



Siemens

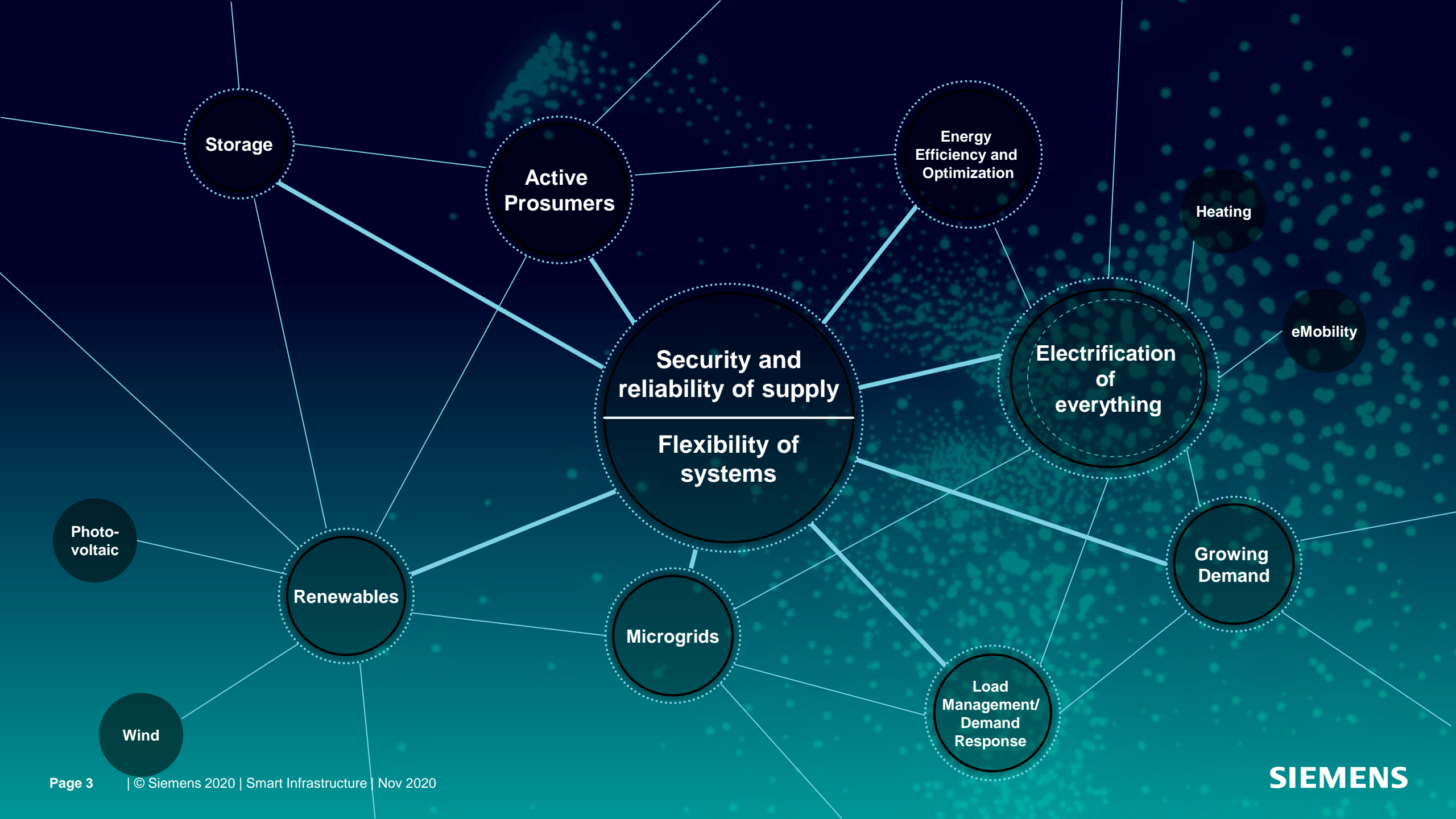
#TransformTheEveryday



Facts and figures

	Siemens Osakeyhtiö	Siemens AG
Revenue	€204M	€57bn
Employees	430	293,000
Founded	1898	1847
Operations in	<ul style="list-style-type: none">•Finland•Estonia•Latvia•Lithuania	<ul style="list-style-type: none">•200 countries

