

Case Study

A Norco Gas Station Adds Electricity

July 6, 2020



Introduction

The future is electric. Government incentives and rising commercial and enterprise demand for electrical medium- and heavy-duty vehicles signal that adding fast, reliable charging stations is a must for forward-looking businesses. EV charging demand is projected to skyrocket between now and 2030.

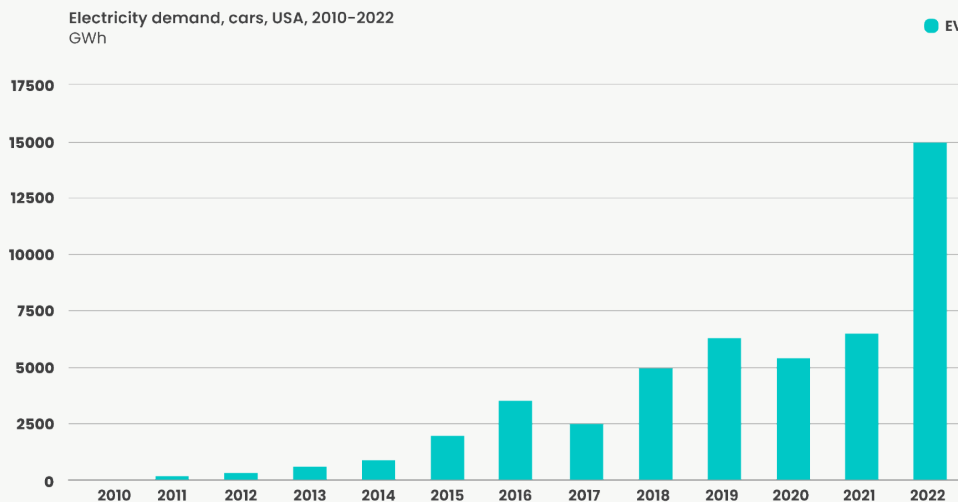
By providing end-to-end services — from planning and design to construction and ongoing maintenance — ChargeTronix (CTX) is currently helping businesses in more than 230 sites achieve greater revenue and lower costs as they adapt to the major changes coming to transportation on American highways. This EV revolution is clearly demonstrated when examining the state of travel plazas and truck stops.

The State of Travel Plazas and Truck Stops in 2023

Right now, your commuting and traveling customers are in a state of shift. They know about EVs, and more and more of them have driven one. This trend will only increase in coming years.

A recent study by National Grid looked at 71 highway charging sites at travel plazas and truck stops. Researchers examined data from two and a half years at these locations to make their predictions. The study forecasts a near future in which the competition for DC chargers becomes even more fierce, and travel plazas and truck stops will soon need enough electricity to light up a small town just to meet the demand of their current customers.

Electricity Demand of US Cars Over Time



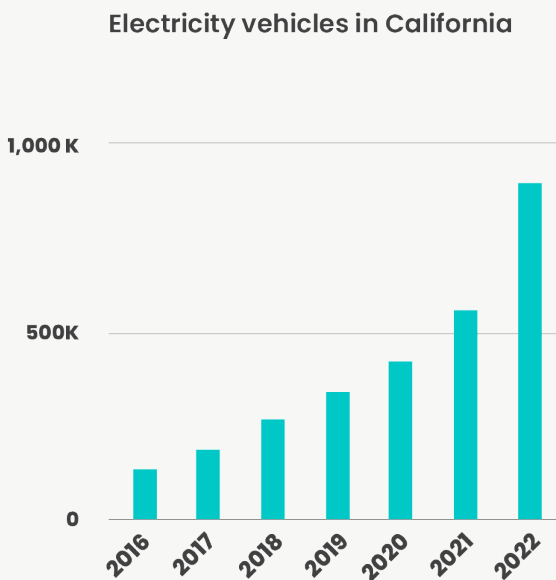
This chart shows that the demand for electricity from EV cars has more than doubled from 2021 to 2022.

[SOURCE: International Energy Agency Global EV Data Explorer]

In this new era, charging sites will need up to 20 high-powered DC chargers to satisfy their existing base of customers, and some will require more than 10 megawatts of capacity over the years 2030-2045. Industry experts expect gas pumps to be gradually replaced with charging stations, and much sooner in California.

Fast Facts

- The US Government has agreed to spend hundreds of billions of dollars in an effort to get 50% of all new car sales to be EV by 2030. [SOURCE: Electrification Coalition, "Federal EV Policy."]
- The U.S. needs 1.2 million more public EV chargers by 2030 to meet the federal goal of 50% electric vehicle sales. This requires nearly 20 times more chargers than available today. [SOURCE: McKinsey, "Building the electric-vehicle charging infrastructure America needs."]



