

Empowering the All Electric Society 



Welcome

# Envisaging a Sustainable Electrified Future

- in practice -

Frank Possel-Dölken | Road to Net Zero | CEN-CENELEC-DKE | 5.12.2023



# Empowering the All Electric Society

1

The All Electric Society describes the future picture of the world in which **regeneratively generated electrical energy** is available worldwide as the primary main form of energy in **sufficient** quantities and **completely economically**.

2

The basis for this is the comprehensive **electrification, networking, and automation** of all sectors of the economy and infrastructure.

3

With its products, solutions, and digitalization expertise, **Phoenix Contact empowers industry and society to accelerate the implementation of this transformation** on the way to a sustainable world with long-term growth perspectives for all.

# The road towards an All-Electric Society

Top-down approach



Bottom-up approach

- Addressing the challenges step by step
- Solving the problems step by step
- Verify if each step leads to the desired result

Empowering the All Electric Society

# Phoenix Contact Headquarters in Blomberg



# From theory to practice: How to implement these ideas?



Empowering the All Electric Society

# Real world laboratories



**All Electric Society Park**



**Building 60**



Empowering the All Electric Society

# The All Electric Society production building of the future

**Wind Power**  
250 kW small system

**PV System**  
2,5 MWp - 2,5 GWh/a

