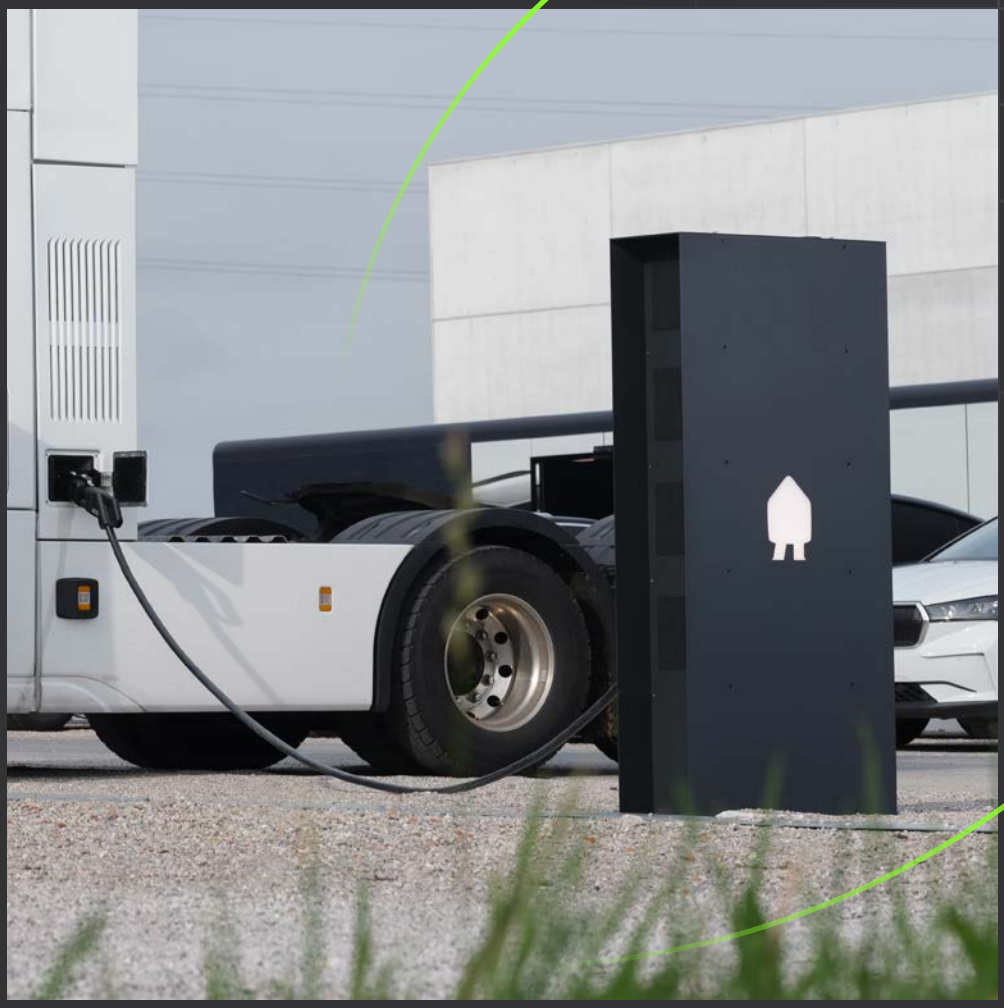


Truck charging: what's behind a failed charging session?

A practical guide to charging failures with electric trucks and vans.

smappee

Introduction

Heavy transport is electrifying fast. More and more haulage companies are adding electric trucks to their fleets, charging power per truck keeps rising, and depots, logistics sites and motorway corridors are getting their own charging infrastructure.

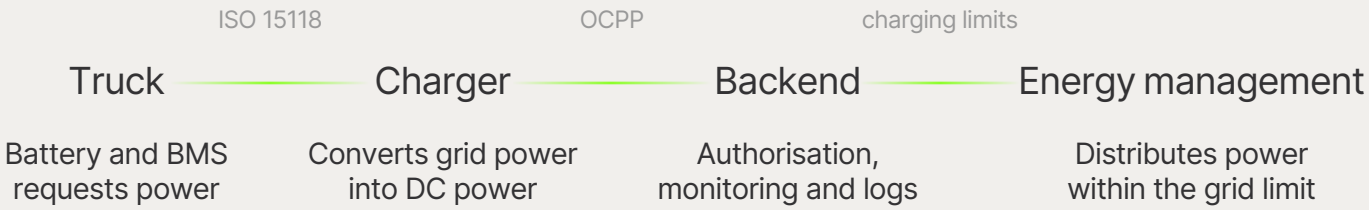
That changes day-to-day operations too. Charging becomes a fixed part of planning: a truck that isn't charged in the morning doesn't drive its route. A failed charging session therefore has immediate operational consequences.

