

SG Brain

Get the most out of your energy. Automatically.

SG CONNECT JUST GOT SMARTER – MEET SG BRAIN.

SG Brain is an advanced feature within the SG Connect system that enables **automatic optimization of battery operation**. The battery charges when electricity prices are low and discharged when market prices are high.

The system uses artificial intelligence (AI) and forecasting algorithms to **calculate the optimal charging and discharging schedule every hour**. It bases this plan on day-ahead electricity prices, weather-based solar production forecasts, the battery's current State of Charge (SoC), and the user's individual consumption patterns.

SG Brain combines **both technical and economic optimization** – always selecting the scenario that delivers the best outcome for the user in terms of energy cost savings and long-term battery health.

BENEFITS FOR THE USER

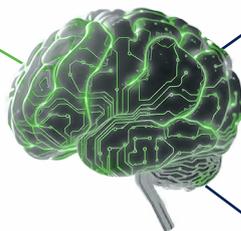
- Lower overall energy costs with automatic charging/discharging and smart device management.
- Lower grid costs (peak shaving).
- Fully automatic optimization that adapts to prices, weather, solar power plant production forecasts, and your habits—without any additional intervention.
- A transparent operating plan that you can check at any time, with the option of manual control if you wish.

TERMS AND CONDITIONS FOR USING SG BRAIN

The SG Brain functionality can only be used by users who meet the following conditions:

The user has a contract for Day-Ahead electricity prices

SG Brain needs access to the daily electricity price list in order to perform forecasting and scheduling of charging / discharging based on market prices.



The user has a system with an NGEN Controller

The functionality works exclusively on G-MAX or PIXII storage units that include NGEN Controller.

Active connection to the SG Connect application

SG Brain is configured and controlled from the SG Connect application.

BASIC OPERATION

SG Brain runs automatically in the background and generates an hourly forecast for the next **24–48 hours (end of day and next day)**. It uses a combination of input data and technical parameters of the battery:





Input data:

- Day-Ahead electricity price list
- Battery state of charge (Soc)
- Forecast of solar production based on weather conditions
- Consumption forecast based on historical patterns at the measuring point at the location

Technical parameters:

- Capacity (kWh) – available amount of energy for cycling
- Power (kW) – permissible charging and discharging power
- Round-trip efficiency Degradation cost – estimated value of one cycle in relation to battery life
- Grid restrictions – maximum permissible power in consumption or transmission
- Network charges and tariff structures – time-based transmission costs and network charges taken into account

DUAL OPTIMIZATION LOGIC

1. Technical optimization,

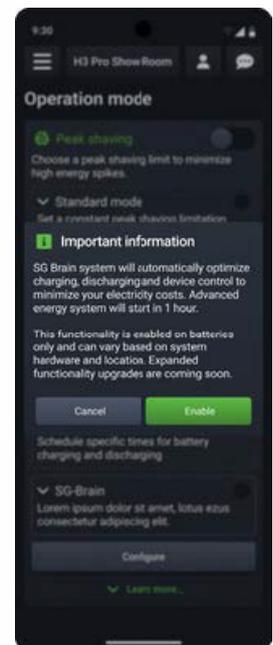
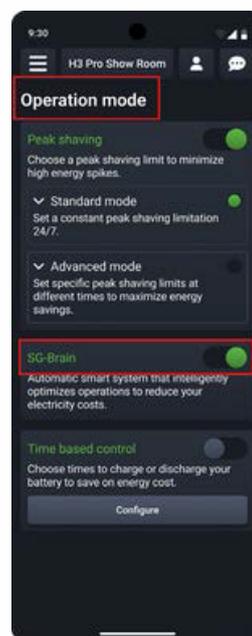
- SG Brain ensures that the battery system operates within the optimal range of capacity and power.
- The aim is to reduce energy losses and prevent accelerated battery degradation.
- The system monitors cycles, voltage, charging/discharging power, and temperature, and adjusts operation in real time.

2. Cost optimization

- Based on Day-Ahead electricity prices, the system predicts the most favorable time intervals for charging and discharging.
- It only performs cycles where the expected profit is higher than the battery's depreciation cost.
- The result is a balance between short-term savings and long-term system sustainability.

HOW TO ENABLE SG BRAIN IN THE SG CONNECT APP

1. Open the SG Connect app and update it to the latest version.
2. Select Operation Mode.
3. Activate SG Brain with the slider and confirm your selection.
4. A notification will appear stating that SG Brain will be launched in one hour.
5. Enable it.



HIERARCHY OF OPERATION MODES

SG Brain operates within several hierarchical modes in the SG Connect app:

- Manual mode and Peak shaving are superior to SG Brain.
- Time-based control is subordinate to SG Brain.