- EV car sales have grown 10x globally in the past 5 years. In 7 years, California added 6x more EV cars and leads the nation in EV adoption. [SOURCE: International Energy Agency Global EV Data Explorer]
- Other studies show 30-42 million electric vehicles on US roads by 2030. [SOURCE: National Renewable Energy Laboratory, "Building the 2030 National Charging Network"]

- By 2035, all new cars and passenger trucks sold in California must be zero-emission vehicles. [SOURCE: California Air Resources Board, "California moves to accelerate to 100% new zeroemission vehicle sales by 2035."]
- Truck drivers in particular will need a much larger network of fast chargers to power them into the next era. There are currently only 8,160 public fast charging stations in the entire country (about 1,500 more than there were last year) and most of those do not serve commercial vehicles. [SOURCE: U.S. Dept. of Energy Alternative Fuels Data Center]

- A network of major global companies has already formed with the goal of signaling demand for 60,000 battery-operated heavy-duty trucks in the US and Europe by 2030 [SOURCE: Smart Freight Centre: “Leading global companies unite to propel electric truck adoption in the United States and Europe and signal demand for 60,000 electric heavy-duty trucks by 2030.”]

Government Push for EV

Right now, there are billions of dollars in federal, state, and local funding available that can dramatically reduce the cost of implementing EV chargers. That’s because, according to the US Department of Energy, electric vehicle sales will represent more than 50% of the new car sales market by 2030. In response, the National Electric Vehicle Infrastructure (NEVI) Act offers private businesses \$5 billion to build charging stations near highways in the US. This act requires the construction of fast DC chargers, which is a ChargeTronix specialty.

Especially relevant to the trucking industry is the Inflation Reduction Act (IRA) signed into federal law in 2022. This act turbocharges the adoption of EV heavy-duty trucks with up to \$40,000 in tax credit, which will make owning an electric truck cheaper than diesel in most cases. This is expected to accelerate the pace of electric adoption in the trucking world.

Also relevant is the bipartisan Infrastructure Investment and Jobs Act (IIJA) signed in 2021. This \$550 billion law includes provisions to increase investment in electric vehicle supply equipment (EVSE), electric vehicle (EV) batteries, and electricity grid upgrades, and light-, medium-, and heavy-duty zero emission vehicles (ZEVs).

For Californians, CALeVIP offers even more ways to build EV chargers and cash in on government rebates. CALeVIP has rebates for individual EV owners, but also helps businesses like gas stations and travel plazas implement powerful DC chargers. In fact, right now until December 12, the state is offering a special deal to encourage EV growth.

Golden State Priority Project

The State of California could give you money to build profitable EV chargers if you own a location in Northern California or the tri-county area of Southern California that includes Los Angeles, San Diego, and Orange County. Through the Golden State Priority Project (GSPP), California is spending tens of millions of dollars on eligible sites. For the right location, up to \$2 million per business is now available.

Model	Range miles (mi)	Charging Time minutes (mn)	Battery Capacity kilowatt (kWh)
Kenworth T680E	150 mi	125 mn (80%)	396 kWh
Peterbilt 579EV	150 mi	120 mn (90%)	400 kWh
Freightliner eCascadia	150-230 mi	90 mn (80%)	291 - 438 kWh
Volvo VNR Electric	275 mi	90 mn (80%)	565 kWh
Nikola Tre BEV	330 mi	160 mn (80%)	733 kWh
Tesla Semi	500 mi	30 mn (70%)	500 - 1,000 kWh

These semi-trucks are being built for the United States today. Tomorrow they will face even greater competition.

https://www.eesi.org/images/content/Chart-Available-Electric_Trucks.png

Introducing ChargeTronix

ChargeTronix (CTX) is a leading turnkey provider of electric vehicle charging solutions. Operating out of coastal Orange County, CA, CTX offers cost-effective options tailored to each client’s specific needs. ChargeTronix uses industry-leading technology to enable clients to seamlessly integrate EV charging into their operations. They support clients with the rebating process and site planning, then they provide construction and maintenance. With governments pushing for EV adoption and consumer demand rising rapidly, adding fast and reliable EV charging stations has become a must for forward-looking station owners. CTX has helped several gas stations among over 230 client locations prepare for the coming electric vehicle revolution, including the gas station owner in the following example.

A Gas Station Tries Fast Electric

Our client is the owner of 10 gas stations and convenience stores in Southern California. This client saw the growing opportunity to create more foot traffic and charging revenue by adding two fast chargers to their suite of 12 gas pumps in the city of Norco. However, finding the right partner posed challenges initially. The major EV charging companies offered limited support, while newer providers lacked a proven track record. The owner ultimately selected CTX for its expertise, affordability, and focus on each client's specific needs.

