TROVE Demand-side Optimization Solver

Situation Overview

Forecasts show the implementation of distributed energy resources (DERs) doubling over the next 5 years. These customer-driven changes will have an important role in the future of the grid, requiring an integrated approach to an expanded portfolio of demand-side resources to support grid services, deferral of capital expenses, and utility revenue streams. While much of the DER discussion to date has centered on solar and storage, it is also being shaped by a renaissance in precision demand response and energy efficiency along with new time-of-use (TOU) rates and electric vehicles. The flexibility and precision of DER resources *can* make them a valuable component in the active management of the distribution grid.

DERs
X2
5 OVER NEXT YEARS

TROVE sees a handful of recurring DER needs at utilities:

Predicting the adoption of DERs on the grid and the associated impacts down to the transformer level for planning purposes.

Designing TOU rates with full understanding of customer implications to support regulatory filings and effective implementation.

Deciding if targeted placement of DERs can serve as non-wires alternatives to managing the grid.

Working with key-account customers as their trusted energy provider to optimize DERs to the economic benefit of both the customer and utility.

Calculating the ideal placement of EV charging stations – managing the combination of expected EV growth, hosting-site adoption, and distribution-grid needs.

TROVE™

TROVE Demand-side Optimization Solver
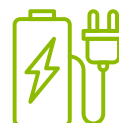
Solvers Solve Use Cases

TROVE packages its sophisticated data management and models into highly configurable solutions called Solvers to enable us to exactly meet each client's needs. Here are some of the use cases SOLVED by **TROVE's Demand-side Optimization Solver**:

1 — IMPROVED RELIABILITY 30%

Hourly forecasts for 500,000 **Demand Response** participants across multiple programs **improved reliability of events by 30%** and enabled events at a circuit level. Post-event performance results for each individual participant are measured as soon as AMI data is available, helping to make DR an effective non-wires alternative.

2 — CUSTOMER UNDERSTANDING = BETTER OFFERS

Behavioral load segmentation facilitates the optimal design of **TOU** rates to achieve desired system results, understand the implications at an individual customer level, and develop offers with deep customer-sentiment insights for proper engagement.

3 — CUSTOMER PERSONAS = GREATER INSIGHT

Customer-level DER forecasts provide greater granularity and insight for distribution planning of customer-driven impacts and personas of customers' buying. This allows utilities to understand **DER adoption at the individual customer-level** and the associated load impacts on the grid all the way down to the **transformer**.

4 — FORECASTING + RESOURCES = OPTIMAL VALUE

Key Account Optimization of distributed generation, DR, EE, and rate options is becoming a strategic differentiator for utilities as they work to remain their clients' trusted energy advisors. The solution leverages baseline load forecasting combined with various customer-side resource interventions to optimize value for both the customer and the utility based on specific markets. This allows the utility to directly engage with individual C&I customers to uniquely optimize products and services.

Interested in seeing how **TROVE's Demand-side Optimization Solver** and team can help make your data useful? Please contact us at **info@trovedata.com**.

TROVE™