Anyone looking for the cause soon finds that the answer is rarely simple. A charging session is the result of several systems working together. If one component responds just slightly differently than expected, the whole session can fail, even when every system works perfectly on its own.

How EV truck charging works: four systems that have to work together

Behind every charging session are four systems, connected by communication: the truck, the charger, the backend and energy management.

A charging session only works if four systems understand each other



Each system has its own software, its own firmware and its own updates and interprets the standard in its own way.

The truck requests power, the charger delivers it, the backend authorises and records the session, and energy management monitors how much power is available on site. Each link can start, limit or stop the session.

Each of these systems runs its own software, often from a different supplier. That also means:

- its own firmware
- its own update cycles
- its own interpretation of the standards

An update on one side of the chain can therefore affect a combination that worked perfectly yesterday.

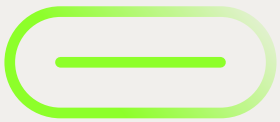
Why interoperability is the biggest challenge

A standard defines what systems say to each other, but not exactly how each manufacturer implements it.

Truck charging in Europe relies on a handful of shared agreements:

- **DIN SPEC 70121 and ISO 15118**: the ‘language’ truck and charger use to communicate with each other. ISO 15118 also enables more advanced functions, such as Plug & Charge.
- **CSS (Combined Charging System)**: the plug and the physical connection for DC charging.
- **MCS (Megawatt Charging System):** the new standard for charging in the megawatt range, designed specifically for heavy transport.
- **OCPP:** the ‘language’ the charger uses to communicate with the backend. Through OCPP, charging sessions are authorised, started and stopped, the charger reports its status and error messages, and firmware updates
  and power limits are set remotely.

These standards are essential. But they leave room for interpretation: optional fields, timing margins, the order of messages, the way an error is handled. Two implementations that both ‘comply with the standard’ can still respond slightly differently.



The USB-C comparison

Every recent phone has a USB-C port. Yet not every cable charges equally fast, not every charger supports every power profile, and not every combination of devices works the way you expect. The plug always fits, but that says little about what happens next.

Truck charging is no different. A connector that fits and a supported standard don’t guarantee a troublefree session. Interoperability, different brands and generations working together reliably, is therefore the sector’s real challenge.

A charger is not a power socket

A modern DC truck charger is first and foremost a communication system, and only then a power source.

Many people still see a fast charger as a device that simply delivers power. But before a single amp flows, truck and charger exchange dozens of messages. Among other things, they agree on:

- the battery's state of charge
- the maximum voltage the battery can handle
- the maximum current the truck wants and the charger can deliver
- the temperature of the battery, cable and connector
- safety checks, such as insulation and plug locking
- the charging strategy: how power is ramped up and down during the session

Only when both systems agree on all these points does charging start. And during the session they keep exchanging messages: the truck repeatedly requests a certain current, and the charger confirms what it is delivering.

A communication failure therefore doesn't automatically mean the charger is faulty. It only means that two systems didn't understand each other at a certain



moment.

Why the blame often lands with the wrong party

Where an error becomes visible is not always where it originates.

The charger is the only component with a screen, a status light and an error code. That's why it's the first to be blamed for every failure. But what you see at the charger is often just the symptom of something happening elsewhere.

What you see	Possible causes
Charging doesn't start	Truck and charger fail to agree during start-up communication; insulation check fails; authorisation via the backend fails
Charging stops after a few minutes	Truck or charger firmware evaluates a value differently; communication time-out; safety limit reached
Power stays low	Battery temperature (too cold or too hot); high state of charge; power limit from energy management or the grid connection
Session interrupted for no clear reason	Loss of connection to the backend; load management redistributes power; connector or cable gets too hot
Error code on the charger	Doesn't automatically mean the charger is the cause: it often reports what it receives from the truck or the backend

An important nuance

The aim is not to shift the blame. So don't say:

> *"It's the truck's fault."*

Say instead:

> *"The error message doesn't always tell you where the cause lies."*

That's a fundamental difference. The first ends a conversation, the second opens an analysis.

