Release notes

Firmware release 1.6.0

2024 Q3

peblar ROCKSOLID CHARGERS

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Introduction

Dear customer, we are pleased to share this document containing essential information and instructions regarding the next firmware update (release 1.6.0) for our AC chargers. We encourage you to share this valuable information with the relevant stakeholders within your organization.

New features in firmware update 1.6.0

The latest firmware update 1.6.0 introduces a range of features designed to enhance the functionality and user experience of our chargers and backoffice systems. Below is an overview of all the changes in the new firmware:

- **Local REST API and Modbus TCP API**: These two local API's can be exposed to use for local control of the charger. This allows the charger to be integrated into a (H)EMS system.
- **Group load balancing over Ethernet**: Load balancing in a group of chargers can now be performed using Ethernet. This feature increases the flexibility in the installation of groups of chargers.
- **Household power slider:** We introduce a slider that can be used to manage household power consumption. This feature targets markets where peak power consumption is limited (e.g., Belgium with the capacity tariff).
- **Multiple cable (un)lock options for socket models**: With this feature, the cable can be permanently fixed to the socket charger. The socket can also be unlocked in the web interface.
- **Showing error code on display**: The active error code is shown on the display for easier troubleshooting.
- **Improved commissioning flow:** The commissioning process has been streamlined with additional diagnostics and configurations to incorporate new features, ensuring a more straightforward experience for installers.
- **UI and UX improvements of the local web interface**: Improvements made to the user interface (UI) and user experience (UX) to enhance user-friendliness for the consumer. For Peblar specifically, the look and feel have been adjusted to better align with Peblar branding guidelines.
- **Phase imbalance support in the commissioning interface**: This ensures that the charger is configured in a way that it will not exceed the maximum phase imbalance caused by charging an EV.
- **Support of new measurement sources**: HomeWizard WiFi kWh meter 1-phase and 3-phase MID supported.
- **Multiple improvements:** Firmware updates of Peblar chargers prioritize Ethernet and WiFi over LTE, enhanced WiFi connectivity, multiple OCPP improvements.

Local REST API and Modbus TCP API

With the new firmware release, the charger can expose a local REST and Modbus TCP API. These API's can be used for a (H)EMS to control the charger and fully integrate the system in your household or energy management solution.

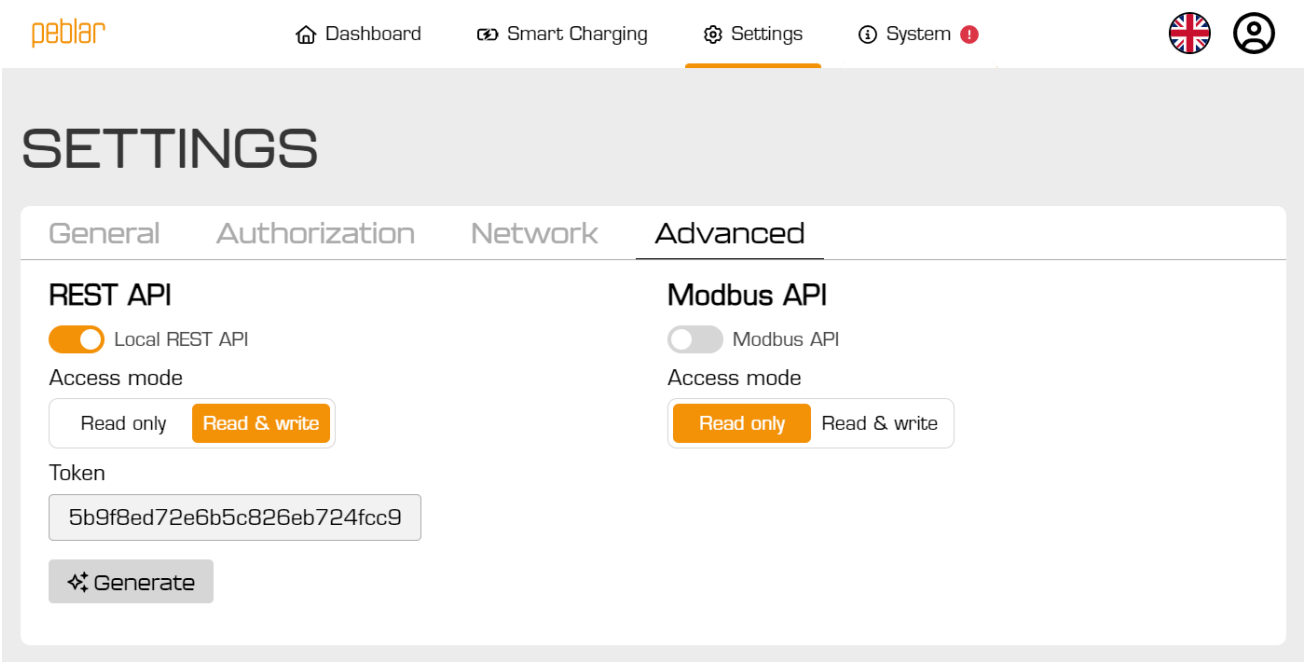
Documentation about the API's will be available soon via http://developer.peblar.com/.

