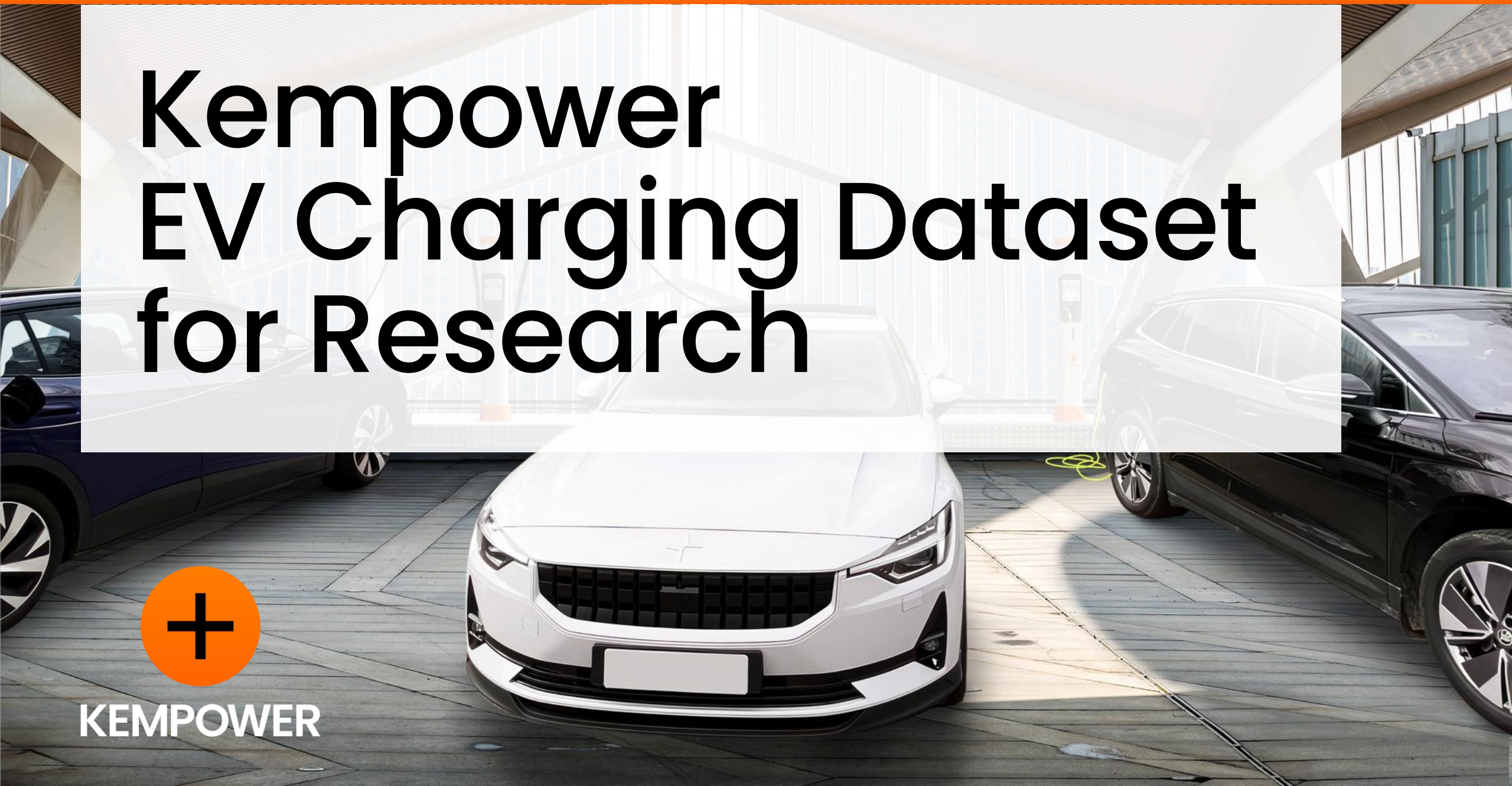
Kempower EV Charging Dataset for Research