Why collaboration matters more than blame

Every failure that's analysed together makes the whole ecosystem more reliable.

Truck charging is a young sector that is maturing fast. You can see it in the way all parties are learning:

- Truck manufacturers (OEMs) are refining how their vehicles apply the standards.
- Charger manufacturers are testing with more and more makes and models.
- Software and backends are becoming more robust and provide clearer error information.
- Firmware is updated regularly, on both sides of the cable.
- Interoperability is growing, partly through joint test events and certification.

Looking for someone to blame straight away throws that learning opportunity away. Looking at the log files together finds the real cause faster and prevents the same error from turning up elsewhere.

Every failure thus produces new knowledge. Not for one party, but for the whole chain.

What fleet and site operators can learn from this

A structured approach to failures saves time, money and discussion. These six steps help you find the real cause faster.

1 Collect log files

Keep the charging logs from the charger and the backend, and request the vehicle logs where possible. Note the time, charging point, truck and error code.

2 Check reproducibility

Does it happen always, occasionally or just once? An error you can repeat is an error you can fix.

3 Test different trucks

Does another truck charge fine at the same charger? Then the cause probably lies in the combination, not in the charger.

4 Test different chargers

Does the same truck charge at another charging point or brand? That way you isolate the variable.

5 Use up-to-date firmware

Keep charger, backend and vehicle up to date. Many interoperability issues have already been fixed in a more recent version.

6 Share information between parties

Bring the truck supplier, charger manufacturer and backend partner together around the same data. One shared picture works faster than three separate tickets.

Tip: agree in your contracts in advance who supplies which log data and within what timeframe. That avoids discussion when it matters.

EU regulation to keep in mind

Regulation increasingly shapes how chargers communicate. That matters when you trace the cause of a failure, and when you choose or update equipment.

- **ISO 15118 becomes mandatory.** Under the EU's Alternative Fuels Infrastructure Regulation (AFIR), new or renovated public charging points must support ISO 15118-1 to -5 from 8 January 2026, and ISO 15118-20 from 1 January 2027. From 1 January 2027, ISO 15118-20 also applies to new or renovated private DC charging points, depot chargersincluded.

- **CCS2 as the baseline for trucks.** DC charging points for trucks covered by AFIR must have at least a CCS2 (Combo 2) connector. Chargers fitted only with MCS are exempt for now: the technical specifications for MCS will be added once standardisation is complete.

- **Connected and easy to pay.** Public charging points must be digitally connected, and points of 50 kW or more must accept payment cards. Existing points of 50 kW or more on the TEN-T network must comply by 1 January 2027.

- **More public truck charging.** AFIR sets minimum truck charging capacity along the TEN-T network, rising to a charging pool at least every 60 km on the core network by 2030. More public charging means trucks will meet more charger brands, which makes interoperability even more important.

- **New metering rules on the way.** A 2026 revision of the Measuring Instruments Directive (MID) brings charging equipment and DC energy meters under EU metering rules. The new rules apply to new equipment in the coming years; existing stations don't have to be retrofitted.

Most AFIR obligations apply to publicly accessible charging points. A private depot used only by your own fleet is largely outside their scope, but the ISO 15118-20 requirement shows that depot chargers are increasingly covered too. Check with your suppliers which rules apply to your site.

Sources: EUR-Lex, Regulation (EU) 2023/1804 (AFIR); EUR-Lex, Commission Delegated Regulation (EU) 2025/656; European Commission, Questions and answers on AFIR; EUR-Lex, Directive (EU) 2026/706 amending the Measuring Instruments Directive

Conclusion

The future of truck charging isn't just about more charging points, but about better collaboration.

Collaboration between:

- the battery's state of charge
- the maximum voltage the battery can handle
- the maximum current the truck wants and the charger can deliver
- the temperature of the battery, cable and connector

A charging problem isn't always a charging problem. It's often a question that falls between two systems. Investigating that question together solves not only today's failure, but tomorrow's too.

Because only when every link in the chain works together seamlessly will charging become as natural as refuelling.