Local businesses: Digital Industries
Smart infrastructure



**VIBECO provides virtual power plant service
by combining energy system and building know-how**



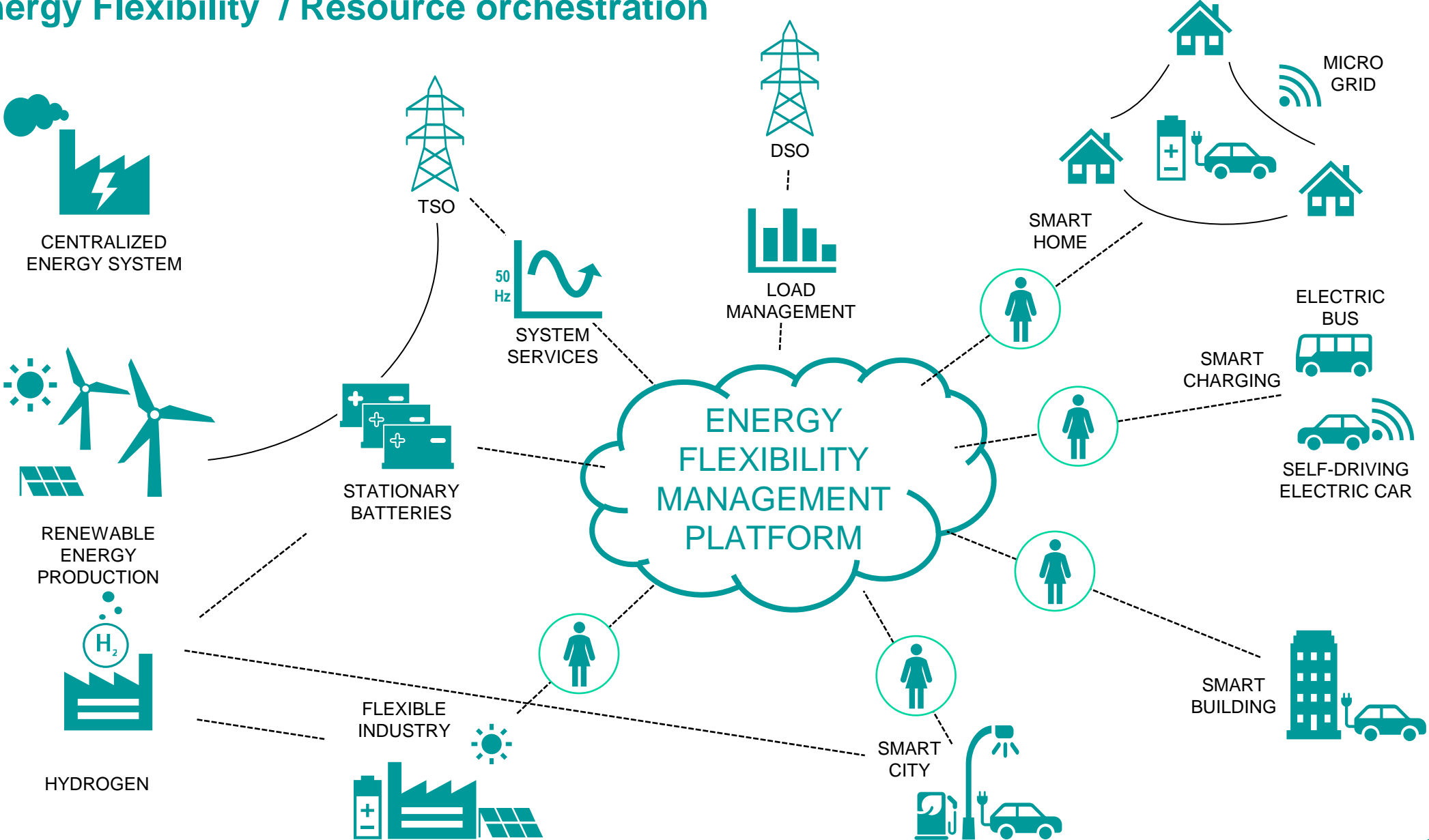
VIBECO is a platform company providing digital services for buildings. Its first virtual power plant service is a totally new approach to create sustainable society and to generate new measurable value to building owners.