Peblar is fully committed to integrate our chargers into market-leading energy management systems. Please reach out to your account manager to inform them about your preferred EMS party.

Activating the API

Go to **Settings → Advanced** in the web interface and enable the local API's. They can both be configured as Read only or Read & write.

The token ensures that only authorized entities can interact with the charging session via the REST API, providing an additional layer of security.



OCPP parameters

- **ModbusServerAllowed**: Read-only parameter that determines whether the Modbus server is allowed to be used by the consumer.
- **ModbusServerEnable**: Enables or disables the functionality of exposing the local Modbus API.
- **ModbusServerAccessMode**: Defines whether the access mode is Read only or Read & write.

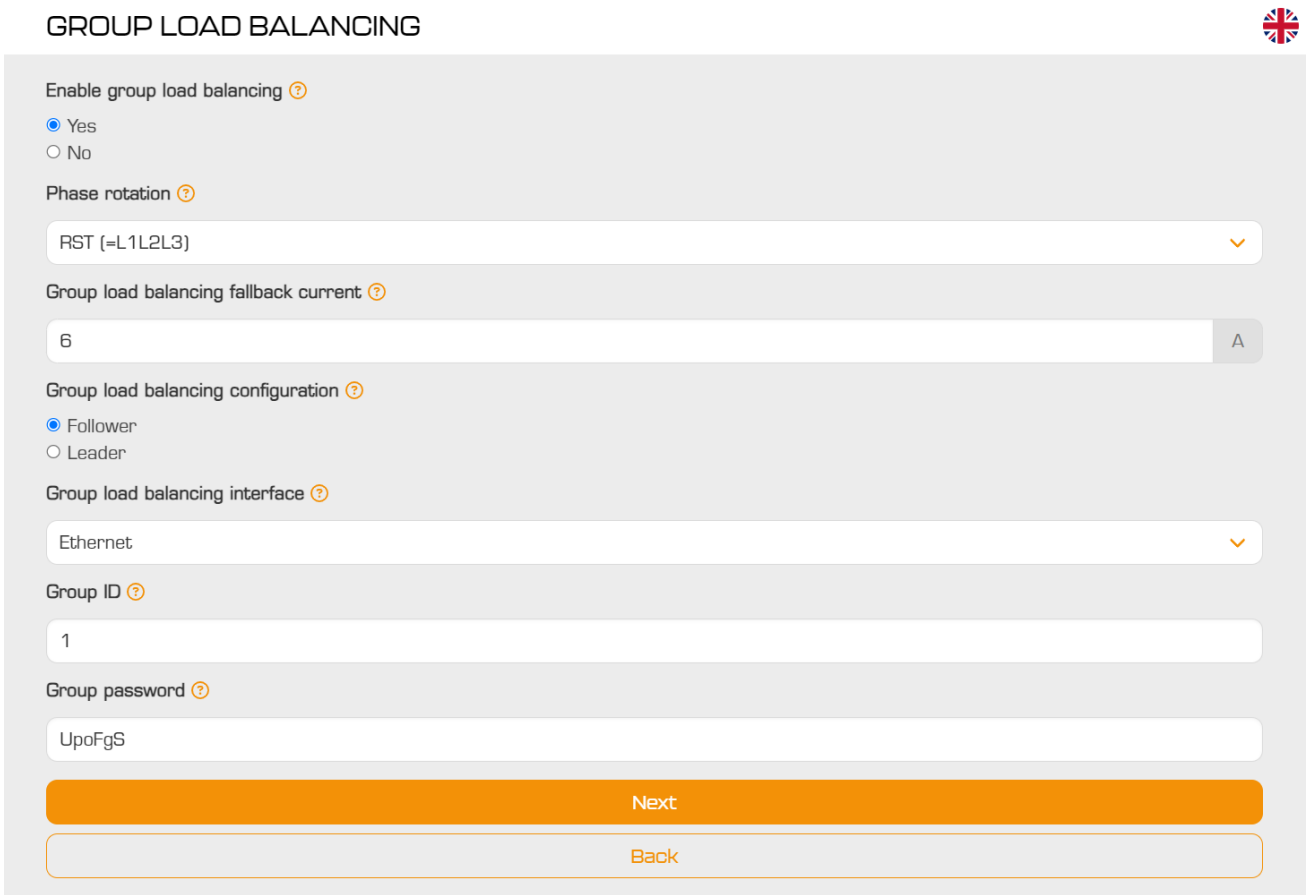
Group load balancing over Ethernet

The system can now perform group load balancing using Ethernet (star-setup). The chargers are connected via a local network (switch) and communicate with each other using this interface. This feature allows chargers to be grouped, with each group containing up to 100 chargers.
One of the chargers in the group shall still be configured as a leader.

Commissioning steps

