

the charge point planning market

market definition and vendor landscape

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January 2025



cleantechinsiders

advisory and research for clean technology companies

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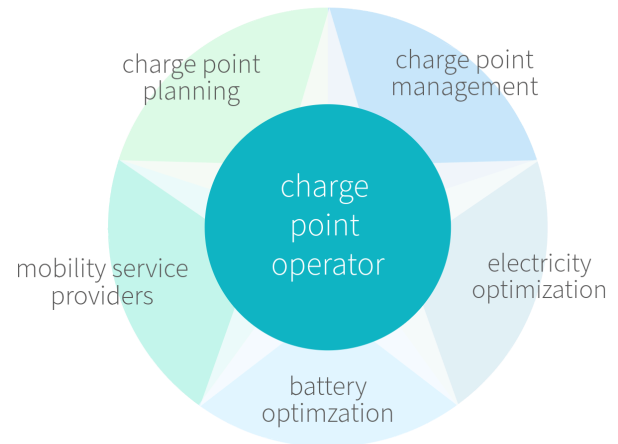
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Introduction

Electric vehicle (EV) adoption has been gaining momentum across the globe. Since the first commercial releases of Nissan Leafs and Teslas, every major auto company has one, if not a lineup, of offerings. Early adopters of EVs typically “fuel up” at home given that over 90% of their trips are within their car’s charge range. While early adopters will put up with the inconvenience of charging far from home, overcoming the “where can I charge?” obstacle is the key to moving the market to the early majority phase.

Charge Point Operators (CPOs), the companies that install and manage charging stations, and their property hosts have the opposite challenge. If they are going to invest in the infrastructure required to offer EV charging, they need to know where EV drivers are most likely going to need the recharge.

This is the value proposition for Charge Point Planning (CPP) solutions, which offer software and services to evaluate potential investments in charging services and reduce their risks. CPP software wades through mountains of data to pinpoint charging network locations that can be both well-utilized and profitable.



CPOs require various technologies for planning, managing their backend systems, and optimizing power provision and storage, as well as mobility services that bring customers to their charging stations.

Users of Charge Point Planning typically start their evaluation with one of three different approaches:

- **Specific site.** Given one or several addresses, they must determine whether an EV charging service is viable given all the factors (see next page).
- **Network plan.** Within a collection of various sites, e.g., franchise locations, shopping malls, etc., identify the best fit into a charging network plan.
- **Public/private partnership.** Work with government entities and utilities to evaluate the potential of street locations, highway rest areas, public parking, and other points of interest.

Eight Factors for Siting Charge Points

There are eight key factors to consider when choosing where to install an EV charge point to ensure that the investment meets both the needs of EV drivers and Charge Point Operators. These factors highlight the complexity of making the right decisions, particularly in the early phases of EV adoption.

Target Market Demographics. Are you targeting street-side charging for urban dwellers, or stations for suburban commuters or long-distance travelers? What are the EV adoption rates within the region? What types of chargers are required, e.g., Level 2, Level 3 (DCFC) or Level 4 (ultra-fast)?

Traffic and Visibility. Where can you ensure customers will frequently need EV charging? Factors include traffic volume, proximity to major highways and busy corridors, and visibility from the road.

Convenience and Amenities. Since charging may take more than the 5-10 minutes drivers use to gas up, the location should offer other services or be adjacent to convenience stores, shopping districts, or office complexes; or offer restrooms and food options.

Power Supply and Grid Capacity. The availability of a robust power supply is a critical consideration when installing EV charge points. Key aspects to evaluate include existing

electrical infrastructure, grid capacity limitations, and where possible, sources of renewable energy power.

Regulatory and Zoning Restrictions. You may find the ideal location and then run into trouble with local authorities. You need to verify that the site is zoned for commercial use, understand the local permitting process, and maintain compliance with relevant safety standards.

Return on Investment (ROI). The location's ROI includes many factors to be able to analyze the revenue and profit potential, such as installation costs and operating costs (e.g., electricity, maintenance, leasing fees), expected usage rates, competitive charging fees, and revenue from additional services.

Scalability. As EV adoption grows, so too will the demand for charging infrastructure and the ubiquity of competing options for EV drivers. When selecting a site, consider the potential for expansion, ability to accommodate new technologies (e.g., ultra-fast or wireless chargers), and the ability to secure a long-term contract from the landowner.

Environmental and Community Impact. If a CPO wants its charging business to be a good neighbor, it must consider the broader impact on the environment and local community. Is reducing greenhouse gas emissions important to the community? Can you partner with local businesses or support community events? Will thoughtful design limit noise and traffic issues?

Charge Point Planning Capabilities

CPP vendors must offer sets of capabilities that help CPOs and property owners are considering EV charging services to weigh the considerations noted above.