Virtual power plant solution

- Enabler of sustainable society
- Smart energy platform connects buildings, industrial sites and other assets to the demand response market.
- Assets adjust automatically their energy consumption to the energy market's requests.
- Load owners can earn money by providing flexibility.



Energy Flexibility / Resource orchestration



Customer impact



Finland's biggest property-specific Energy storage

- In connection with Sinebrychoff's Kerava brewery
- Power: 20 MW
- Capacity: 20 MWh
- Modular:
2 x 2 x 2 meter
- Size: the area incl. the substation is equivalent to half a football field
- Brewery provides flexibility to the energy market.

A new earning model as a part of the smart energy system

Buildings' small loads combined and provided to the market

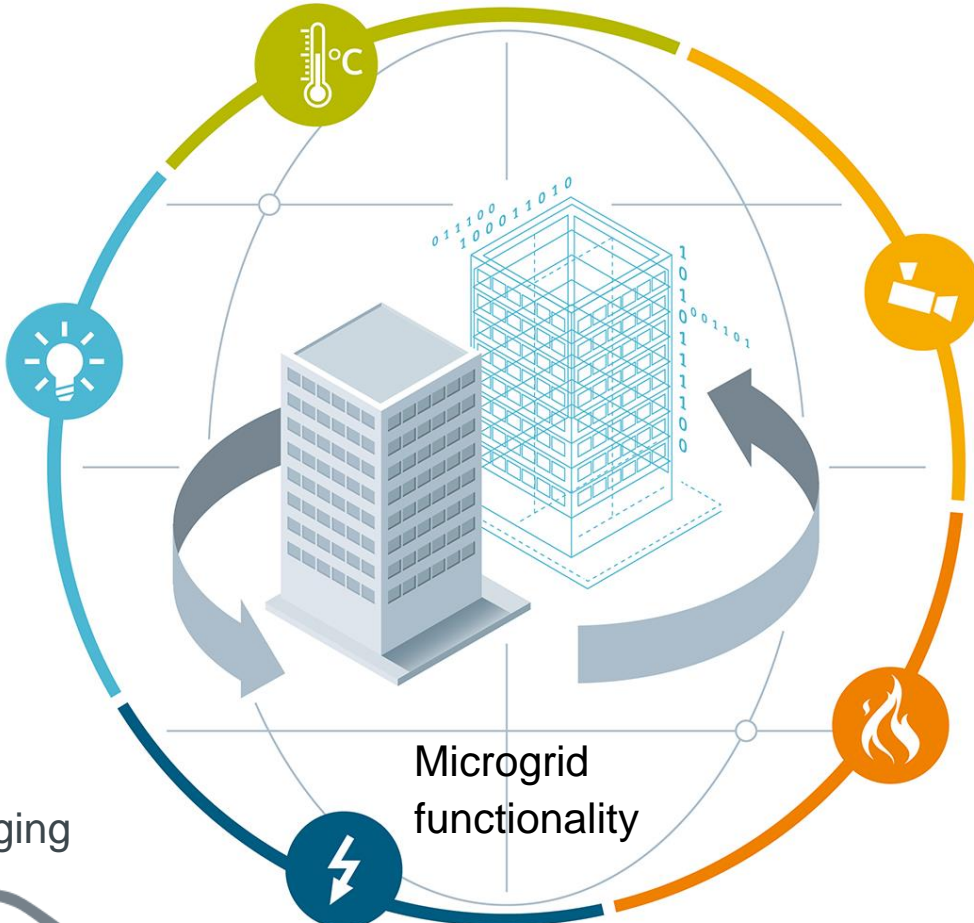
El Spot
Electricity market



Demand response
market



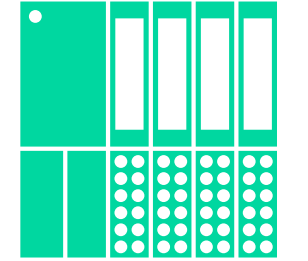
Cloud based
Smart
Energy
Platform



Solar Panels
750 kWp



Battery storage
2 MW / 2,1 MWh

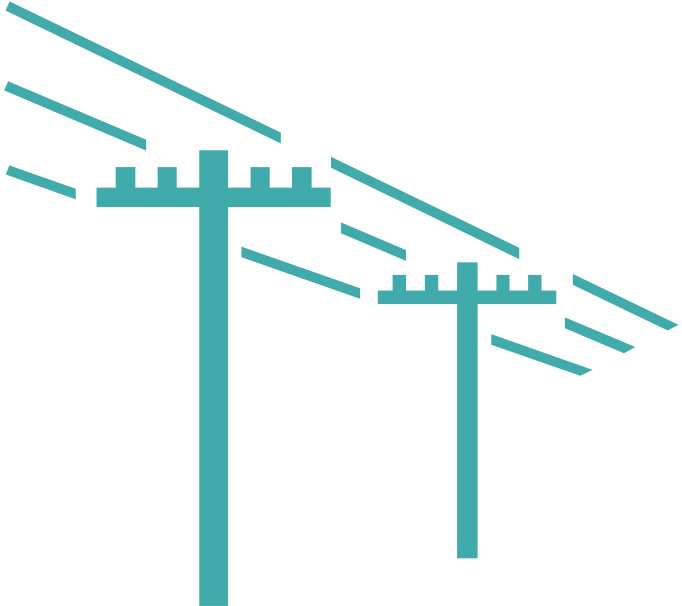


Building technology components in the microgrid

Load to be provided from Sello to the reserve market

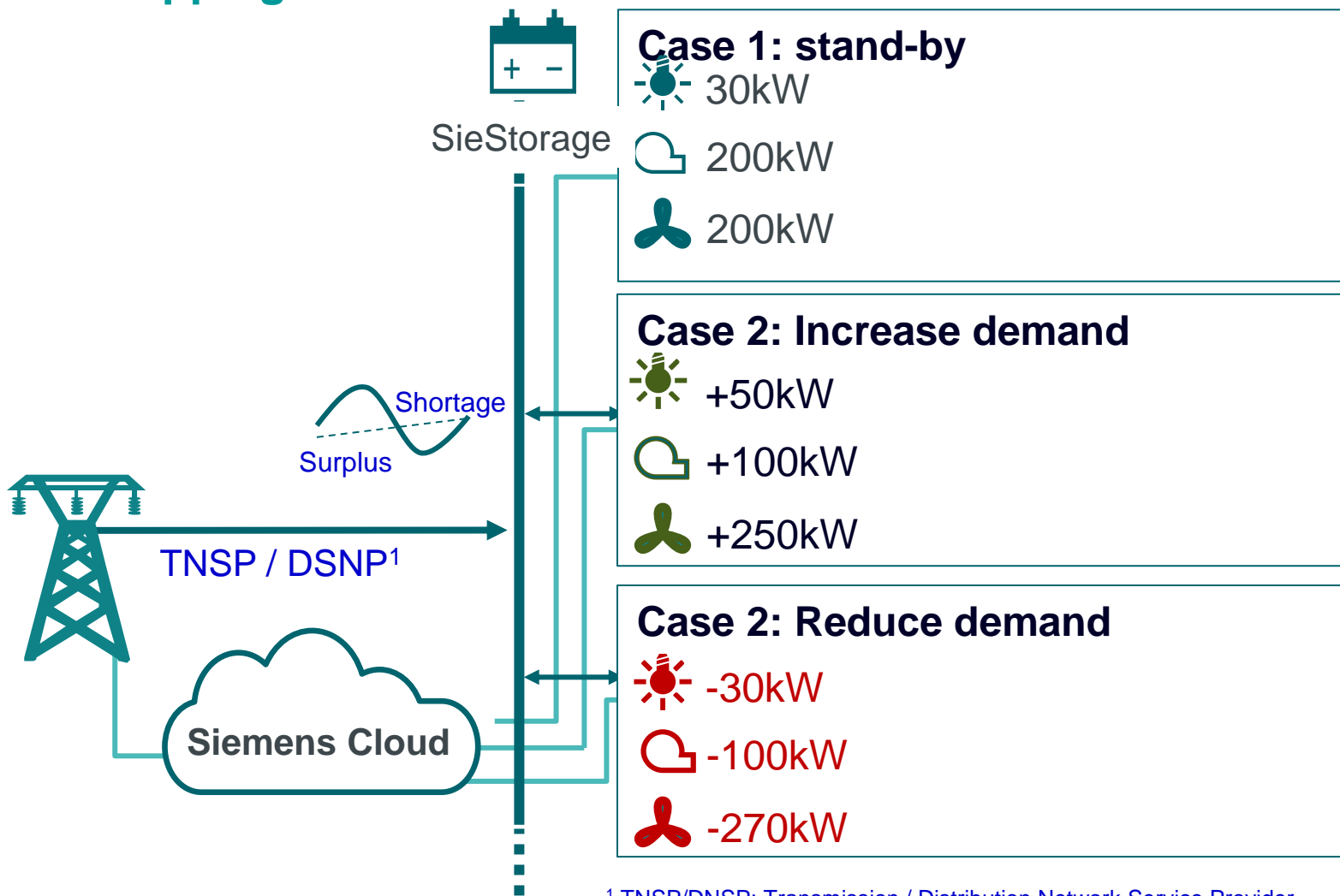


- Battery Storage (2 MW, 2,1 MWh)
 - LED lighting dali control (3000 pcs)
 - Fans (0-848 kW scale)
 - Ground heater electric (0-390 kW scale)
 - Ground heater pump (0-35 kW scale)
 - Generators (1330 kW)