The commissioning process has been improved to streamline the setup and ensure a more straightforward experience for installers. While the majority of the group load balancing settings remain unchanged, the following enhancements have been made to improve setup and security:

- **Interface configuration:** You can now select the interface type, either Ethernet or RS485.
- **Group ID and password:** Added configurations for group ID and group password to prevent unauthorized entities from connecting to the group. This enhances the security of the load balancing setup over Ethernet.
- **Descriptive phase rotation values:** The values in the phase rotation field are now more descriptive, providing clearer information for better configuration.



OCPP parameters

- **GroupLoadBalancingInterface**: Indicates the interface used for group load balancing. Can be "RS485" or "Ethernet".
- **GroupLoadBalancingGroupId**: Identifier of the group.

Household power slider

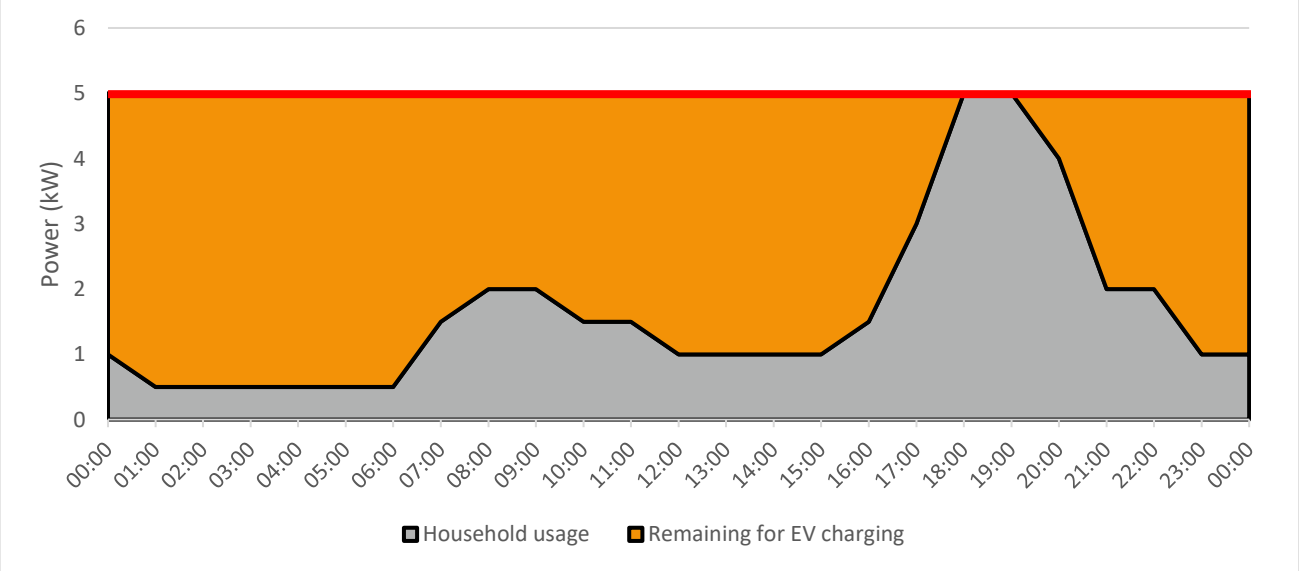
This power slider is designed to manage household power consumption and can be used to address, for example, the capacity tariff in Belgium. It sets the maximum amount of power that can be used in a household. The charger prevents the power limit from being exceeded when charging a vehicle, taking into account the power usage of other household devices.