**DC Grid**  
650 V DC Bus

**Production**  
DC Technology  
DC Machine Grid

**EV Charging**  
8\*60kW, 2\*150 kW  
DC bidirectional

**Heat Pumps**  
With buffer

**Trafo-Station**  
30 kV AC/AC

**Building**  
AC/DC Lighting  
DC Elevator(recuperating)

**Local Heating Network**  
Connection to site

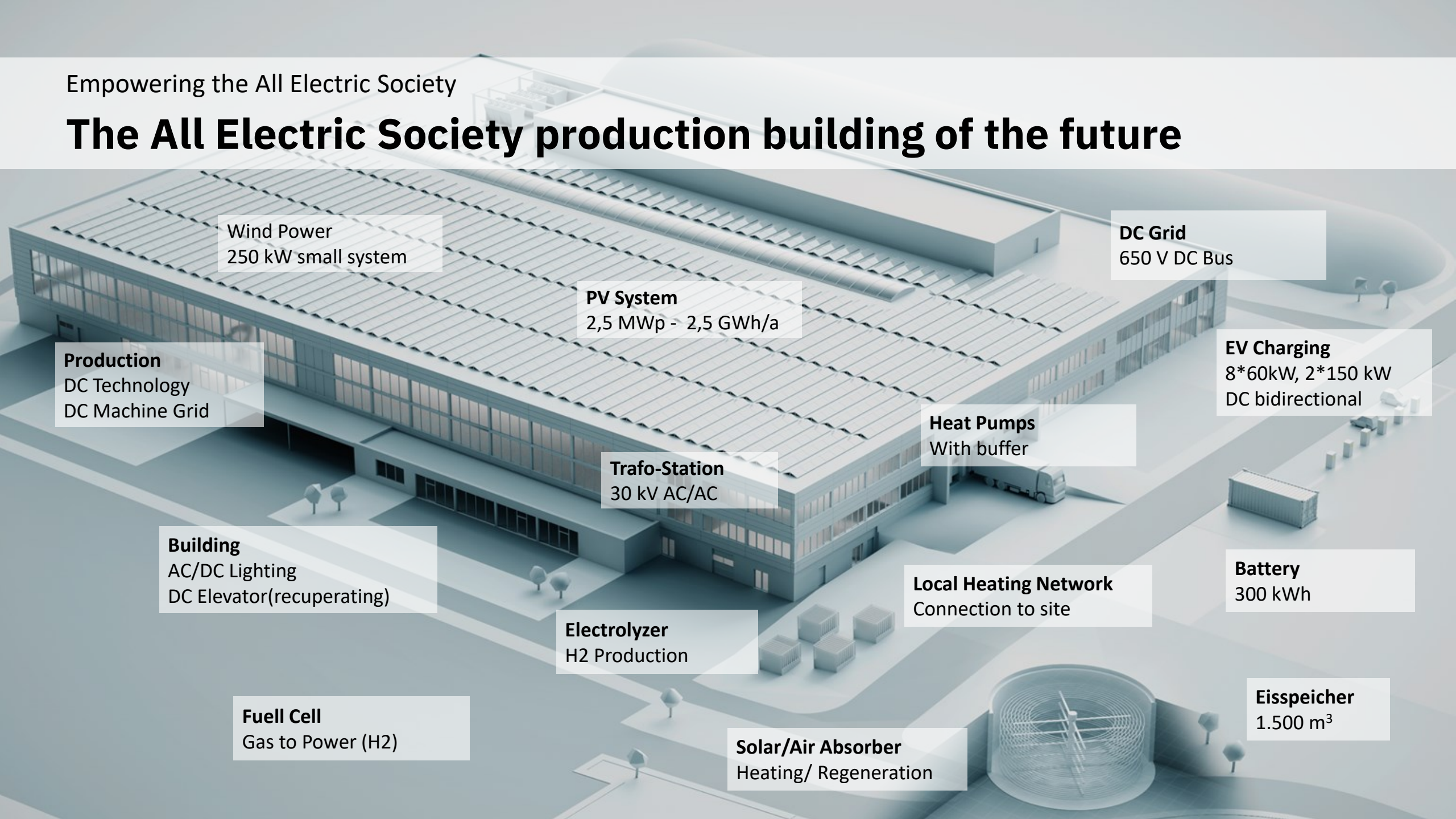
**Battery**  
300 kWh

**Electrolyzer**  
H2 Production

**Fuell Cell**  
Gas to Power (H2)

**Solar/Air Absorber**  
Heating/ Regeneration

**Eisspeicher**  
1.500 m<sup>3</sup>



Empowering the All Electric Society

# The All Electric Society production building of the future

## Positive Energy Balance:

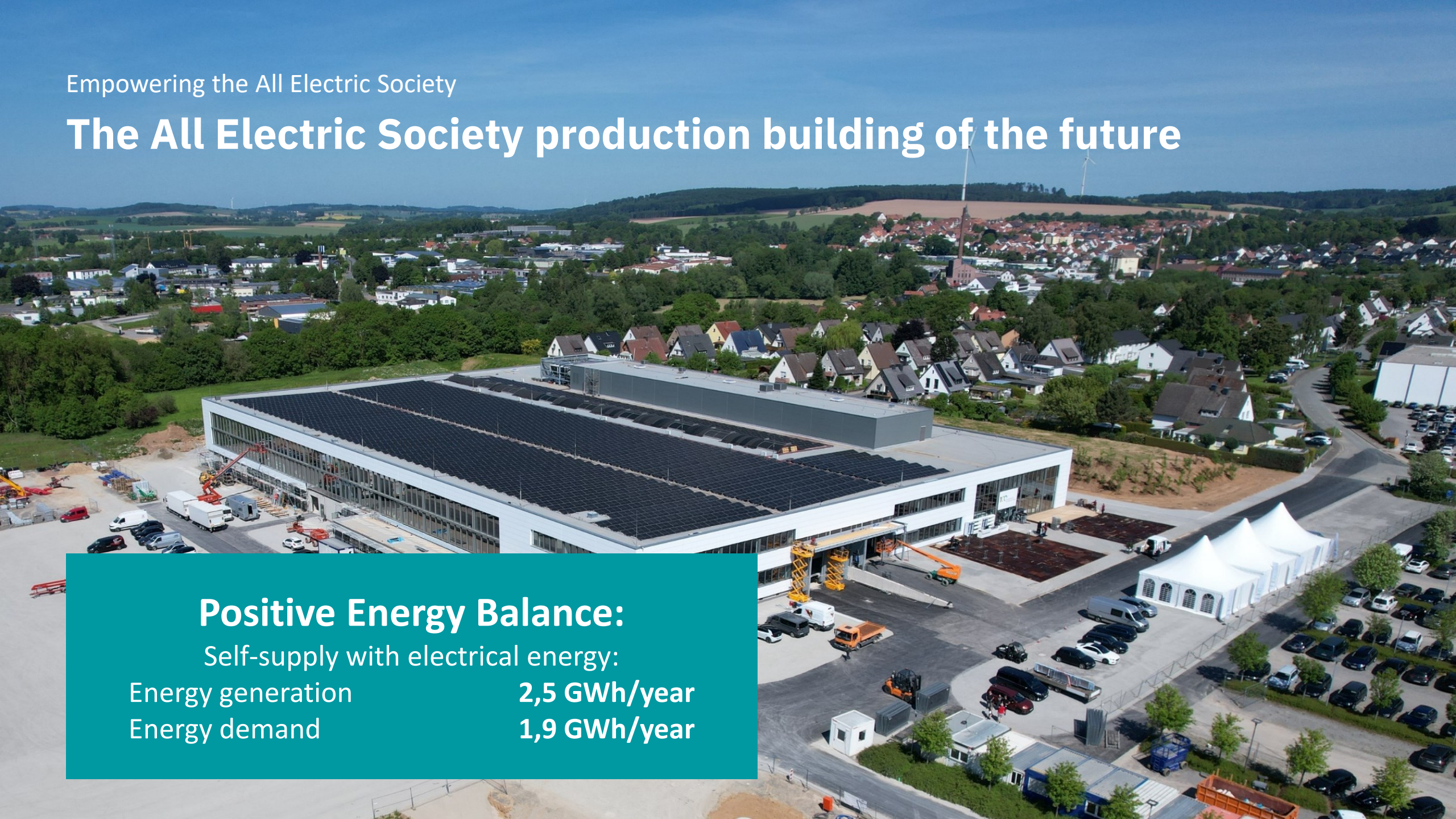
Self-supply with electrical energy:

