SIEMENS

Considerations for Success
Fleet Electrification Preparation

Electrifying your fleet? Here are a few things to consider when looking for the right solution that meets your needs.

Charging and power forecasting:

1) Forecast for truck additions and charging. It is critical to know how much charging will be required – not only by year, but also by hour.

   - It is important that you are comfortable with the forecast. Too high and you overbuild the project. Too low and key capabilities are subpar. A modular design may be best to permit charging additions if your business changes.

   - At large loads the utilities will require an interconnection study, which will likely be a critical path as the process for interconnection studies are complex and time consuming. Hourly charging/load profile is essential for utilities. If peak charging time overlaps with system peak causing a coincident peak concern, demand charges will increase as new infrastructure will be required. The infrastructure plan and charging technology is based on this, so it's important to get it right. Siemens can provide the charging technology and any onsite power distribution required.

   - While the selected sites may be advantageous (i.e. cost, available land, route access, etc.), it may be poor from an electrical perspective. The proximity to substations is key, especially given the loads discussed. Selecting the right site that prioritizes your needs and helps you know the trade-offs is important.

   - Distribution voltages are lower than transmission voltages. Therefore, an existing distribution network may have limitations causing a lengthier process of obtaining required levels of power. Siemens can evaluate the interconnection options and show you what options you have.

   - Distribution planners generally think short term (One to three years) and therefore are limited on resources. Siemens Planning and Consulting group has the tools and skills to conduct interconnection studies for the utilities to relieve the workload and speed the project. We are a trusted partner for the ISOs (Independent System Operators)

   - Charging management is critical. Utilities may provide time of use rates or may want to control charging (V1G). Peak loads for charging in large fleets can be substantial. However, smart charging enables power consumption to be shifted and spread to keep power peaks, and thereby keeping costs more under control.

2) In many markets, rates and rate structures are negotiable. You don't have to take the published tariff. The charging plan, interconnection point, and technology selection will greatly impact this discussion. Siemens negotiates commercial and industrial energy contractual agreements.

3) In order to set an operating budget and understand the risks, you will need a local power forecast (perhaps scenario based), and you may want to consider a risk mitigation strategy (i.e. hedging protocols, layered contracting, etc.) to reduce budget surprises. Siemens provides power price forecasts, and develops and manages risk mitigation plans for utilities, industrials, and commercials.

Energy project management and development:

1) Commercial, technical, financial teams working together in parallel, sharing information as the project develops and changes with the same goal (i.e. lowest cost, speed, ease, etc.).

2) A project development financial model should be developed and employed as a tool throughout the development. Note that during the process there will most likely be changes and learnings that impact the development timeline, cost, etc.

3) Risks should be considered and quantified where possible as the project is developed – technical, operational, market/contracts, regulatory. In addition, mitigation options should be considered. Developing customized financial models and quantifying risk are a core competency for Siemens.

Consider ownership and funding alternatives

1) Several business models and funding options are being development for EV charging. It is possible that you can hire a third party to provide managed charging as a service, where the provider supplies all or some of the upfront capital for project deployment, reducing both upfront cost and development risk. Through our experience as energy project developers, Siemens has the expertise to build customized financial models accounting for partner return and risk requirements to support project development.

2) Consider creative business models to generate revenue, shift cost, share risk, or speed up development. Can the charging station be shared with another party to offlay some cost and take advantage of economies of scale? Imagine another fleet also considering EVs. You could allow controlled access for a fee.

3) Public private partnerships for fueling infrastructure exist. Siemens can provide consulting support.

4) There are several federal, state, local, and utility specific incentives available for charging. Gladstein, Neandross and Associates (GNA) provides full-service assistance to identify, win, and comply with public incentives.