Electric charging stations europe

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The European Union is the global frontrunner in the adoption of electric vehicles (EVs): its member countries are responsible for more than a quarter of the world"s EV production, and EVs represented roughly 20 percent of its new-car sales in 2021. The region"s combination of forward-thinking incumbent manufacturers and early-adopting EV consumers offers it a unique opportunity to create a world-leading EV ecosystem. That could generate new jobs, lessen air pollution, accelerate progress toward climate goals, and help Europe become a global EV lighthouse.

These findings hold important implications for a variety of stakeholders. Charging-equipment manufacturers will probably need to scale up production. Charge-point operators might wish to coordinate with electric utilities to address the predicted power demands. And automobile and truck makers must prepare to meet shifting consumer priorities.

The potential social inequities that could result from the infrastructure rollout are an important issue. Fortunately, the supply of infrastructure can be designed for inclusiveness through careful coordination and investment. Below are some key findings noted in the ACEA report and our analysis of what they could mean for various European EV players.

Prospective EV buyers want assurances that they"ll be able to charge their vehicles conveniently, but each additional EV driver creates more competition for access to public charging points. A 2019 McKinsey survey found that more than half of consumers" concerns about EVs involved batteries, charging, and driving range. Without enough charging stations to allay drivers" anxieties, the adoption of EVs could slow.

Last year, France (where about 400 public chargers a week are now installed) and Germany (with about 200) had the fastest pace of installation in the European Union. But they, and the entire European Union, are far behind the target rate, which would ramp up with each new year. On average, 6,000 public charging points a week would have to be installed in the European Union as a whole from 2021 to 2030, so there is much ground to make up.

Parts of Europe"s electricity grid will need to be reinforced before millions of new EV chargers can be connected to it. But the grid upgrades directly required by the electricity demands of new EV infrastructure would account for only 11 percent of total annual EU-27 grid investments. Most grid enhancements will be directed at distribution systems, carrying medium- and low-voltage electricity from substations to end users, not at centralized, high-voltage transmission systems.

The widespread adoption of EVs could help Europe achieve its decarbonization targets--unless fossil fuels generate the energy used to charge EVs. To prevent EVs from triggering an increase in Europe"s carbon emissions, the report calls for adding sufficient renewable-energy capacity to meet the additional electricity

demand expected from future EVs.

Our analysis shows that electricity demand resulting directly from the charging of passenger and commercial EVs could increase from nine terawatt hours (less than 1 percent of the region"s current total electricity consumption) in 2021 to 165 terawatt hours in 2030. As a result, though EV-specific electricity demand may increase by nearly 40 percent a year, it may still represent only about 6 percent of all electricity consumed in the EU-27 (Exhibit 3).

The push to electrify Europe"s vehicles will be profoundly more difficult if EV ownership remains out of reach for a large share of Europe"s population. But making EVs a realistic choice for everyone doesn"t mean just making the vehicles affordable. It also means providing access to affordable charging points.

Buyers who live in single-family houses with garages might have little problem installing their own chargers. For everyone else, charging will be less straightforward. EV owners who live in apartment buildings and park on the street will rely heavily on public chargers--in 2021, 42 percent of European EV owners living in cities had no access to home charging points. They might well fear that competition for access to those public chargers will be fierce. An equitable rollout of charging infrastructure calls for installing public charging points in all neighborhoods.