***Notes**:*

- *The power limit can still be exceeded when the charging session is paused, and other appliances are consuming significant power.*
- *CT coils cannot be used for this functionality.*

Example

The example below illustrates a household with the power slider set to 5 kW, ensuring compliance with the capacity tariff in Belgium by not exceeding this limit. The charger adjusts the maximum power available for charging the EV accordingly. The graph shows the setpoint of the charger for charging an EV, depicted in orange.

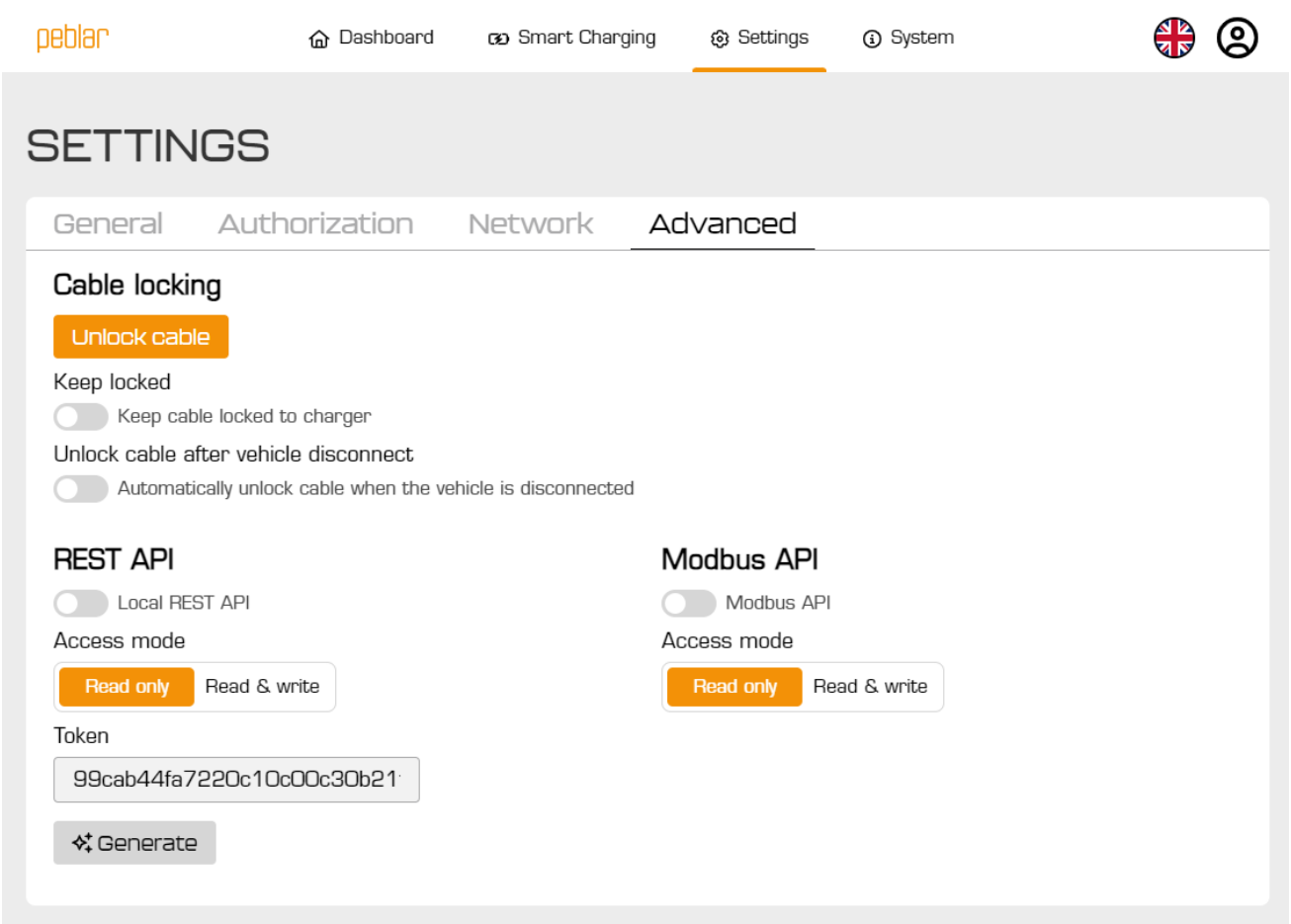


OCPP parameters

- **UserDefinedHouseholdPowerLimitEnable**: Enable or disable the household power slider functionality for the consumer.
- **UserDefinedHouseholdPowerLimitSource**: Select the measurement source for the household power slider. The options are “homewizard”, “p1extender” and “modbustcp”.
