

Electric Vehicle Charging Cloud Platform

DETAILS

SECTOR | Transport

STAGE | Operations and Maintenance

TECHNOLOGIES | Cloud Computing, EV Charging

SUMMARY

The solution is Electric Vehicle Charging (EVC) system consisting of varying technologies of chargers (slow, fast and ultra-fast) and EV Cloud Platform. Scaling up EVC infrastructure and managing wide networks require these networks to be connected in order to manage charging points remotely. This solution aims at providing several functionalities including monitoring and analyzing charger's usage, setting prices, accessing to chargers and resolving incidents remotely, therefore lowering operational costs substantially and improving operational efficiency.

Mass customization and scalability benefits of the solution enable other operators to use this IT platform. In this way, operators who are willing to focus on improving user experience in charging delivery of smaller operators without capacity of doing substantial investment in the IT infrastructure might benefit from the proposed closed based solution depending on their IT needs.

EV market is expected to grow exponentially in the coming years. This trend requires abilities for faster scale-up and management of wide charging networks as well as capacity to manage vast amount of online transactions and analyze data. In this regard, cloud based solutions equipped with insights and reporting features have potential to handle these requirements.

VALUE CREATED

Improving efficiency and reducing costs:

EV Cloud Platform enables scaling up of EV charging operations and managing wide charging networks more efficiently. This lowers scaling-up and operating costs, and improves operational efficiency.

Enhancing economic, social and environmental value:

Taking EV charging and cloud based IT solution as a complete system, the proposed solution contributes to decarbonization of road transport. This results in benefits of reduced emissions and noise.

Moreover, the solution supports EV market uptake, therefore contributing to bring forward social and environmental benefits of electro mobility.

Project Investment Cost is EUR 100 million (2018).

This use case is a contribution from the D20-LTIC (Long Term Investors Club) together with the LTIIA (Long Term Infrastructure Investors Association) , with some adaptations from the Global Infrastructure Hub.

RISKS AND MITIGATIONS

Technological Maturity

Developments in cloud computing technology and cloud architecture enjoying the benefits of network economies and economies of scale along with the developments in EV charging technologies keep lowering digitally enabled charging technology cost. This enables improved returns on investment.

Cybersecurity

As EV charging infrastructures become more connected relying on vast amount of data transactions for operations, they are exposed to risk of cyber-attacks. Cybersecurity needs to be built in the system starting from the system design.

Privacy

Digitally enabled EV charging systems process vast amount of data, which might include also personal data. The systems should be designed, implemented and operated securing protection of personal data.

User Acceptance

Highly sophisticated management systems and user interfaces would limit user abilities to implement system functionalities causing resistance to use new technologies. Robust and user friendly systems and user interfaces might improve user acceptance. People's concerns over data privacy and cybersecurity issues should be carefully handled.

EXAMPLE: <https://www.allego.eu/business/ev-cloud>