

Empowering the world for renewable energy

INTILION AG | Paderborn, Germany



Company



INTILION at a glance





Full power from Paderborn, Germany

- Our head office is located in Paderborn, Germany
- With the most wind turbines per square meter in the entire state of North Rhine-Westphalia, our region is at the forefront of the energy transition
- Outstanding infrastructure and connection to major metropolitan areas throughout Europe
- Paderborn University is the driving force of research and innovation in the center of the city



INTILION



Market trends



Drivers of global energy transition

Everything will be electric



The end of the fossil era is inevitable. Not only in power generation but also in heat generation.

costs

Investments pay off through declining costs. Not only for generation but also for storage (battery) and conversion (electrolyzer).

of variable costs

Wind and sun do not invoice and allow everyone to use this raw material free of charge.

Few become many: the future is decentralized and connected.

Digitalization enables the synchronization of all actors in the energy

market and opens up unexpected possibilities.

Increasing volatility of electricity supply and demand

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- To ensure grid stability and sufficient energy supply, energy storage systems need to be integrated into the grid.
- Overcapacities are stored in the energy storage system.
- In case of high loads in the grid, the stored energy is fed into the grid.



In balance





The transformation of the energy system to smart grids

From centralization to decentralization with increasing digitization



Source: Based on Agora Energiewende (2017): "Energiewende 2030: The Big Picture. Megatrends, Ziele, Strategien und eine 10-Punkte-Agenda für die zweite Phase der Energiewende."



Applications

We derive our applications directly from electricity market

Using the meter as the key differentiator



- The essential element of market segmentation is the distinction between "Front-of-the-meter (FTM)" and "Behind-themeter (BTM)"
- Front-of-the-meter: Front-of-the-meter plants are all plants that are directly connected to power generators and the distribution grid
- Behind-the-meter: In contrast, behind-themeter (BTM) systems are those located behind the electric meter. They generate and consume electricity on site and do not pass through the electricity meter



INTILION addresses the market's key applications



Sustainable, flexible, and secure



Peak shaving

Commercial and industrial companies often have high peak loads in their energy consumption. An energy storage system can help shave those peaks.



Atypical | Intensive grid use

The energy storage system charges during periods of low grid load and the electricity is drawn from it during periods of high load or by an annual consumption of at least 10 GWh as well as 7,000 hours. This relieves the grid and results in individual grid charges.



Self-consumption

Optimize energy consumption by storing surplus self-generated power for use when needed.

Expansion of grid connection

The grid is not designed to cope with the increasing number of electric vehicles charging points. Energy storage systems in-crease the available output and optimize the charging infrastructure.



Grid-forming operation

Ensure an independent power supply and prevent blackout by building an island grid with the help of an energy storage system.



Control reserve

Our energy storage systems can handle and support all common control power scenarios in Europe.



Our portfolio



Current product portfolio for buffering energy



Outdoor commercial storage system

Indoor commercial storage system Indoor & outdoor large-scale storage systems

Our products combine scalability, flexibility, and connectivity



Outdoor commercial storage system

73.1 up to 1169.6 kWh 25 kVA, 50 kVA, and 73 kVA

In-/outdoor

Product scaleable

Indoor commercial storage system

154 – 616 kWh up to 1,200 kWh 25 – 400 kVA in 25 kVA steps

Indoor

Module scaleable

Indoor & outdoor large-scale storage

From 1 up to 100 MWh From 1000 kVA

Outdoor

Module and product scaleable





References

Full power throughout Europe

Take a look at the following extract from our references and where our energy storage systems already ensure an optimal energy balance. Our energy storage systems provide a wide range of applications in various fields of application.





SmartGrid system for the reliable operation of sports facilities with INFOWARE

In the context of the complex energy project "Modern Cities" in the area of the sports center of the city of Békéscsaba, we installed a 2,435 kWh storage system. The primary use of the system is to cover the energy consumption of the sports center exclusively with renewable energy. Since the storage was installed in a residential area, we included our fire protection system as an additional safety component.

Application:

Self-consumption optimization

Peak shaving





Qair Deutschland GmbH & Stadtwerke Leipzig GmbH – Priestewitz, Germany

Innovation tender: Reliable supply in Priestewitz

The aim of the innovation tender issued by the German Federal Network Agency is to improve grid stability and security by storing surplus energy from renewable sources and feeding it back into the grid when needed. With a capacity of 3.7 MVA, the storage system can store and release a considerable amount of electricity. The purpose of the battery storage is to provide Frequency Restoration Reserve with automatic activation to the grid operators. The battery storage can react quickly to changes in the grid frequency and thus help keep the power grid stable.

Application:

Frequency Restoration Reserve with automatic activation (aFFR)





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Utility in Bielefeld - Bielefeld, Germany

8 MW hybrid storage for frequency control with E-heating for a utility in Bielefeld

The stored electricity is used to balance grid fluctuations and, in combination with resistance heaters, to supply district heating. The 8 MWh storage is installed indoors within the former premises of a power plant switchgear in Bielefeld.

Application:

Frequency Containment Reserve

Frequency Restoration Reserve with automatic activation











Federal research project "INZELL" in cooperation with Federal Ministry of Economics and Technology

INZELL is a project of the Federal Ministry for Economic Affairs and Energy in cooperation with the Technical University of Munich (TUM), the Technical University of Clausthal (TUC) and the Center for Applied Energy Research Bavaria e.V. (ZAE). Industry partners are Bayernwerk Netz GmbH and Siemens Gamesa Renewable Energy GmbH. The primary project objective is the stable operation of the Max Bögl industrial network as an island network

Application:

Peak shaving at high tariff times (in Germany 'atypic grid utilization')









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... and we empower the world to use renewable energy

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