

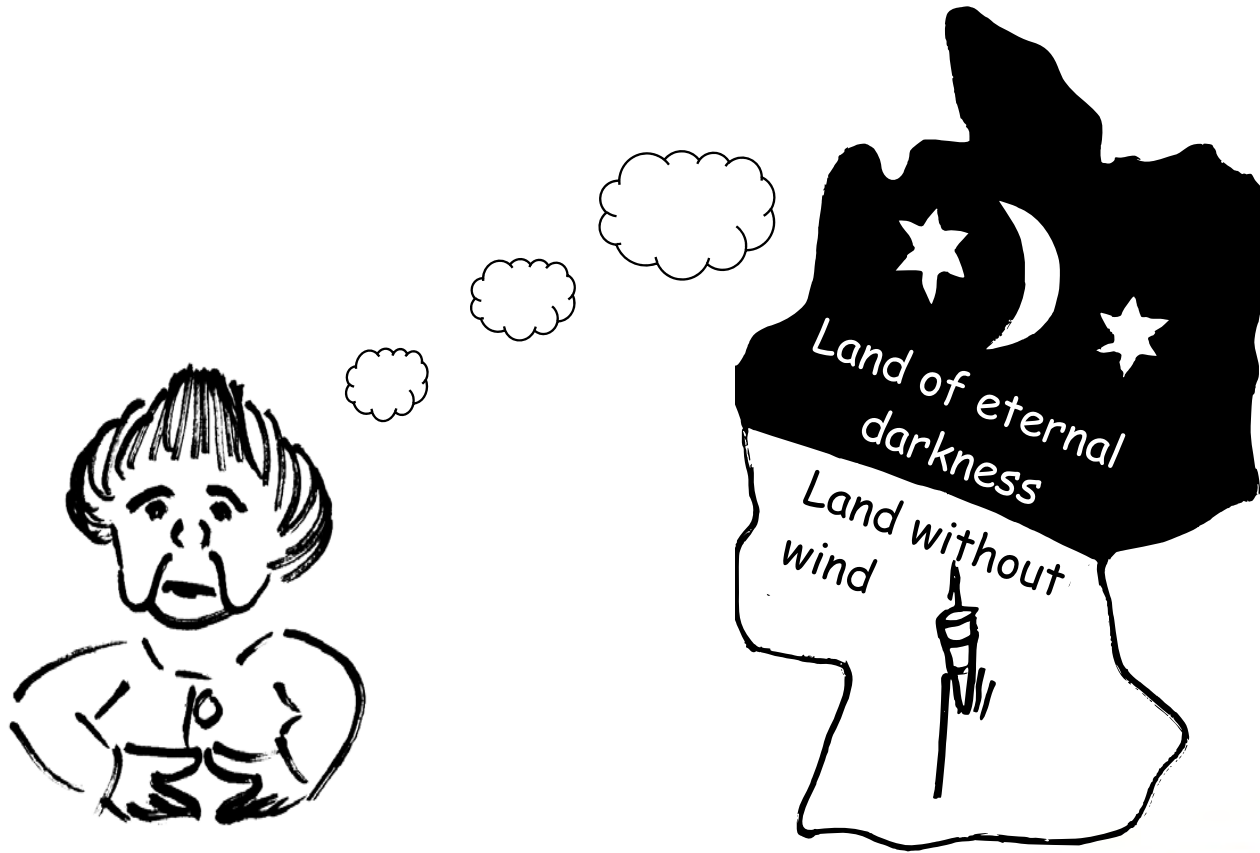


LET'S
TALK
ENERGY

Power **ON!**

Grid Forming Control. The
Next Level of Power
Management.

