

How does an EV charging management software work?

Remote Monitoring, Management & Troubleshooting of charging stations.



THE RISE OF E-MOBILITY

The e-mobility revolution is coming fast, and all eyes are turning to EV charging infrastructure, the crucial part of e-mobility adoption success.



Every charging station that is not running is not making money for the e-Mobility Service Providers (eMSP) and Charge Point Operators (CPOs). Not to mention the frustration for the users.



Building a charging network is relatively easy, but getting the reliability and excellent maintenance of charging networks is challenging.

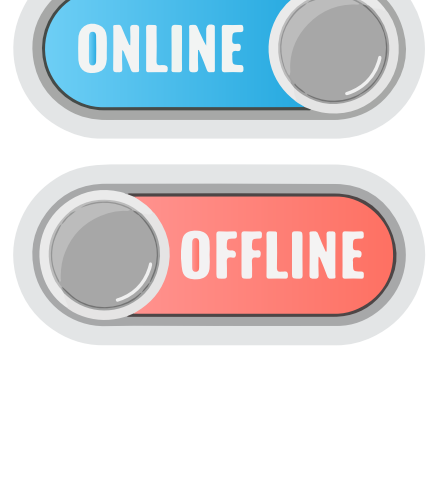
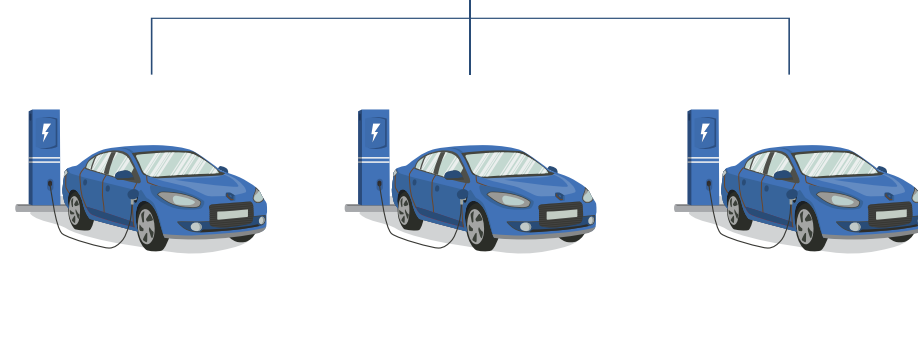



A good customer experience is a key to more general electric vehicle adaptation and a challenge where a suitable EV charging management software will be crucial.

MONITORING

The monitoring function is the core of EV charging management! It monitors single charging stations and the whole EV charging network as a group.

To enable 24/7 monitoring, Tridens EV Charge uses the Open Charge Point Protocol (OCPP). OCPP 1.6 is the most common version used, but the upgrade to the latest version, OCPP 2.0.1, is happening.



Monitoring the current state of stations

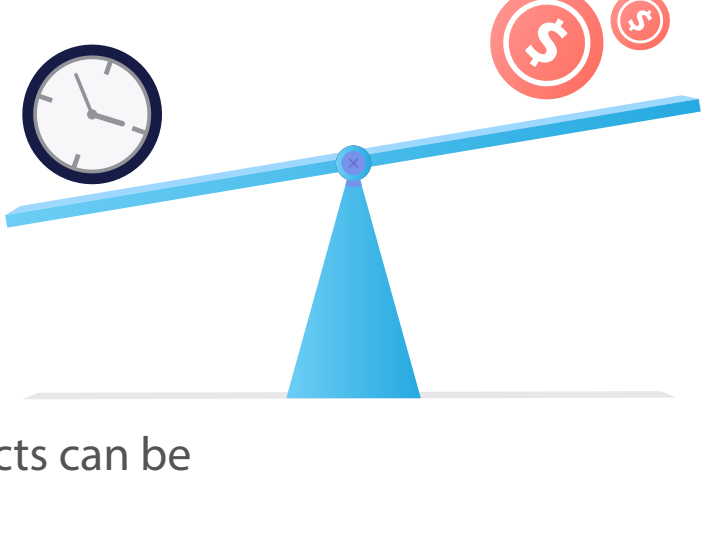
Charge point operators (CPOs) need real-time insight into the EV charging network.

Most important data:

- the total number of connected charging stations
- current status in the system
- online, offline, or without communication

Monitoring consumption at stations

- EV charging management software monitors:
- the charging process of all the vehicles in the system
 - real-time energy production
 - load balancing
 - other local energy consumption
 - electrical infrastructure capabilities.