KEMPOWER

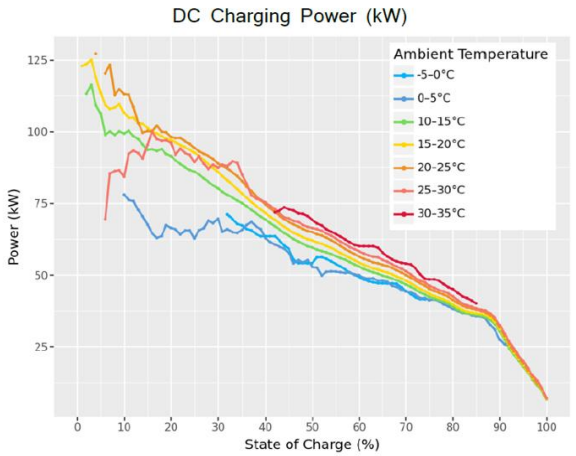
What We're Sharing?

Passenger EV Charging Dataset

- Contains charging metrics from various EV models across different regions and environments
- **Aggregated** and **anonymized** to fully protect customer and end-user identity
- Designed to capture and represent **real-world EV charging behavior** without charger limitations
  - Provides an unbiased view of EV-side charging behavior
- Accompanied by thorough documentation and usage guides
  - Ensures ease of use and encourages innovation
- Hosted on an accessible platform with built-in access control
  - Ready for scalable public distribution, supporting wide research adoption

Polestar 2

Renault Megane E-Tech



Pilot in Autumn 2025

Share EV charging dataset to selected partners and validate the value and practices.

Kempower, EMRC (Electric Mobility Research Center) and the HETE (Heavy Electric Traffic Ecosystem) program will run a pilot of the EV Charging Dataset for Research during Autumn 2025 (starting in the beginning of September). The goal of the pilot is to:

- Get **early insights on the research and innovation** that the dataset enables
- **Validate the tools, practices and conditions** for using the dataset
- **Get feedback from pilot users** and offer **possibilities to demonstrate and showcase their work** with the data

To apply for the pilot group, all researchers and students must apply through EMRC and all HETE partners must apply through HETE. Estimated schedule for application period is August 2025, and pilot will run 9-12/2025.

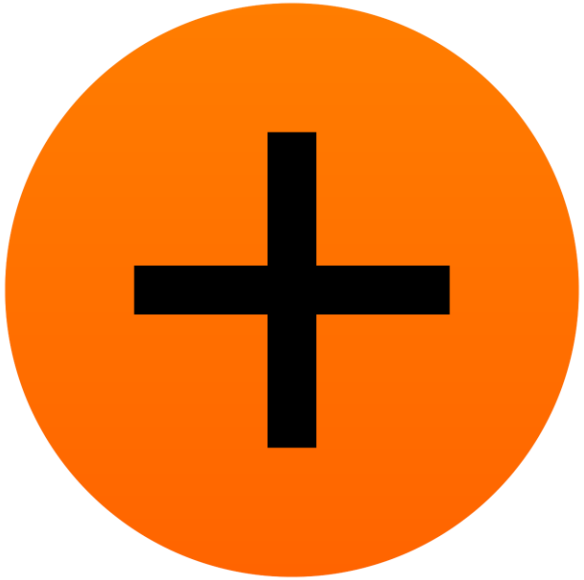
Kempower will evaluate the results from the pilot and decide on expanding the usage in 2026.

Kempower EV Charging Dataset for Research, Preliminary Data Description

- Filtered raw data
- Data points from individual transactions
  - Power, Current, Voltage, SoC%, Relative timestamp
  - Metadata: EV Model, Month, Year, Country, Ambient Temperature*
  - Tens to hundreds of samples per charging transaction
- Scope:
  - Meaningful charging sessions with >2 kWh energy delivered
  - Year 2024, time of charging session at month level
  - Selected countries
  - Only charging sessions where vehicle was the limitation (charger did not limit)
  - Active Charging-phase only (no handshake or after charging stopped)

Examples of possible insights from the dataset

- Comparison of **charging performance** (”charging curves”) of different passenger EV model at different temperature ranges
- Analysis of charging behaviour of different **battery chemistries** (when combined with EV model data)
- Simulation of **demand for charging power at charging sites** (when combined with traffic data)
- Simulation of **demand for charging power at electricity network level** (when combined with EV adoption data)



Thank you

kempower.com