CSE Develops EV Charging Roadmap for Louisiana's Highway Electrification

Caret® pinpoints and prioritizes optimal electric vehicle charger sites for nearly $75M in federal funding

THE CHALLENGE

To qualify for nearly $75 million in National Electric Vehicle Infrastructure (NEVI) program funding, the state of Louisiana needed to quickly determine what charging existed, how much charging it could deploy with federal and state funds, and, most importantly, where the chargers should go.

While NEVI outlined requirements about proximity to major highways designated as Alternative Fuel Corridors, Louisiana wanted to go beyond the basics. Important considerations included traffic patterns, consumer convenience, and equity goals, such as proximity to tribal areas, military bases, and "Justice 40" disadvantaged communities that are underserved and overburdened by pollution.

The Center for Sustainable Energy (CSE) assisted Louisiana Clean Fuels in developing a comprehensive EV charging infrastructure plan for the Louisiana Department of Transportation and Development using CSE's Caret® EV Infrastructure Planner.
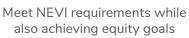
THE GOALS

Optimize siting of up to 760 new DC fast chargers

Meet NEVI requirements while also achieving equity goals

Reduce GHG emissions to meet state and federal targets

APPROACH & OUTCOMES

Customizing Based on State Priorities

With limited publicly available charging along its highways, Louisiana started with a nearly blank slate.

CSE accounted for existing charging that met or could be upgraded to meet federal requirements to design a plan to fill in the gaps. CSE also analyzed data on vehicle miles traveled, points of interest and amenities, and registered vehicles to site chargers where they would most likely be used. Income and housing data were also considered to ensure equitable charging access for residents of low-income communities and multiunit housing.

Using Caret EV Infrastructure Planner, in collaboration with Louisiana Clean Fuels, CSE developed a unique, mathematical weighting of all the state's priorities. Caret's multicriteria decision analysis then created a customized ranking, or suitability score, for each potential charging site.

Create an EV charging installation plan

Prioritize siting based on customizable goals

Creating a Charging Map

Using geospatial mapping in Caret, CSE produced a color-coded installation plan with up to 760 optimal EV charging sites pinpointed to one-third of a square mile. The plan for the Louisiana Department of Transportation and Development prioritized equity by giving more weight to charging sites in tribal, military and federally designated Justice 40 disadvantaged communities.

Caret's algorithm simulated the deployment of chargers in the most suitable location, then automatically recalculated the suitability scores for all other sites. This iterative approach optimizes the impact of infrastructure investments.

Determining When and How Much

CSE's Caret tool not only calculated where to optimally place charging in Louisiana but also how much charging to install when in each location. CSE generated a state forecast of EV adoption over time, using Caret EV Planner's nonlinear diffusion modeling, to ensure the charging plan would satisfy future demand. CSE also provided a range of anticipated charger installation costs and developed two scenarios of potential outcomes.

"To help Louisiana make the most of unprecedented investment in our EV fueling infrastructure under the NEVI program, we turned to the Center for Sustainable Energy. CSE and their Caret software helped us develop a smart, effective and forward-looking plan for deploying EV charging in the state of Louisiana. We value CSE's data-driven, customized approach."

Ann Vail, Louisiana Clean Fuels
Executive Director and Clean Cities Director

PREPARING THE WAY FOR EVs

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Louisiana's climate action goals call for 50% of public fleets to be zero emission by 2035 and 100% by 2050. Research shows EV charging infrastructure should be deployed ahead of EV adoption to support market transformation.

EV EXPERIENCE NATIONWIDE

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CSE administers EV and EV charging incentive programs valued at nearly $3 billion for states and utilities across the U.S. As an independent nonprofit, CSE is recognized for its data-driven planning and objective, network- and vendor-neutral analysis. CSE's Caret EV Infrastructure Planner pinpoints where EV charging should go and prioritizes siting based on customized goals.

For help developing an EV charging roadmap, contact CSE at

consult@energycenter.org

Center for Sustainable Energy

Louisiana Cleanfuels

Center for Sustainable Energy® (CSE) is a national nonprofit that accelerates adoption of clean transportation and distributed energy through effective and equitable program design and administration. Governments, utilities and the private sector trust CSE for its data-driven and software-enabled approach, deep domain expertise and customer-focused team. CSE's fee-for-service business model frees it from the influence of shareholders, members and donors, and ensures its independence.

Center for Sustainable Energy

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