- **UserDefinedHouseholdPowerLimitSourceParameters**: Used when selecting a Modbus meter as measurement source.
- **UserDefinedHouseholdPowerLimit**: Household power limit set by the consumer.

Cable (un)lock options

With this update, socket variants now offer enhanced cable management features. Firstly, you can permanently lock the charging cable to the socket. Secondly, a new web interface feature is added to unlock the cable from the charger. Additionally, the socket can be unlocked automatically after disconnecting from the EV.



OCPP parameters

- **UserKeepSocketLocked**: Activates this functionality to permanently lock the cable in the socket.

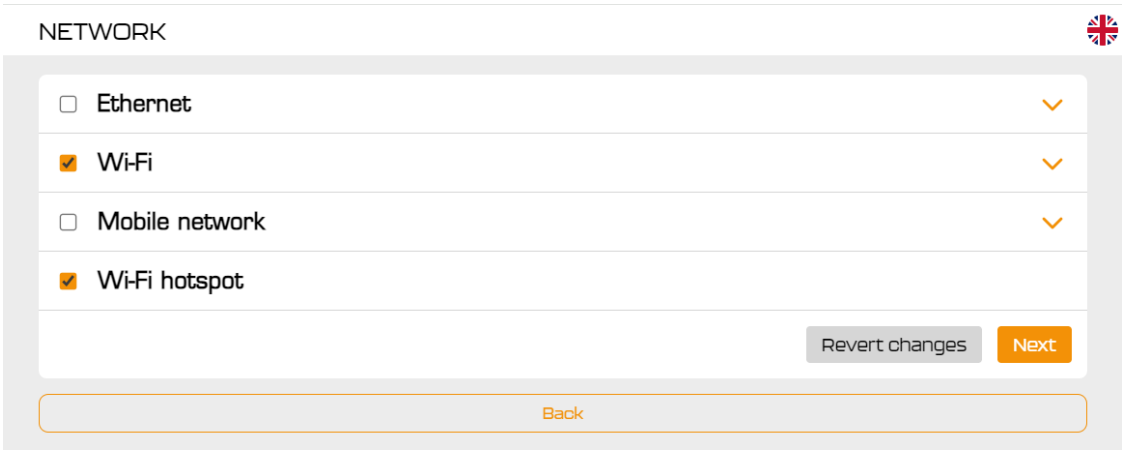
Error codes on display

When an error occurs and the charger starts blinking red, the error code will appear on the display. This instantly informs the user and installer about the specific issue, ensuring a high level of service for the customer by faster root cause investigation.

