

AXSOL MEGA CHARGER – AMC

Modular storage solution for flexibilization of the charging infrastructure for e-mobility



The charging power of battery-powered cars continues to increase with newer models. Currently, the charging power of electric cars is up to 320 kW in upper mid-range and luxury class models. Most vehicles currently charge at 22 kW (AC). In the future, due to higher efficiency, charging will be switched to 43 kW and higher. Despite equally larger batteries, this will shorten their charging time and increase the attractiveness of the green mobility carrier.

The problem: Due to the increase in DC charging points, the grid capacity will not always be sufficient to supply several of the power-hungry charging columns with the high charging currents. Low-voltage but also, in some cases, medium-voltage grids can no longer cover the required load at peak times and the charging power is reduced. A circumstance that annoys customers or employees and also restricts the company's own operations.

The solution: a fully integrated storage solution. AXSOL presents **AXSOL MEGA CHARGER**, its modular solution for flexibilizing the charging infrastructure for e-mobility. Here, the charging electronics are integrated into the container as well.

Based on the AXSOL Energy Container Solutions, battery storage modules can be integrated between the grid connection and the charging columns. These buffer the power from the grid and ensure that the desired charging power is available for all connected charging columns at any time without burdening the grid. The goal of a nationwide charging infrastructure must be to ensure that every charging point is supplied with the specified charging power at all times. A buffer like our AMC not only avoids the expensive expansion of grid connection power, but can also absorb peak loads for the power grid. This stabilizes the grid infrastructure and also reduces electricity costs for consumers with an energy demand of more than 100,000 kWh per year, whose charges are calculated from a power and energy price.

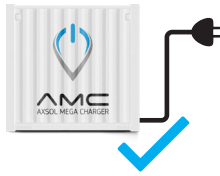
But that's not all: thanks to our advanced control system, we are able to provide functions that go beyond use purely as a temporary storage unit and can make the charging of entire vehicle fleets intelligent.

Advantages of a battery storage and possible functions:



Prevention of grid connection extension

The power from low-voltage grids is often insufficient to charge all electric cars with the desired power, especially in the case of larger charging stations (e.g., in vehicle parks or company parking lots). The result is time-intensive charging processes. The AMC can be used here as a „buffer“ storage and thus supply all charging points with the desired power without increasing the power consumption from the grid. Under certain circumstances, this can also lead to additional savings through a lower power price in electricity billing.



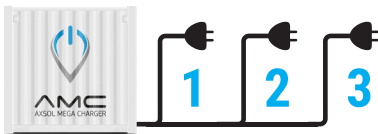
Complete package without ground work

To avoid costly ground work for laying cables for the charging stations, our AMCs offer the option of mounting charging columns directly on the outer wall of the containers. Installation costs can thus be reduced and the charging station can even be moved to another location at a later date.



Charging with self-produced electricity

More and more companies are producing green electricity through their own photovoltaic systems. To improve their own carbon footprint, their own electric-powered vehicle fleet can be charged with this electricity. To ensure that the emission-free energy is also available at times when there is little sunshine, AMCs are suitable for storing surplus solar energy.



Prioritized charging from specific charging points

The control system of our AMC makes it possible to specify certain charging stations whose output is preferentially kept high in the event of bottlenecks. For example, charging stations specially designated for customers can be prioritized.



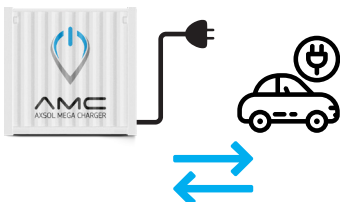
Backup-Power

The volatility of transmission and distribution networks will continue to increase in the coming years due to the shutdown of traditional power plants and the delayed expansion of renewable energies. Consequently, power outages will become more common. To charge electric vehicles even when the grid power supply is interrupted, our AMCs can be used as emergency power storage systems.



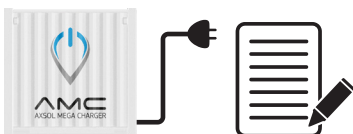
Time-dependent charging

In order to avoid power peaks and thus higher costs, it can make sense to make the full charging power available to one's own vehicle fleet only during certain time windows. AMC offers a corresponding control system that can make the charging process even more efficient.



Bidirectional charging

In the power grid of the future, e-cars will not only be seen as part of the electricity demand, but also as intermediate storage and thus part of the supply through bidirectional charging. Our own AMC control system already provides the basis for subsequent implementation of the communication protocols required for this.



Detailed billing report

The intelligent AMC platform allows you to generate reportings of the individual charging stations. This gives you a detailed insight into the respective charging processes, allows you to better track consumption and bill costs individually - for both public and non-public applications.

Potential applications for AMC solutions:

USE CASE	CONTAINER	CONNECTORS	RECOMMENDED CAPACITY
+ Fleet Management	1x 40-foot	4x 22 kW (AC) 4x 43 kW (AC) 2x 150 kW (DC)	1.580 kWh
+ Supermarket	2x 10-foot	2x 22 kW (AC) 4x 43 kW (DC)	620 kWh
+ Employee parking (configuration A)	1x 40-foot	10x 11kW (AC) 2x 22kW (AC)	220 kWh
+ Employee parking (configuration B)	1x40-foot	6x 11kW (AC) 4x 22kW (AC) 2x 43kW (DC)	584 kWh
+ Public Events	2x 20-foot	8x 22kW (AC) 4x 150kW (DC)	1.840 kWh
+ Infrastructure (service areas)	1x 20-foot	6x 150kW (DC)	1.600 kWh

Funding opportunities:

DID YOU KNOW,

THAT AVOIDING A MEDIUM VOLTAGE CONNECTION THROUGH A BUFFER STORAGE LIKE OUR AMC SYSTEM IS SUBSIDIZED IN MOST EUROPEAN COUNTRIES?

The integration of buffer storage in publicly accessible charging facilities reduces the required grid connection power and thus offers significant added value for the general charging infrastructure.

Accordingly, however, funding is only possible if the charging facility is subsequently available to the public without restriction (24/7).

Charging electric vehicles in areas not accessible to the public represents a large proportion of all charging processes. For this reason, companies and municipalities also receive funding for the integration of battery storage systems into their charging infrastructure.

Among other things, the hardware used, the energy management system, necessary construction measures and, of course, the integration of battery storage play an important role in determining the amount of funding.

PUBLIC

NON
PUBLIC