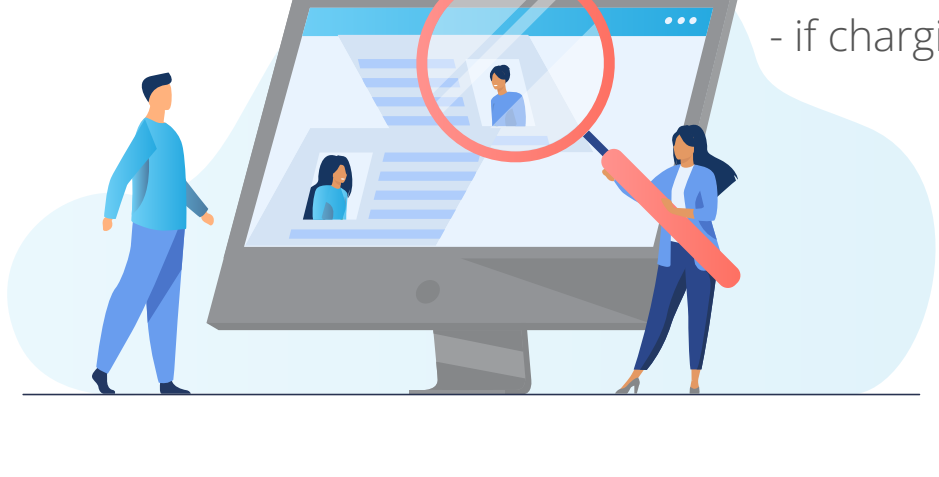
For advanced load balancing functions, third-party products can be seamlessly integrated with REST APIs.

Monitoring of sessions (past and open)

A CPO can monitor past and open sessions to predict user behavior and infrastructure performance.

Daily or on-demand charging reports offer insight into:

- when users prefer to charge
- how fast they want to charge
- if charging restrictions are needed during peak times
- the number of charging processes
 - total revenue
- API interface to ERP systems
- interfaces to roaming platforms
 - rate management
- other relevant data

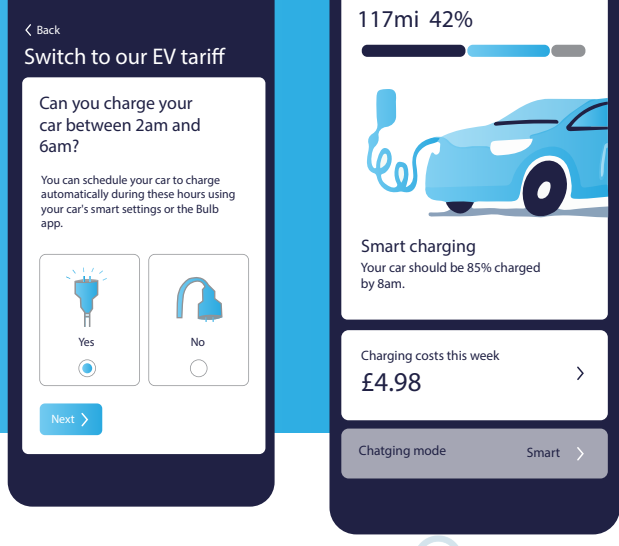


MANAGEMENT

A Smart EV charging management software enables Supplier-managed charging (SMC), where charging providers can adjust the charging parameters according to different pricing plans or situations.

CPOs can:

- adjust or limit charging power for an assigned user
- configure different electricity rate schedules to prioritize a specific client
- distribute available charging power between vehicles depending on their selected pricing plan or departure time.



Adding stations

If a new device is OCPP compliant, it can be simply added to the EV charging network!