 - Solar power (0-750 kW scale)
 - EV charging (0-300 kW scale)
-
- Next steps,** Cooling 3 MW
 Other assets 1 MW

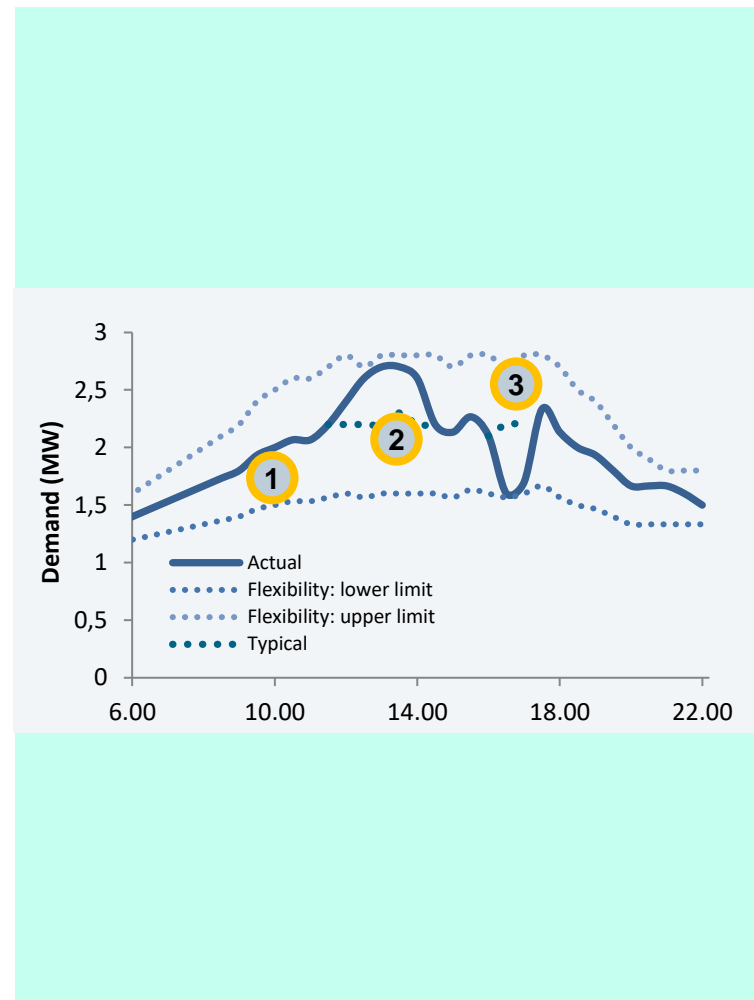


Briefly control of building loads

Sello shopping center



¹ TNSP/DSNP: Transmission / Distribution Network Service Provider





Sello Shopping Center



VR Group



SIEMENS
Ingenuity for life

City of Lappeenranta



Ski resort, Levi



Finnish University
buildings

**Technology for balancing grids
with present assets are here!**

**Can we balance the worlds grids
with building assets?**



| Contact

Siemens Osakeyhtiö

[siemens.fi](https://www.siemens.fi)

customercare.fi@siemens.com

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