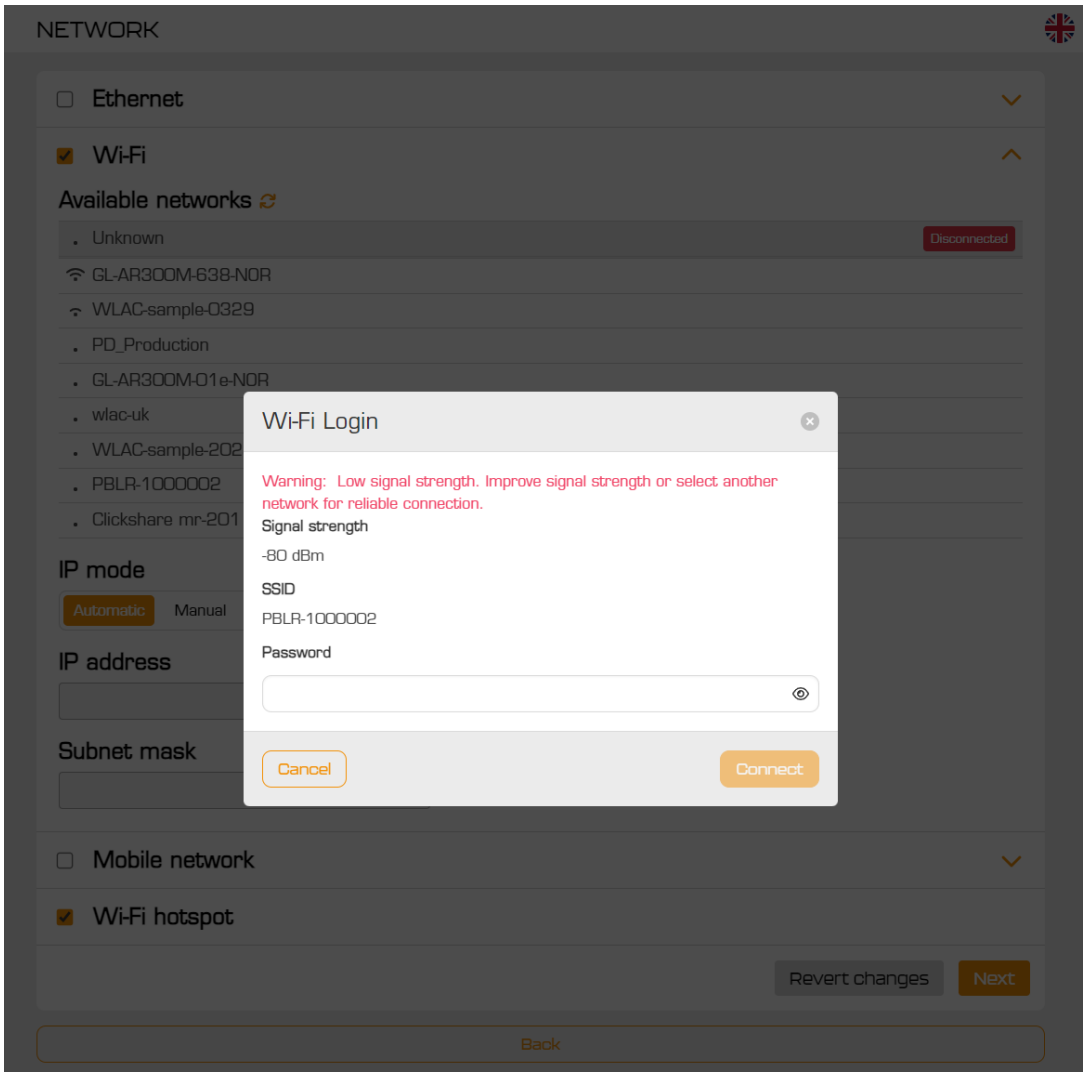
Improved commissioning flow

The commissioning flow has been improved by extending some configuration steps and showing more diagnostics going through the commissioning interface.

