# The key is in the ignition, but will EV charging in the US start up?

*It's clear the Biden administration is pushing EV ownership. Less clear is who will assume the risk that comes with building out the necessary charging network. Isabel O'Brien investigates*

Electric vehicles may make up less than 1 percent of all US automobiles, but the number of charging stations now sits at around 50,000 – an impressive number when compared with the 150,000 gas stations in this country, according to Fitch Ratings. In the coming decade, the number of EV charging stations may even surpass that of gas stations – that is, if recent developments in public policy prove to be effective.

On the federal scale, the Infrastructure Investment and Jobs Act, passed in November 2021, aims to install 500,000 individual chargers by 2030 through $7.5 billion in funding. Said funds will be spent at the discretion of state departments of transportation, and can be used for construction, upgrades and up to five years' worth of operating and maintenance costs. Additionally, the more recent Inflation Reduction Act, passed in the summer of 2022, seeks to bolster President Biden's electric vehicle vision, providing investors with a tax credit of up to $100,000 per charger provided it is installed in a rural or low-income area.

Robert Shaw, a managing director of private infrastructure at CBRE Investment Management, has noticed these policy shifts. "What excites us about the space right now," he says, "is the amount of tax credits, government incentives and regulations that have been announced to help kick-start the massive EV charging infrastructure build out. The IRA's tax credits, and the IRA and IIJA's increased funding to the Department of Energy for loan guarantees, aid in reducing the cost of building a project and therefore lower the utilisation assumptions we'd have to make for certain projects to be viable."

CBRE is a private markets investor, though players of many different backgrounds – from car manufacturers to utilities – are looking at EV charging.

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> **SCOTT MONROE**
> **Fitch Ratings**

It's a far cry from the traditional gas station model, where oil companies have historically doled out licenses to independently owned and operated stations.

"I think one of the interesting things about the EV charging stations is we don't know who's going to build them," says Scott Monroe, senior director of infrastructure and project finance at Fitch Ratings. "It could be utilities, which is a parallel to the gas station model, but it could also be car manufacturers, as we're seeing with Tesla. Enormous infrastructure managers may be able to roll out chargers on, say, a statewide basis or regional basis, but not one-off charging stations."

Shaw was more certain. "I think that the EV charging infrastructure networks will end up being held by infrastructure companies, either the specialty, publicly listed companies, or the private portfolio companies of infrastructure funds. Utilities are going to be a big partner in the build-out of the charging infrastructure, but I don't think they're going to end up wanting to own the infrastructure long-term. And then the car manufacturers, they want to sell electric cars, but I don't think they want to spend their capital building out the charging network."

Perhaps it's because EV charging stations don't need to look like gas stations. "We just had a consulting company compare EV charging stations'

locations with those of fuel stations, and they didn't find much relation between the two," says Alexander Hunzinger, head of credit investments at SUSI Partners, a Swiss investment firm specialising in the energy transition. "For example, Tesla doesn't put super chargers on the filling stations on the motorways, but rather right off the motorway, sometimes in the middle of nowhere."

## An electric shock to the system

Who will build EV charging networks is still up in the air – as is where the financing will come from. Like most everything that is infrastructure-related in the US, the EV charging rollout will vary from state to state.

All 50 states have submitted their EV charger development plans to the federal government to get their slice of that aforementioned $7.5 billion pie, and the federal government has already reviewed and approved them. A part of those plans is procurement provisions, which could either be PPP-based or grant-based. At the moment, there are at least five states that have elected to pursue the public-private partnership model: Idaho, Indiana, Massachusetts, Oregon and Washington. Others have not yet committed, though a significant number of states are still considering it.

Funds allocated to states have a 20 percent matching requirement and a built-in mandate to consider PPPs for future fund usage. Two thirds of the $7.5 billion will be distributed according to a formula, with 10 percent of each fiscal year's allotment going towards discretionary grants; 40 percent to disadvantaged communities; and 50 percent towards competitive grants to build charging infrastructure, of which half must be applied to rural and low- to moderate-income communities.

Outside of the IIJA funding, statewide rules and regulations also vary. California, for example, has mandated that all Class A drayage trucks be electric by 2035, and at certain ports, diesel trucks are required to pay a fee per container upon entry. Additionally, California has many incentive programmes for developers. CBRE has taken notice, closing a $400 million deal to install EV charging facilities for trucks at the port of Los Angeles.

"One programme the Forum Mobility project benefited from is the HVIP programme, or the Hybrid and Zero Emission Truck and Voucher Incentive Plan, which subsidises up to 50 percent of the cost of a new EV truck," explains Shaw. "Another key programme in California is the low carbon fuel standard [LCFS], which is a cap-and-trade programme where carbon emitters are required to buy LCFS credits from companies using low carbon or zero carbon fuels to power their vehicles. And that will be a key value driver for the business because it's effectively offsetting electricity fuel costs."

Other states are not as friendly. Take Wyoming, for instance. State lawmakers introduced a bill there in January to ban the sale of electric vehicles in the state altogether. And while the measure hasn't been passed, and is not expected to, it is hard to imagine that a statewide incentive programme will pass in its place.

