

The Assessor Platform

Kevala was born from an effort to bring hyper granular information about the built environment to decisionmakers in the electricity sector. The **Assessor Platform** supports decision-making via its proprietary decision support interface, allowing clients to identify which datasets they can provide to address discrete needs and enabling the automatic incorporation of additional data from the Assessor Platform to produce instantaneous results.

The **Assessor Platform** provides access to three core product categories: **Network Assessor**, **EV Assessor**, and **Grid Assessor**. Each provides solution sets to market participants. This product summary focuses on **EV Assessor** applications. If you would like additional insights into Network Assessor, our solution for utilities and energy stakeholders on the impacts, costs, and benefits of DERs, or Grid Assessor, our solution for renewable independent power producers (IPP), please let us know.

EV ASSESSOR

Kevala uses a variety of tools to assess the technical requirements for electric vehicle grid impacts and resource optimization including: charge profile analysis, EV route optimization, individual vehicle charge/no charge decision support based on Locational Marginal Prices, and distribution capacity benefits. The **EV Assessor** solution set delivers integrated EV and grid optimization and serves multiple use cases.

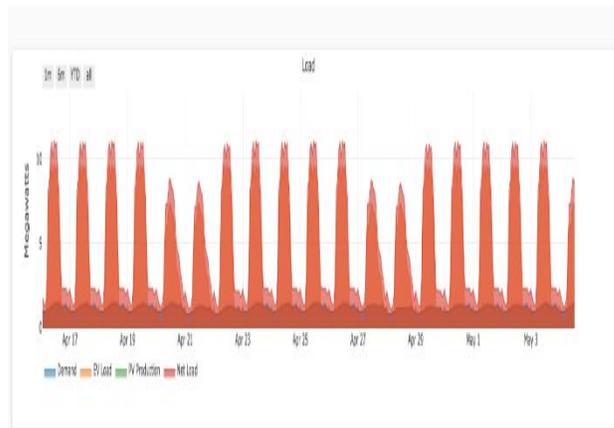
GRID IMPACT ANALYSIS & OPTIMIZATION

Kevala's **EV Assessor** toolset focuses on optimizing costs and benefits of EVs on the distribution grid, the location of charging infrastructure, and vehicle charging behavior across time and location by analyzing vehicle routes, wholesale energy prices, distribution capacity benefits, and retail rate costs. EV

Assessor also includes scenario modeling of EV penetration and charge optimization.

Example Solutions

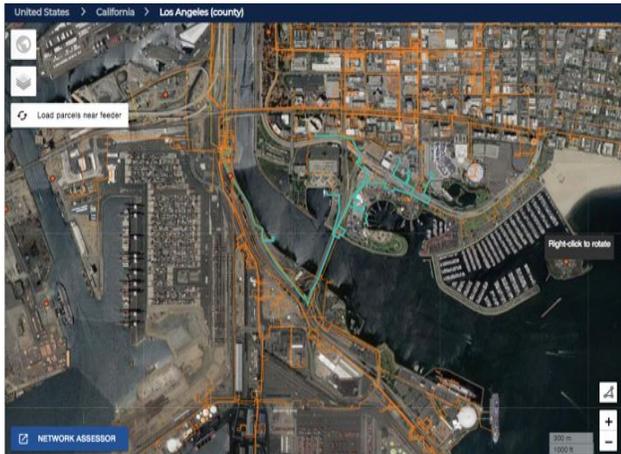
EV GRID IMPACT ANALYSIS



The US Department of Defense utilized Kevala's Assessor Platform to look at the costs and benefits of different levels of DER adoption including EV penetration and renewable generation, as well as EV charging optimization for excess daytime PV production. Kevala analyzed vehicle miles traveled and the number of registered vehicles to determine the total MWh attributed to EV charging. We then distributed that consumption across every individual distribution circuit on O'ahu based on the number of residential and commercial customers on each circuit, with a user-selectable option for the level of renewable generation/EV penetration and rate charging optimization correlated with solar PV generation. Kevala aggregated the impacts of these EV scenarios. These were then incorporated into distribution capacity and delivered cost of power analyses as part of the economic analysis of Hawaii's 2045 100% renewables targets. These results gave users the opportunity to better understand how EV charge optimization can help with, or complicate, high-penetration renewables futures across a diversity of circuit types.

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EV CHARGE INFRASTRUCTURE SITE OPTIMIZATION



On behalf of the County of Los Angeles, Kevala has been analyzing the county’s ongoing EV charging infrastructure needs to prioritize and manage related grid upgrades. Kevala’s Assessor Platform serves as the foundation for determining probable locations of EV charging demand for different classes of EVs, including heavy-duty vehicles, public transit, and light-duty fleet vehicles. The geography of the routes, the magnitude and shape of the charging profiles, and the capacity of the distribution infrastructure have been analyzed to ensure that planned EV charging infrastructure is unlikely to encounter interconnection delays or added costs.

EV ROUTE OPTIMIZATION

Cal-Charge engaged Kevala to perform analysis on where non-compliant Volkswagen diesel cars were sold and their probable commute patterns to better identify where electric vehicles could



mitigate the impact of particulate emissions associated with these non-compliant vehicles on low-income communities with high exposure to air toxins. The Assessor Platform allows Kevala to determine vehicles’ optimal routes for a given source and destination by minimizing miles traveled and accounting for charging needs, then pinpointing the location and design of charging infrastructure to meet those requirements.

EXAMPLES SELECTED PROJECTS

CUSTOMERS	LOCATION	Use of the EV Assessor Platform	DATE
County of Los Angeles	California	The Assessor Platform used as part of the assessment of the impacts of Electrification of Transportation as it relates to 100,000 fleet vehicles, heavy-duty trucking associated with drayage traffic from the ports, and workplace charging infrastructure.	2019
BMW	California	Platform used for Total Charge Management EV-grid charge optimization pilot via vehicle-specific API access.	2017-2019
Sonoma Clean Power	California	Platform used for the assessment of optimal commercial charging locations on behalf of a Community Choice Aggregator focused on increasing vehicle electrification while minimizing customer cost (e.g. demand charge minimization) and distribution capacity costs (e.g. utility capital expenditures based on increased load).	2018
Department of Defense	Hawaii	Platform used for circuit-specific assessment of the impacts on utility avoided costs associated with multiple Electrification of Transportation scenarios.	2017