

Optimized Integration of PV- Produced Electricity in Buildings

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SHIFTING THE LIMITS

FRONIUS INTERNATIONAL GMBH

R&D

424 employees

2 660

FSP's worldwide

Employees

3 385 employees in 21 countries

GLOBAL

21 subsidiaries/partners in 60 countries

Production capacity

>1,3 GW

>1 000 000

Sold inverters

INNOVATION

928 active patents


Turnover

> 500 mio EUR




FRONIUS MARKET SEGMENTS

Home




System size
1 ... 10 kWp
Homes, ...

Small Commercial



System size
10 ... 100 kWp
Agricultural buildings, small companies

Medium & Large Commercial



System size
100 ... 5 MWp
Companies and industry
rooftop or free field

Rural



System size
10kW ... MW size
Microgrid, genset solutions

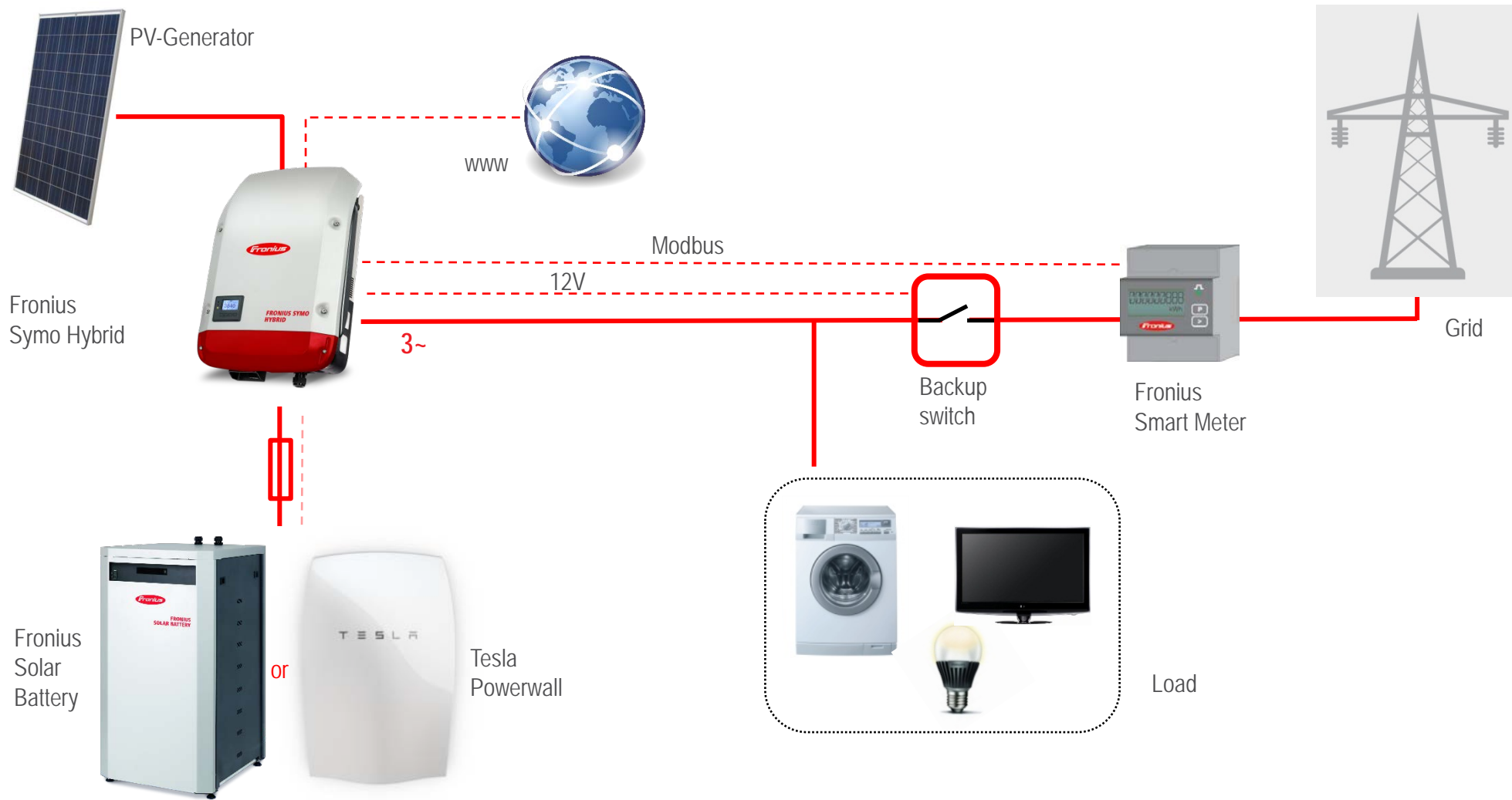
RESIDENTIAL INTEGRATION OF PV AND STORAGE IN AUSTRIA

Requirement: high self-consumption – energy cost-saving

- / Size of system 10 kWp
- / Inverters Fronius Symo Hybrid 5.0-3-S
- / Storage solution Fronius Solar Battery 7.5 kWh
- / Annual yield approx. 10 600 kWh
- / Special feature 90% self-consumption of hybrid system



HOW DOES IT WORK?



COMMERCIAL FARM PROJEKT IN HOLLAND

Requirement: Feed-in limitation at 50 kW AC

- / 120 kWp roof-top installation
- / 6x Symo 20.0 and Fronius Smart Meter 50 kA
- / high self-consumption by ventillation



COMMERCIAL ROOF TOP IN GERMANY

Logistic Warehouse in Germany - selling energy and self-consumption to charge forklifts

- / Size of system: 1,52 MWp
- / Inverters: 70x Fronius Eco and Symo 20
- / Special light weight construction



PV GENSET SOLUTION IN A FREE FIELD INSTALLATION IN LEBANON

Requirement: Fuel saving

- / Free field installation 144 kWp, 6 Fronius Symo 20 inverters
- / Diesel genset 280 kVA and PV system controller,
- / Independent power supply for watering system
- / 40% less diesel consumption



MICRO GRID SOLUTION IN KENYA

Requirement: Continuous power supply, independency

- / 80 kWp PV + 4 Fronius Symo 20 – AC coupling
- / 20 kWp PV + Victron inverter charger
- / Sunlight batteries



COMMUNICATION TECHNOLOGIES & INTERFACES

Energy Management

- / Activate loads based on available solar power (e.g. pool pump)
- / Connect to third party devices for home automation

Smart Meter

- / Monitoring of grid parameters
- / Bidirectional measurement
- / Capturing of load curves
- / Energy management



Interfaces

- / WiFi, Ethernet
- / Modbus RTU Sunspec, Modbus TCP Sunspec
- / Fronius Solar API (JSON)
- / Digital I/Os



Visualisation

- / All-in-one monitoring portal for desktop / laptop
- / Mobile Apps



FRONIUS CONTACTS FOR MIDDLE EAST



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