Energy generation

2,5 GWh/year

Energy demand

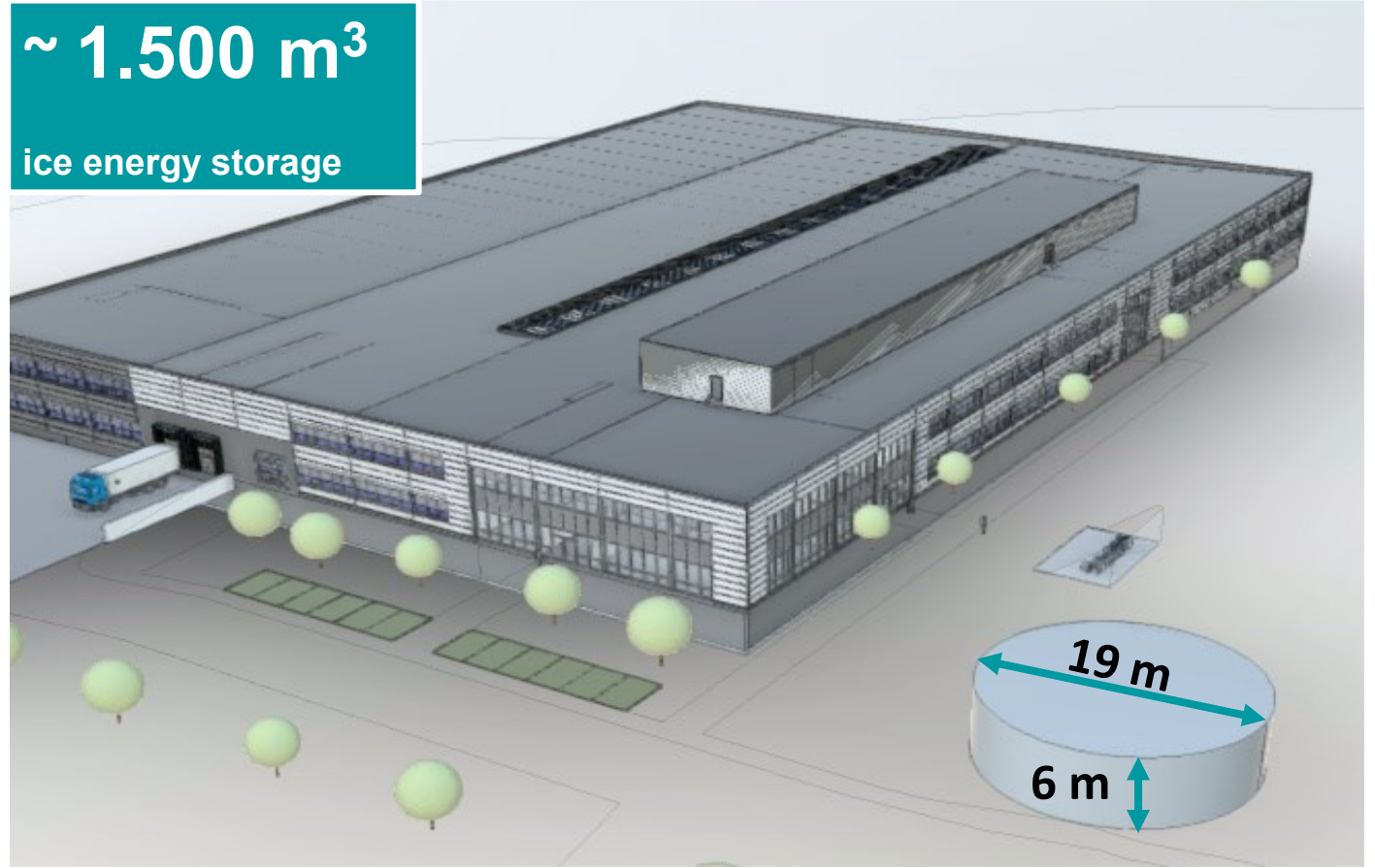
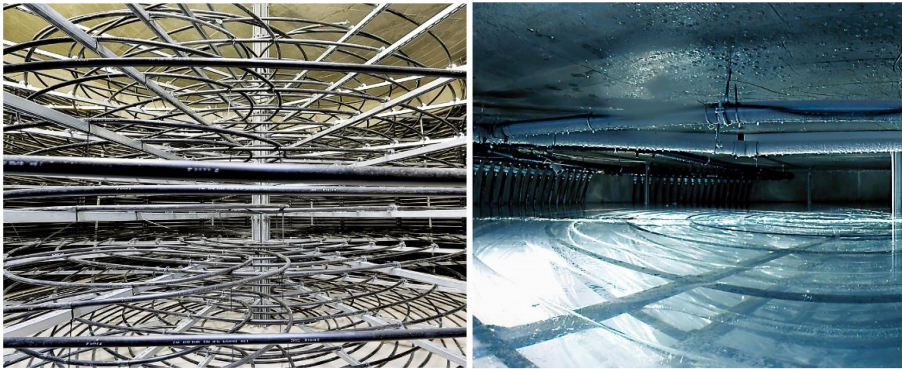
1,9 GWh/year



