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Federal Spending to Rapidly Expand EV Infrastructure

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Fitch Ratings-New York/San Francisco-22 November 2022: State departments of transportation (DOTs) will leverage federal funding provided for electric vehicle (EV) charging stations under the Infrastructure Investment and Jobs Act (IIJA) to procure EV infrastructure, with public private partnerships (P3s) a viable delivery method for EV projects, Fitch Ratings says. Funds are allocated to the states, which have a 20% matching requirement, and some DOTs are poised to partner with private enterprises who have the expertise to design, build, finance, operate and maintain charging infrastructure.

The IIJA provides $7.5 billion for EV charging infrastructure, including construction, upgrades, five years of operating and maintenance costs, with the goal of installing 500,000 chargers by 2030. While the private sector has moved quickly to roll out EV charging stations, coverage is concentrated in more affluent and urban areas where risk adjusted returns were strongest, leaving significant gaps in rural and low-income regions. Funds under the IIJA advance the public policy goal of filling these gaps, similar to the Inflation Reduction Act, which provides a tax credit of up to $100,000 per device for EV charging stations in rural or low-income areas.

Of the $7.5 billion, $5 billion is distributed according to a formula, with 10% of each fiscal year's allotment reserved to fill gaps in the national network through discretionary grants. Current guidance requires states to apply 40% of their formulaic allocation to benefit disadvantaged communities. The remainder of total EV infrastructure funds, $2.5 billion, is distributed via competitive grants, 50% of which must be applied to EV infrastructure in rural and low- and moderate-income communities. It is unclear how many projects that may have proceeded with private funds will now benefit from federal grants. The Federal Highway Administration has approved all of the EV infrastructure plans that have been submitted by all 50 states, DC and Puerto Rico.

Urban areas are conducive to demand-based infrastructure P3s that generate cash flow to pay debt service and return a profit to the developer. However, the IIJA's focus on charging stations in economically disadvantaged communities where demand is likely lower may lend itself the use of availability payment-based P3s, which expose the sponsoring government, not the developer, to demand risks. The average price of an EV, approximately $64,000, is similar to luxury vehicle pricing, according to Kelley Blue Book, and is not much less than the real median U.S. household pre-tax income of approximately $71,000.

As more EV charging stations come online, the ownership and revenue structure of projects will vary. The private ownership paradigm, akin to gas stations, is likely to be the most prominent. It is unclear if private ownership will remain diversified among car manufacturers, specialty EV charging companies, and utilities over the long term. Public policy varies, including support for municipal charging networks and rebates or other private investment incentives. States with a track record of pursuing P3 projects are more likely to consider a P3 framework for delivering EV charging infrastructure. Texas DOT's EV infrastructure proposal indicates the state has no plans to own or operate charging stations, while California builds stations with funds from various fees including vehicle registration.

Electricity demand will grow with increased EV car ownership and charging stations, highlighting the need for reliable supply. Federal guidance, which has yet to be finalized, indicates that EV charging stations must be interoperable across technology and have 24-hour availability with 97% reliability. McKinsey estimates that if EV ownership meets the Fed's 2030 uptake goal, the U.S. will need to generate 230 billion kWh just to charge EVs, up from 11 billion kWh currently. Grid reliability is a concern as power utilities increasingly turn to renewable resources. During California's heat wave earlier this year, grid reliability/demands on power supply resulted in the governor asking residents not to charge their EVs during peak hours to avoid blackouts.

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