Project Scope

For this station, CTX implemented two DC fast charging stations to meet the owner's goals of attracting EV drivers and generating additional revenue. The selected EVSE units can deliver 50 kW power for fast charging. CTX also provided a five-year maintenance agreement for expert support.

Challenges

To build the new EVSE stations, the client required unique trenching work at the site. The project also included other key tasks like new signage and paint striping for the designated EV parking spots. The team carefully planned and coordinated to execute the construction in spite of these challenges.

The ChargeTronix Solution

After working with the CTX team to secure a rebate (some of which cover up to 80% of the cost of a project), CTX provided turnkey solutions that addressed all of the client's needs, including budget. CTX developed a detailed plan for the client's approval, clearly outlining the required trenching, construction, and finish work. The team handled permitting and coordinated with the utility company to upgrade electrical connections. Throughout the process, CTX leveraged its EV charging expertise to provide adaptable solutions within the site's physical limitations.

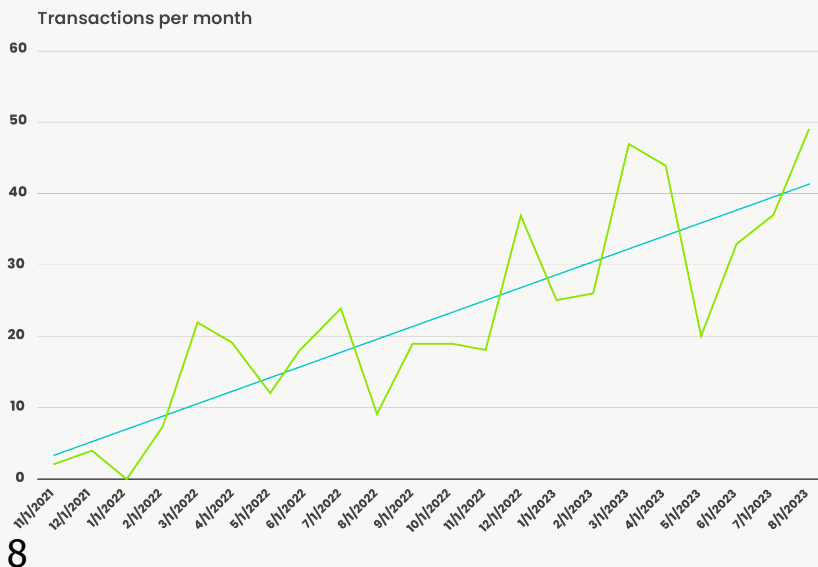
Project Execution

The project required extensive trenching work, new signage, and parking lot striping. The team developed a detailed blueprint outlining the construction plans for the client’s approval. CTX then began work in early 2020, digging trenches and upgrading electrical connections. CTX built the two new DC fast charging stations in designated parking spaces. Through diligent coordination, CTX completed the required construction and activations by July 6, 2020, meeting the client’s needs. With the high-powered EVSE operational, the gas station owner could now serve EV driving customers and meet the growing demand.

