



# ELECTRIC VEHICLES SMART CHARGING

New Strategic Solution Allows Electric Vehicles Smart Charging

## CHALLENGES

The company needs to enable its customers to smart charge electric cars with chargers manufactured by the company, that are standard equipment of electric cars. It is necessary to support smart charging via the mobile application. Customers must be able to take advantage of attractive tariffs when energy is the cheapest so that they can reap the benefits themselves. Previous versions of chargers are not supported by the software so, the company and the customer are not aware of charging state.

## SOLUTIONS

The solution integrates all chargers produced by the company registered in the IoT infrastructure. Two-way communication allows you to receive data from chargers, incl. for transactions, meter values, etc. and sending a configuration to chargers that allows for optimal charging with the use of variable electricity tariffs. The backend uses advanced algorithms to calculate the optimal charging parameters. Communication is based on the OCPP protocol. The end user manages his chargers and charges via the mobile app. The solution meets very strict security requirements in accordance with the IEC 62443 standard.

## BENEFITS

### Smart charging

Remote management of the charger configuration allows for the application of the currently optimal charging parameters.

### Competitive advantage

The use of innovative algorithms allows you to build a competitive advantage on the market

### Support for service

The company's service has complete knowledge about released chargers, their states, potential problems, transferred data, and also allows you to manage the firmware of chargers

## AT A GLANCE

### Objectives:



- Enable Smart Charging
- Remote charger configuration
- Management via mobile app for the end user
- Support for service

### Solution:



- IoT EV Chargers
- Cloud services for charging, devices and mobile app
- Dashboard console
- API for mobile APP
- Compliance with IEC 62443 standard

## PROJECT DETAILS



### Client

A company that produces EV Chargers.  
250 - 500 employees



### Solution

IoT, Cloud service, API for mobile app, dashboard



### Technology

IoT: PKI, X.509, IEC 62443, OCPP 2.0.1, Firmware  
Cloud Service: AWS Cloud, Java, SNS, SQS, PUSH, Kinesis, noSQL, Redis, Angular, RDS, CDC, WebSocket, OCPP



### Tools

GitLab CI/CD, AWS DevOps, Terraform