexible DR services (shift and shimmy services in the potential study), and accordingly suggests a technology roadmap. (See roadmap for more details).
- There are a number of ongoing technology development and demonstration activities that show potential as future technologies with enhanced DR capabilities.
- Most of these demonstrations are expected to be complete within the next three years and could provide specific guidance on prioritization and selection of technologies for realizing fast and flexible DR services.

CONCLUSIONS

What was concluded?

The technology assessment summary highlights key areas of technology development and demonstration required for enhancing DR capabilities to provide fast and flexible DR services (shift and shimmy services in the potential study), and accordingly suggests a technology roadmap.