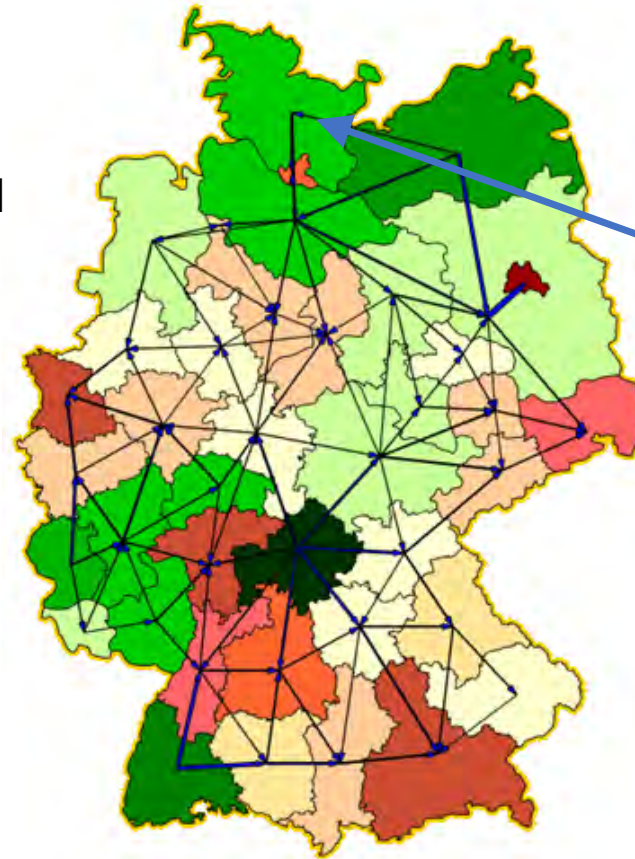
How politicians think of renewables



Renewable energy is decentral



Cellular Power
Grids are adapted



Demonstrator for grid cell:



Bordesholm



- 7500 Inhabitants
- Maximal electrical demand ca. 4 MW
- Installed photovoltaic power 1,4 MWpk
- Power biogas generator 2,4 MW
- Windenergie none



Battery Bordesholm



- Up to 15 MWh / 12.5 MW
- 7 independent battery strings
- **Normal operation:**
Primary control market
- **In case of emergency:**
Battery supplies island power grid



Primary control operation



- Normal grid operation
- Stock exchange
- For financing
- Prequalified primary control power : 10 MW
- Since summer 2019
- Power converter operating in current control mode



Primary control operation



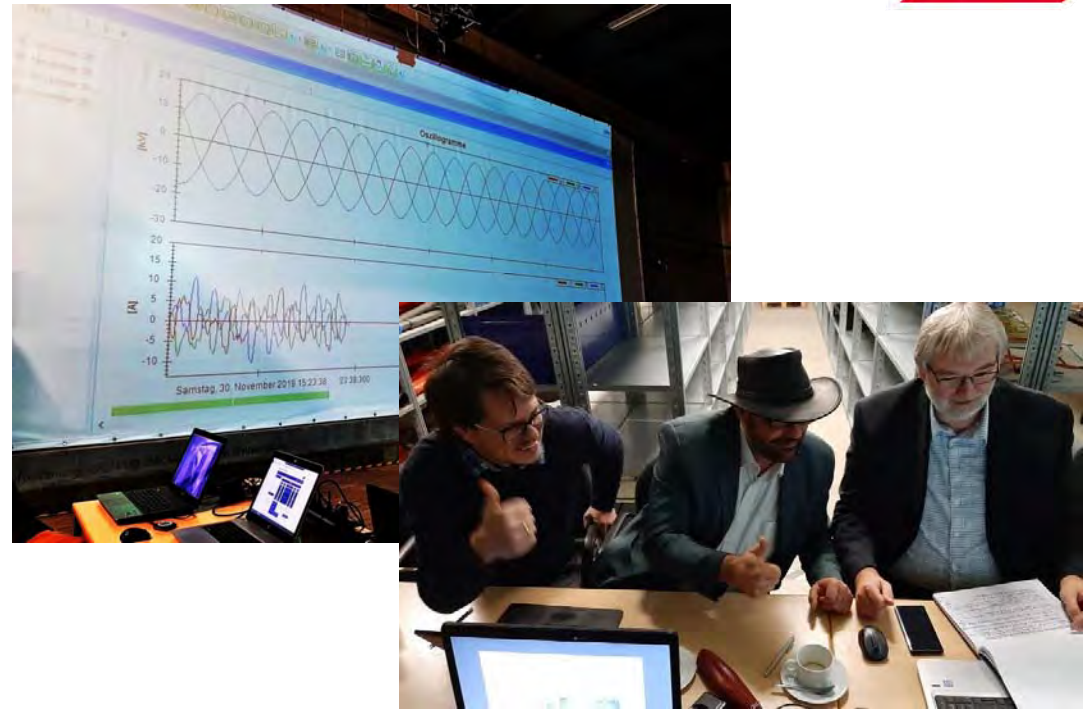
- Battery as grid former, also for decentral generators
- Power converter operating in voltage control mode
- Voltage and frequency droop
- Synchronous coupling switch