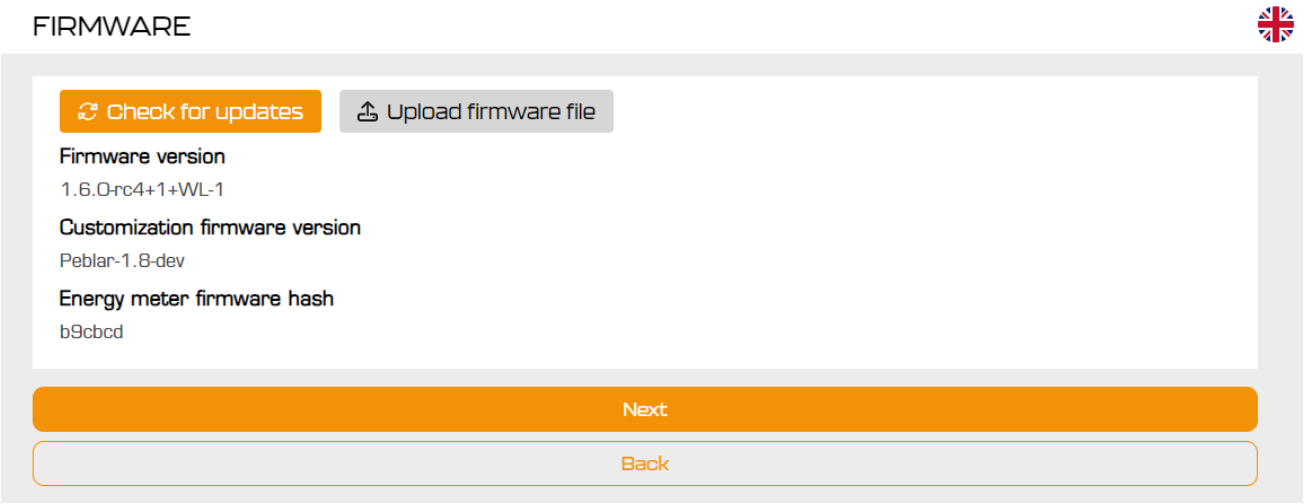
- **Network settings configuration**: The first step is to configure network settings. Here you can disable the mobile network, if no SIM card is inserted. This will eliminate the warnings related to the SIM card and modem that regularly pop up on chargers with a modem (warning codes 10303, 10304, 10306).



- **WiFi signal strength display**: When selecting a network, the WiFi signal strength is now displayed, and the system will notify the installer if the network connection is reliable enough.



- **Firmware update**: A firmware update can be performed after configuring network settings. Peblar systems will check for updates on the online server if connected to the internet. Alternatively, firmware updates can be performed locally for all systems.