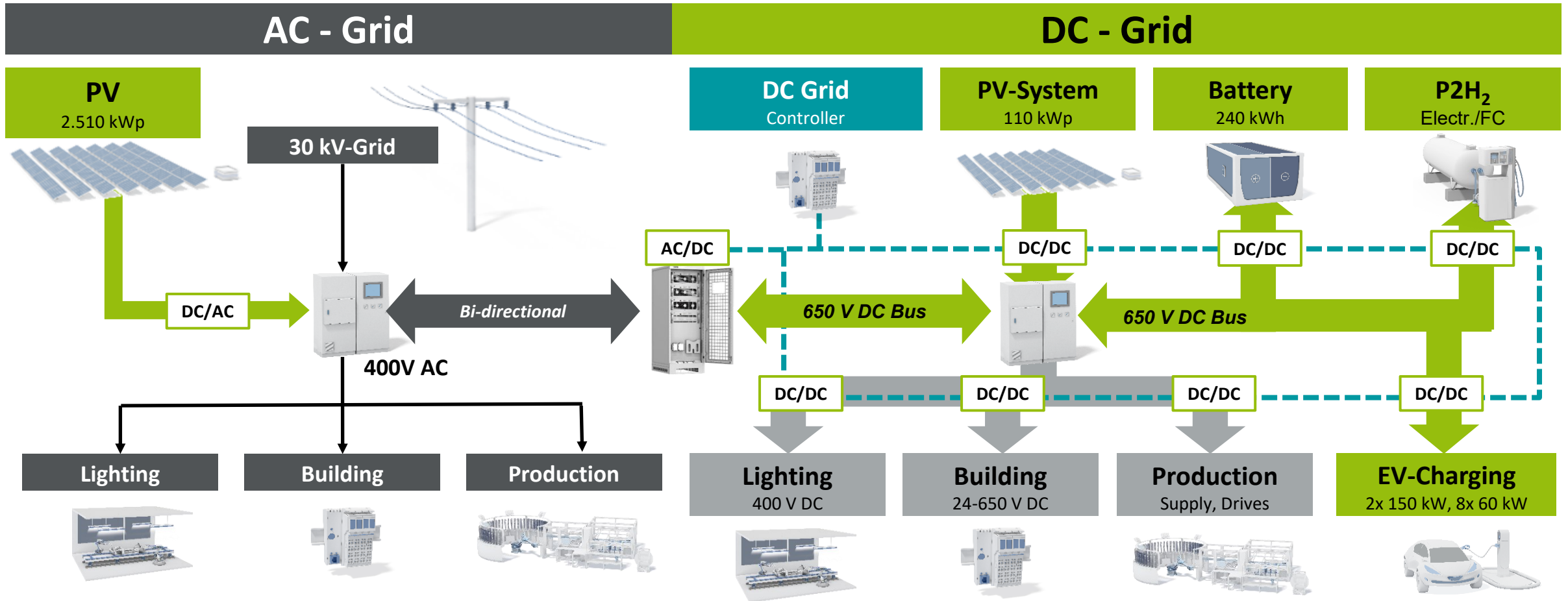


Empowering the All Electric Society

# Heating with ice in building G60: Capacity 150 MWh



# Example: Hybrid electrical infrastructure of G60



## The need for standards

Sector  
coupling  
requires standards

Enabling decentralized energy  
networks

Enabling seamless  
secure communication (real-  
time and non-real-time)

Enabling DC grids

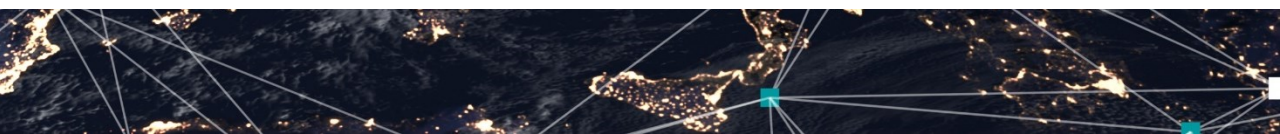
Enabling seamless  
secure data flows

...

Empowering the All Electric Society 



Frank Possel-Dölken | Road to Net Zero | CEN-CENELEC-DKE | 5.12.2023



Welcome

# Envisaging a Sustainable Electrified Future

- in practice -

