

# Automatic EV charging optimization with photovoltaics

Our client, **Otto Fischer AG**, owns a building equipped with a photovoltaic system with a nominal capacity of 257 kWp. They were seeking a load management solution for their customers, with the aim of maximizing self-consumption of solar energy while concurrently reducing CO<sub>2</sub> emissions.

The challenges included the client having three separate locations around the main building, hosting a total of 31 AC and DC charging stations from different manufacturers. Additionally, the manufacturers of charging stations and photovoltaic systems had their own non-standardized interfaces. The goal was to optimize the charging stations by prioritizing and individually configuring them to charge as much as possible through solar energy. Simultaneously, the charging power needed to be automatically and dynamically limited to minimize grid load.

## Our Solution:

- **Automatic Dynamic Power Limitation:**  
The charging power of the stations was intelligently adjusted based on the available solar energy. PV production measurement was conducted through Solar-Log.
- **Prioritization and Individual Settings:**  
Charging stations were configured according to priority and individual requirements, allowing them to exclusively utilize solar energy when sufficient sunlight was available.
- **Increase in Self-Consumption:**  
Through the optimized use of solar energy, the client's self-consumption was significantly boosted by a remarkable 30%.
- **Intelligent Control of Charging Stations:**  
We implemented an advanced control system that coordinated and monitored in real-time all 31 charging stations from manufacturers such as Zaptec, Weidmüller, Easee, Schneider Electric, and EVTEC. This facilitated the automatic and dynamic adjustment of the charging power of the stations.



## About the Project

In this project, the efficient utilization of a 257 kWp photovoltaic system was coordinated through the algorithms of CLEMAP technology. CLEMAP technology prioritized and dynamically adjusted the charging of stations from various manufacturers around the building based on the electricity production of the rooftop photovoltaic system. The load management could even set the charging current in a way that exclusively utilizes solar power.



## Results:

- **Cost Savings:**  
The client achieves annual energy cost savings of 3,300 CHF, significantly contributing to the enhancement of operational efficiency.
- **Environmental Friendliness:**  
An impressive reduction of 4.5 tons of CO<sub>2</sub> emissions per year is realized. These measures make a substantial contribution to sustainable development and environmental conservation.

This case study illustrates our expertise in addressing complex challenges in the field of renewable energy. It highlights how, by efficiently harnessing renewable energies, we not only reduce costs for our customers but also contribute to sustainability. Our solution is 100% "Swiss Made" and plays a role in successfully achieving the ambitious **net-zero climate goals** by 2050.