UI and UX improvements of the web interface

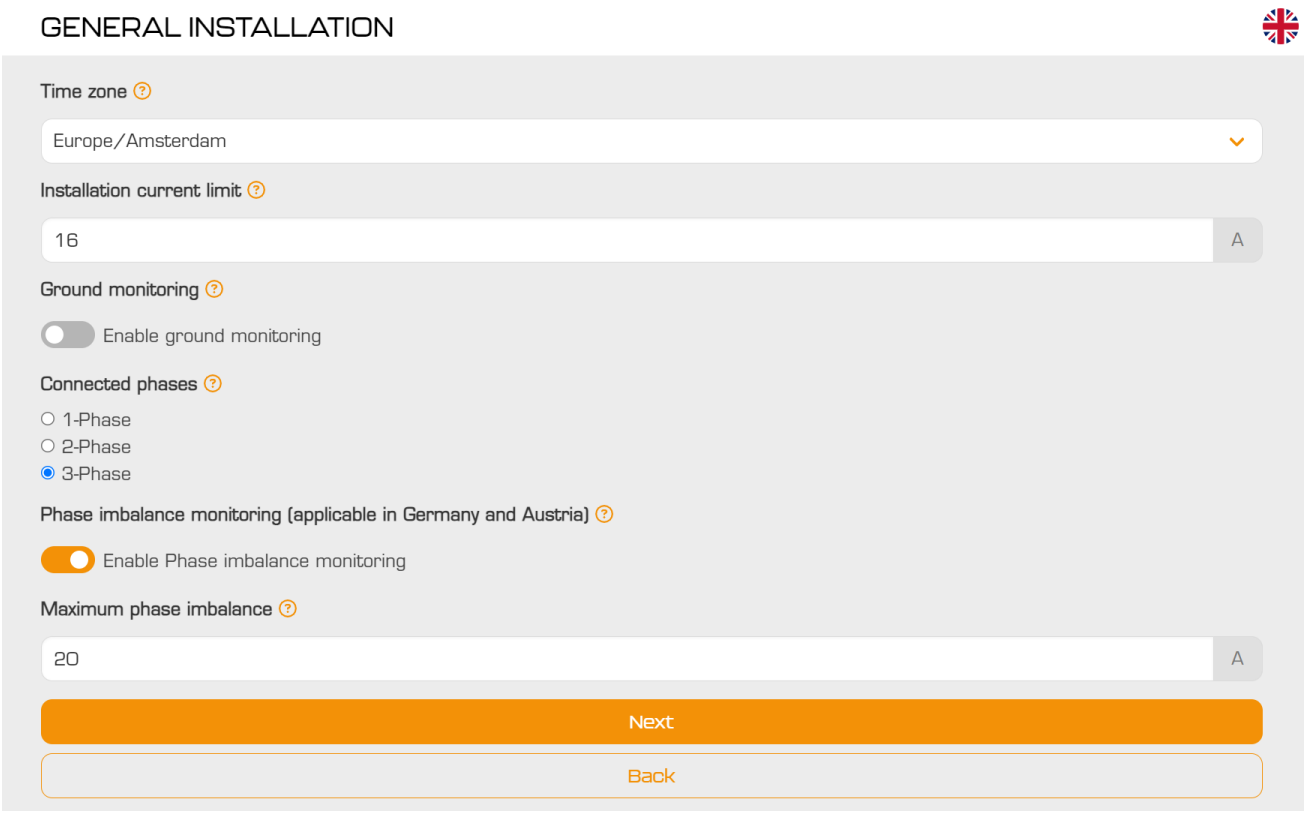
The dashboard now has fewer options, simplifying navigation for consumers. Additionally, the interface has been redesigned to align with Peblar's branding guidelines.

Phase imbalance in commissioning interface

The installer can enable phase imbalance monitoring in the commissioning interface. This feature helps maintain balance by limiting the charging current when the imbalance between phases exceeds the configured threshold, and is relevant for installations in countries like Germany and Austria.

Commissioning steps:

- Enable phase imbalance monitoring during the 'General Installation' step.
- Specify the maximum phase imbalance allowed in this field.



OCPP parameters:

- **VDEPhaseImbalanceEnable**: Enables this functionality.
- **VDEPhaseImbalanceLimit**: Allows you to configure the maximum allowed phase imbalance caused by charging the EV.

Support of new measurement sources

The HomeWizard 1-phase and 3-phase in-line kWh meters are now officially supported by our chargers. These meters can be used for solar charging, dynamic (group) load balancing, and the household power slider.

Note: Ensure that the firmware of the HomeWizard in-line meter is up-to-date, to use it as measurement source.

Improvements

Functional improvements

- **Priority for network connections**: Peblar's own web interface prioritizes LAN and WiFi over LTE when performing firmware downloads initiated locally.
- **Enhanced WiFi connectivity:** Improved connection stability and performance for WiFi clients.
- **Scheduled charging**: The system now ensures that scheduled charging functionality is only available when time synchronization is confirmed.

OCPP improvements

- **Timestamp in StatusNotification:** The StatusNotification request message now includes a timestamp.
- **Quick reset restored:** The soft reset functionality has been reverted to a quick reset.
- **UnlockConnectorOnEVSideDisconnect:** Can now be adjusted without requiring a reboot
- **Improved NotImplemented response**: Enhanced handling of the NotImplemented response from the server.
- **ChangeAvailability request:** Request to change availability will be rejected when the charger is in Faulted state.

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Reach out to the Peblar account managers for inquiries.

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