## Build, build, build

Should a state elect to pursue the PPP route with its allocated money from the IIJA, what form would it take?

Public-private partnerships that are already in place are scarce. One – established without funds from the IIJA – is through the Carlyle Group's subsidiary company, AlphaStruxure, and Montgomery County, Maryland. The 25-year deal incorporates an unknown amount of funding – making up 100 percent of equity in the project – being deployed by the firm to install electric vehicle charging stations at the county's bus docking facilities.

"AlphaStruxure will supply us [Montgomery County's electric bus fleet] with a base load, to service our complete requirements. The system will operate 24/7 and provide us a fixed amount of electricity over that time period. And they'll be paid for that," says Michael Yambrach, chief of energy and sustainability for Montgomery County.

In other words, the PPP incorporates an availability-based revenue

model – which, according to Monroe, will be the most important aspect of any PPP programme for EV charging. "Is the developer taking on the risk and rewards of demand, or lack thereof? Or will states opt for an availability-style model?" he asks.

Availability-based payments would entail the government paying income to a developer for providing the charging facility, thus taking on the risk of demand and potential revenues. "Our expectation is that there's going to be a significant incentive to use the availability payments-based model because the IIJA was structured with this concept of equity in mind," Monroe clarifies.

What will be uniform across all statewide EV charging programmes, PPP or not, will be the requirements for the EV charging stations. For instance, stations have to have four Level 3 chargers, the fast type of supercharger that can bring a driver to full battery in about 30 minutes – and those chargers need to be available 24 hours a day, seven days a week, at a 97 percent reliability rate. Additionally, stations need to be spaced 50 miles apart from each other on interstate highways.

The main risk to overcome, then, is lack of usership. "I think one risk is the 'if-we-build-it-then-they-will-come' mentality, where investors anticipate a major uptake in electric vehicle ownership. If that doesn't pan out, a developer using the demand-based PPP model will be left exposed," says Monroe.

These worries factored into CBRE's decision-making process, too. "We're focused on finding EV charging networks that can mitigate underutilisation risks," says Shaw. "It's a classic chicken-and-egg problem, because from a private infrastructure perspective, a number of the opportunities we've seen rely on high utilisation assumptions for the chargers. And it's difficult to see that happening in most markets with the number of EVs that are present in North America."

Hopefully, that risk won't last forever – or even until 2030, which is the self-imposed deadline President Biden has set to make half of all new vehicle sales within that timeframe fully electric. To facilitate this, the Inflation Reduction Act includes large tax incentives for individuals and companies to buy used and new electric vehicles, promising a rebate of up to $7,500 for vehicles under 14,000 pounds and up to $40,000 for all other vehicles.

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## Who's in the driver's seat?

With private market mammoths like Carlyle and CBRE in the mix, it's safe to say that the race for EV charging assets will be an intense one.

"It will be a war to find the right locations for charging stations, and early movers have already secured the really good ones. Those contracts can sometimes stretch up to 10 or 15 years," says Hunzinger. "Speed charging on motorways has seen a lot of money flow into it – billions, really, and with huge valuations. It's a big risk to take; we've seen 50x, 60x, 80x, even sometimes 90x EBITDA."

If you think he sounds worried that his firm is missing out, you'd be wrong. SUSI Partners recently invested in OBE Power, a Florida-based provider of residential EV charging services, through its SUSI Partners Energy Efficiency and Transition Credit Fund II. Unlike Carlyle and CBRE, the firm is not a PE behemoth, but rather a mid-market investor – proving that while opportunities for smaller players may be scarce in the EV charging market, they're still available; you just have to find them.

"We looked at our first potential EV charging project four or five years ago from an equity perspective. It was a little bit too early because back then there was not a real business model which had a track record or something you could rely on," Hunzinger says. "It was at a very early stage, a venture capital stage, and from a risk profile standpoint, so it wasn't suitable for our credit strategy, either. We take a very rather defensive risk profile usually.

"I think what we can say is very predictable about their contracts is that well, first of all, most of their portfolio is currently concentrated in charging located in the parking garages of large condos, meaning that they have significant captive audience. They're targeting smaller chargers, not high-speed ones, which is very attractive as they're low capex."

While the investment isn't a PPP, the all-too-important availability-based payments were a must for the firm. On top of predictable cashflows, OBE Power receives payments from its clients, owners of residential facilities, to provide charging in their parking lots. For private debt investors, or more conservative infrastructure investors, mitigating this usership risk and finding companies with such types of contracts will be a must.

Much like a vehicle itself, there will be many gears turning and working together to make the rollout of charging infrastructure happen. Between IIJA funds, statewide incentives, and smaller, private efforts, investors have many options and opportunities to get in on the ground floor of what will most likely be the infrastructure of the future.

Nevertheless, there's a long road ahead before that infrastructure becomes available to the masses. In the meantime, we shall see whether investors can manoeuvre around usership risk. ■