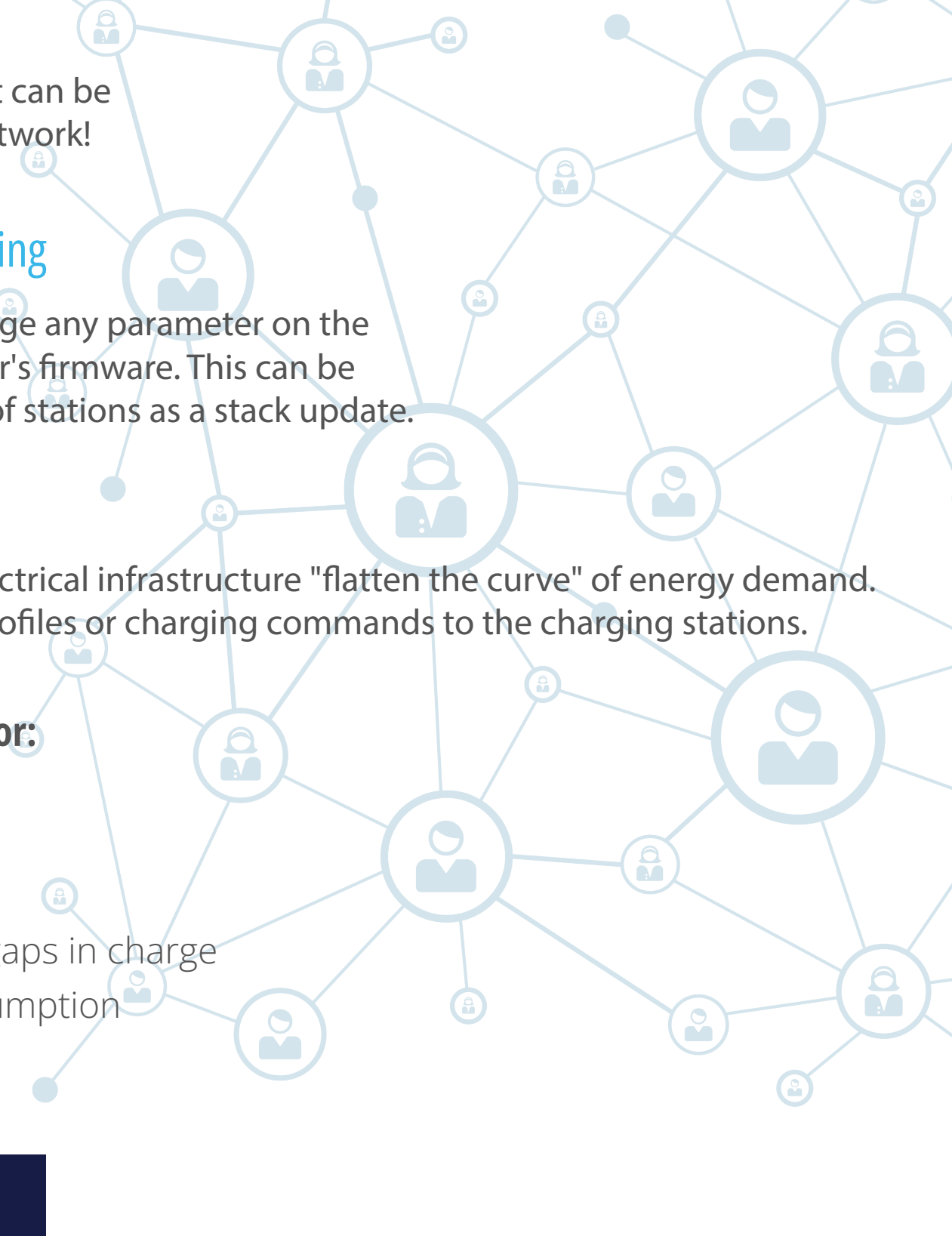
Changing parameters and updating

The charge point operator can change any parameter on the charging station or update a charger's firmware. This can be done to a single station or a group of stations as a stack update.

Creating Smart Charging Profiles

Smart charging profiles help the electrical infrastructure "flatten the curve" of energy demand. The central system can send load profiles or charging commands to the charging stations.

- Smart Charging profiles are used for:**
- load balancing
 - peak reductions
 - cost-based optimizations
 - other measurements to avoid gaps in charge plans and actual EV power consumption



TROUBLESHOOTING

Not operational or broken charging stations are losing money and affecting customer satisfaction!

Smart EV charging management software processes large amounts of real-time data coming from the EV charging network and quickly recognizes any chargers' issues.



STEP 1

Smart EV charging management software will quickly identify non-operational or non-responsive units in real-time and alert the CPO.

STEP 2

The system will immediately start the automated troubleshooting processes and try to make the charging station operational.

STEP 3

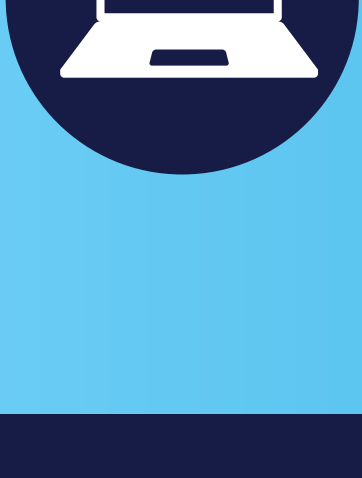
If the automated troubleshooting process fails, the CPO will check the logs in the control panel and start manual remote troubleshooting.

STEP 4

If remote troubleshooting is not successful, the CPO will dispatch a crew for on-site maintenance and provide all the data about the problem.



WANT TO KNOW MORE?



Tridens EV Charge is an all-in-one EV charging software solution for Charge Point Operators (CPO) and e-Mobility Service Providers (EMP). The software uses the OCPP protocol so that any OCPP station can connect to the system regardless of manufacturer or model.

Tridens EV charge can monitor, manage, troubleshoot, and configure any attributes on the station, which can be used for maintenance and analyzing customer behavior to introduce extensive pricing options.