Islandic experiment



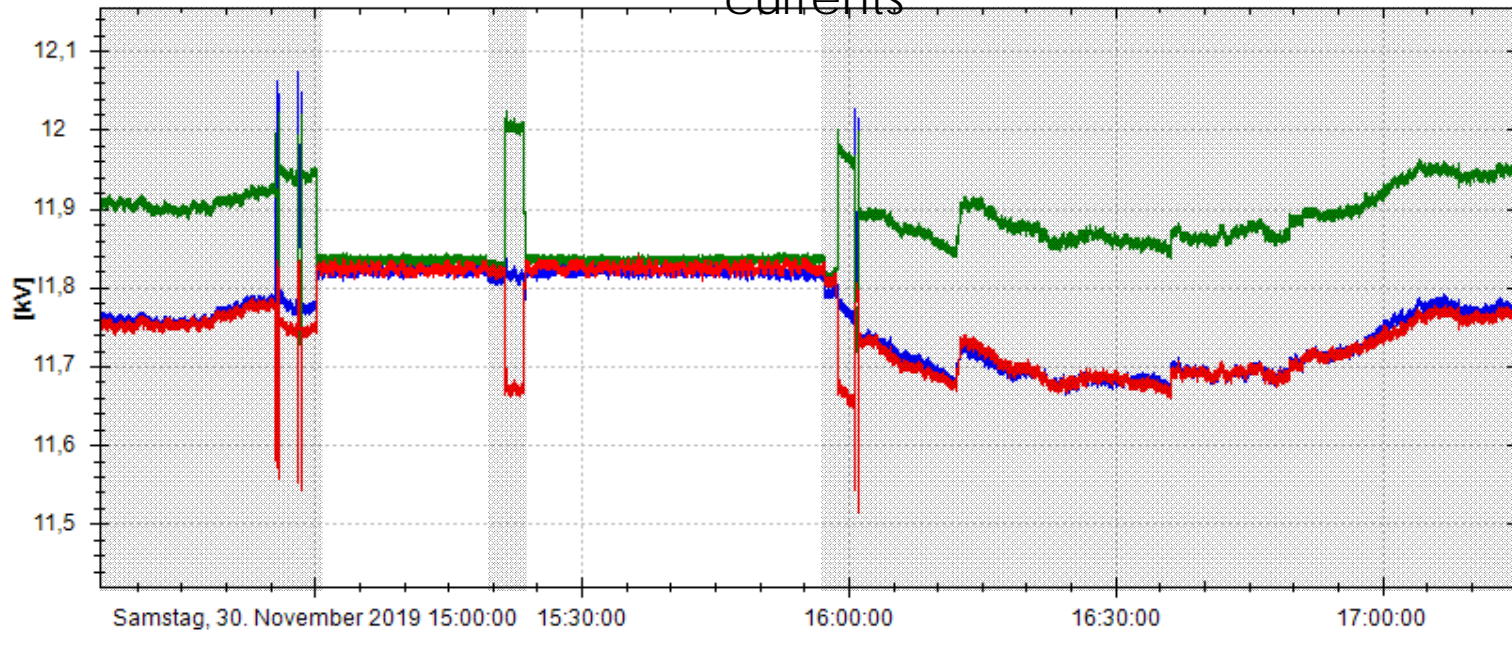
- Battery as grid former, also for decentral generators
- Power converter operating in voltage control mode
- Voltage and frequency droop
- Synchronous coupling switch



Islandic experiment



Phase voltages and load currents



A large, stylized starburst graphic is centered on the page. It is composed of multiple overlapping, semi-transparent triangular shapes in various colors including blue, yellow, orange, and red, radiating from a central point. The text "LET'S TALK ENERGY" is overlaid on this graphic.

LET'S
TALK
ENERGY

SMA Solar Technology