- **Aggregated Regional Datasets.** Accurate projection of charge point opportunities requires aggregating localized geospatial, financial, EV adoption rate, and other data. CPP vendors typically have a strong regional focus. They may be able to go deep in the United Kingdom or California, but have yet to aggregate the dataset to evaluate Portugal. Vendors will typically expand region by region as they acquire and aggregate new data sets.
- **Custom data.** The ability to upload custom data, especially financial data (e.g., costs, loan rates, etc.), can help CPOs further refine the modeling for discovering and assessing charger sites to fit their business needs.
- **Predictive Modeling.** Using Artificial Intelligence (AI) and Machine Learning (ML), CPP solutions turn location siting from a highly labor-intensive, sometimes manual process into one that analysts can conduct in a reasonable time to make business decisions. AI and ML give the vendor the ability to wade through mountains of data while weighing considerations to rank or rate the options.
- **Derived Insights.** Aside from displaying aggregated data for specific sites, some CPP solutions derive data from multiple data sources to provide insights for planning and delivery of services across a CPOs network.
- **Site Scoring.** CPP software can score the viability of a site given both its data on each decision factor and how the CPO customer weighs those factors, e.g., is traffic volume more important than convenience to other amenities? This enables the CPO to weigh multiple sites in terms of the possibility of building a charging network.
- **Site Reporting.** Once a potential site is chosen, CPP software can develop a proposal or site report with data about the location (e.g., traffic volume, proximity to highways and services, distance to power grid, projected costs and revenue, and much more).
- **Financial Reporting.** CPP software can weigh the financial viability and return on investment (ROI) of the opportunities to find the optimum investment and forecast their projected customer demand and operating costs. The CPP will develop much of this financial information in collaboration with their customer to ensure they reflect accurate local

expenses, revenue potential, and the reporting requirements of the organization's financial officers.

- **Visual Location Display.** Most vendors offer a visual display of locations under consideration in a standard map view, satellite view, or 3D rendering. This enables the CPO to pinpoint the exact charger location and visually see what is in its proximity, including roads, services, power lines, housing, and other factors for decision-making. This helps confirm that the predictive modeling has placed the opportunity in the optimum site.
- **Integration with Other Applications.** Some vendors enable the reporting from the CPP tool to integrate with Customer Relationship Management, Fleet Management or other business applications to enable collaboration between partners working on site selection and operations, e.g., a CPO partnering with a property owner or government entity.
- **Delivery Planning.** Some CPP solutions provide planning and collaboration capabilities beyond the initial location of viable, feasible charger locations to support the rollout of chargers across the CPO's network.



CPP Solution Vendors

Many innovative companies are meeting this challenge, from startups to vendors with cleantech experience beyond transportation and mobility. Since this is a new market, the capabilities of each vendor vary widely. For some, this may be one aspect of their portfolio of solutions for EV transportation. The decision for CPOs looking for a CPP solution is to match the vendor's capabilities and regional depth to their needs. The following are vendors that we interviewed in the development of this report, and they are listed in alphabetical order.

Company	Regional Support*	Company Description
Alpha Grid San Francisco, USA Est: 2020	US, Canada, Mexico	Alpha Grid monitors 100 million EV charging data points using AI to quickly create an accurate picture of the potential demand, capacity, and financials of any EV charging site. Alpha Grid can analyze the ROI of one or thousands of potential deals to make faster decisions and generate sales proposals and site designs.
Dodona Analytics London, UK Est: 2018	US, UK, Germany	The Dodona Analytics platform supports CPOs, utilities, and others in planning profitable EV charging networks. The solution is built to optimize the entire process through acquisition, planning, and installation with AI-driven discovery leveraging over 50 data points, custom data, and modeling and collaboration features.
ElectroTempo Washington, DC, USA Est: 2021	US	ElectroTempo specializes in helping utilities, governments, fleet owners, CPOs, and property owners de-risk major electric vehicle investments. ElectroTempo provides data-driven projections that allow customers to assess the costs, benefits, and risks associated with EV adoption and infrastructure, and the tools to optimize investments and operations based on these projections.

EVPin New York, USA Est: 2011	US	EV Pin is an all-in-one tool that provides you with the necessary data you need to identify, analyze, select, and design EV charging sites. EVpin also helps EV charging companies close deals faster by visualizing potential sites with detailed 3D renderings and conceptual design services.
EVtools Amsterdam, NL Est: 2022	NL, BE	EVtools is a cloud software provider for electric vehicle charging infrastructure. Their Maps, Workflow, and Monitoring offerings enable clear siting policies, structured deployment, and data-driven optimization and scaling of charging infrastructure. Its Data API enables integration with CRM, Sales and other business applications.
RetailSonar Ghent, BE Est: 2011	EU & Morocco	Retail Sonar's ChargePlanner platform offers location planning and performance solutions to determine the most promising locations for charging stations considering traffic volume, local activity, competition, and other technical criteria. CPOs can maximize their profitability and cities can identify ideal charging locations using ChargePlanner's data-driven insights and site location recommendations.
Stable Auto San Francisco, USA Est: 2017	US	Stable Auto uses AI-powered solutions and industry expertise to plan and operate EV charging networks. By analyzing real-time utilization data from tens of thousands of public EV chargers across the US, Stable Auto enables companies to minimize risk, understand ROI, and boost profitability.

** Regional support is noted as of December 2024, and will be updated regularly. Always check with the CPP vendor on the depth and breadth of regional coverage.*

Other companies with offerings in this market, but not interviewed for this report include Camion Energy, Field Dynamics, Vahanomy, and Geospatial Insight located in the United Kingdom; and Go To-U located in the United States.

Conclusion

Selecting the right site for each EV charge point and building a network is a multifaceted decision that requires careful consideration of market demand, location, infrastructure, costs, and future growth. By using Charge Point Planning solutions, CPOs and property owners can thoroughly evaluate these factors to maximize the success of their installations, provide valuable services to EV drivers, and contribute to the expansion of sustainable transportation infrastructure. With strategic site selection, charging stations can play a pivotal role in the growing EV ecosystem, driving customer satisfaction and business profitability.