Results

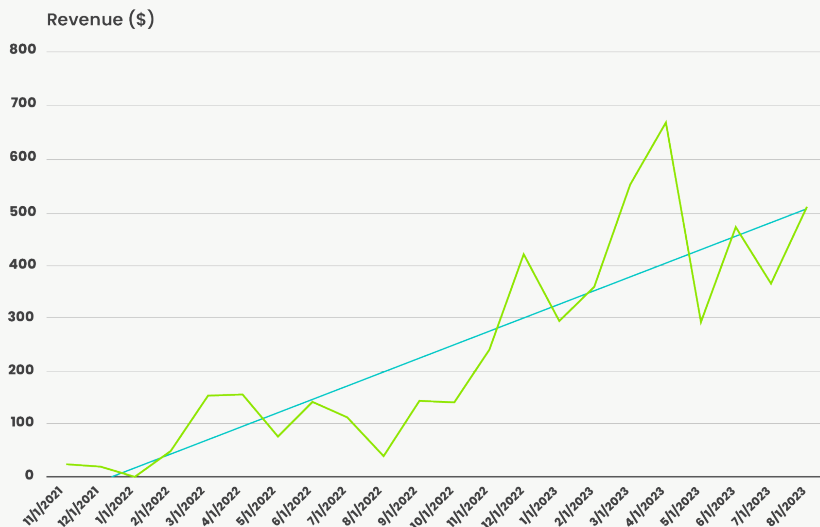
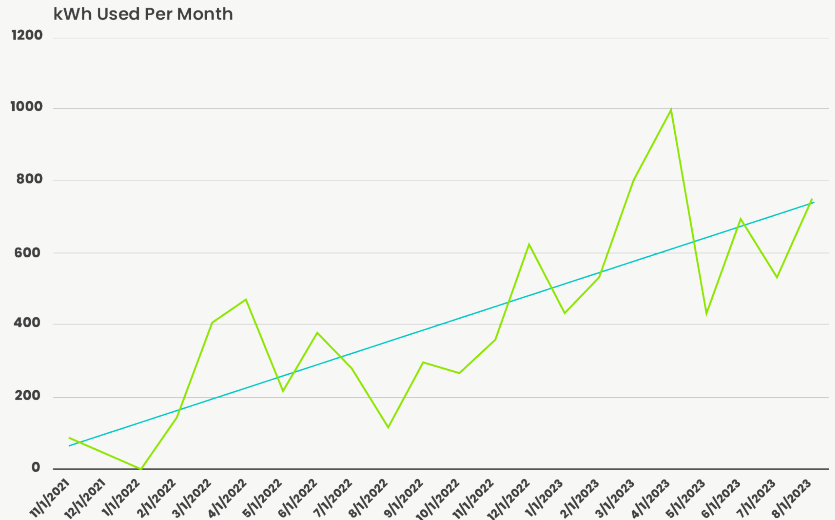
Calling the experts worked for this client. Within the first 22 months of operation, the stations yielded a 37% average monthly increase in charging revenue. This was accomplished with a mere 1.78% occupancy rate due to the young industry at the time. With only two fast chargers, this customer’s maximum revenue opportunity over 22 months is over \$330,000—that adds up to an extra \$15,000 from a new source of revenue every month, again showing only two chargers. Meanwhile their average customer spends 33 minutes at these chargers making additional purchases. By adding these chargers, the client created a new vertical from revenues coming from EV drivers.

Charts and Statistics



This chart shows a steady upwards trend in transactions made at these two fast chargers each month. Starting in January 2022, you can see the pace of transactions begin to quicken. This mirrors changes in car buying in favor of electric vehicles.

Along with more EV customers came a greater demand for energy, as this chart shows. This increased energy demand was anticipated in the planning stages by CTX engineers, and built into the project’s details.



This chart shows that along with transactions and energy, more drivers has meant more revenue for this client. Notice how much this trend has increased since the beginning of 2023. Pricing for a charge is set by the owner.

Industry Shortcomings: How CTX Addresses Them

CTX learned to improve its offerings thanks to early adopters like this client. Problems like a less-than-2% occupancy rate are being addressed by their continual commitment to innovation and increasing industry efficiency. One of those innovations is the EVOLV platform. Using their white labeled app, owners can always know the status of their EV chargers. And their customers can access those chargers and power their vehicles through their face of the app. CTX’s side of the software helps their engineers track problems related to EV charging equipment before they become major downtime issues.

This also relates to another industry problem: defective chargers. Less than 75% of the available chargers in San Francisco could actually deliver a charge in a recent major study. CTX addressed this problem by adding chargers that are built to exacting specifications, supporting Tesla drivers and all other EVs with modular chargers that can be easily repaired by any electrician. Between the EVOLV app and ChargeTronix chargers, we were able to keep their chargers charging.

Conclusion

This case study demonstrates how ChargeTronix empowers businesses to capitalize on the ongoing electric vehicle revolution. For the gas station owner, partnering with CTX to implement two fast charging stations yielded substantial new revenue while future-proofing operations, allowing them to serve customers who would otherwise avoid their location in favor of another with a fast charger.

After 22 months, the revenue from the chargers increased by an average of 37% month-over-month. The owner can now earn as much as \$15,000 per month to supplement gas sales, which are declining industry-wide. CTX handled the entire process smoothly, overcoming challenges like trenching and permitting to deliver a custom charging solution on time and, thanks to funding and rebates, on budget.

The project's success proves CTX's unique capabilities as a turnkey EVSE provider. Their expertise in securing rebates saved the client on costs. Ongoing monitoring and maintenance ensure maximum charger uptime and usage. As EV adoption accelerates, gas stations and travel plazas can replicate these results by having CTX design and implement DC fast charging tailored to their needs.

With large footprints and high customer traffic, travel plazas and truck stops are ideal locations for scaling EV charging profitably. But the window of opportunity is quickly disappearing as space for government rebates fills. Call ChargeTronix to find out how they can help you increase revenue and cost savings.

Contact

Get in touch with ChargeTronix for your clean energy transition.

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