

OFF-GRID
TEST CENTER

Decentral Hybrid Energy Systems (DHES) DC System

Decentral Hybrid Energy System

DC blueprint



OFF-GRID
TEST CENTER

- Power systems globally have worked fine for over 100 years so why change now?
- Primarily centralised fossil fuel based generation which:
 - Produces Co2
 - Volatile pricing (importation/security of supply, fuel theft)
 - Non renewable
 - Inefficient

Decentral Hybrid Energy System

DC blueprint



OFF-GRID
TEST CENTER

- **Safety & Reliability:**
 - System must be able to continue to deliver: security of supply
 - Has to be stable, clean and safe power
 - Has to be able to handle variable loads (inertia)
- **Costs / Economics:**
 - Must make economic sense
 - Total cost of ownership must be lower than standard offering

Decentral Hybrid Energy System

DC blueprint

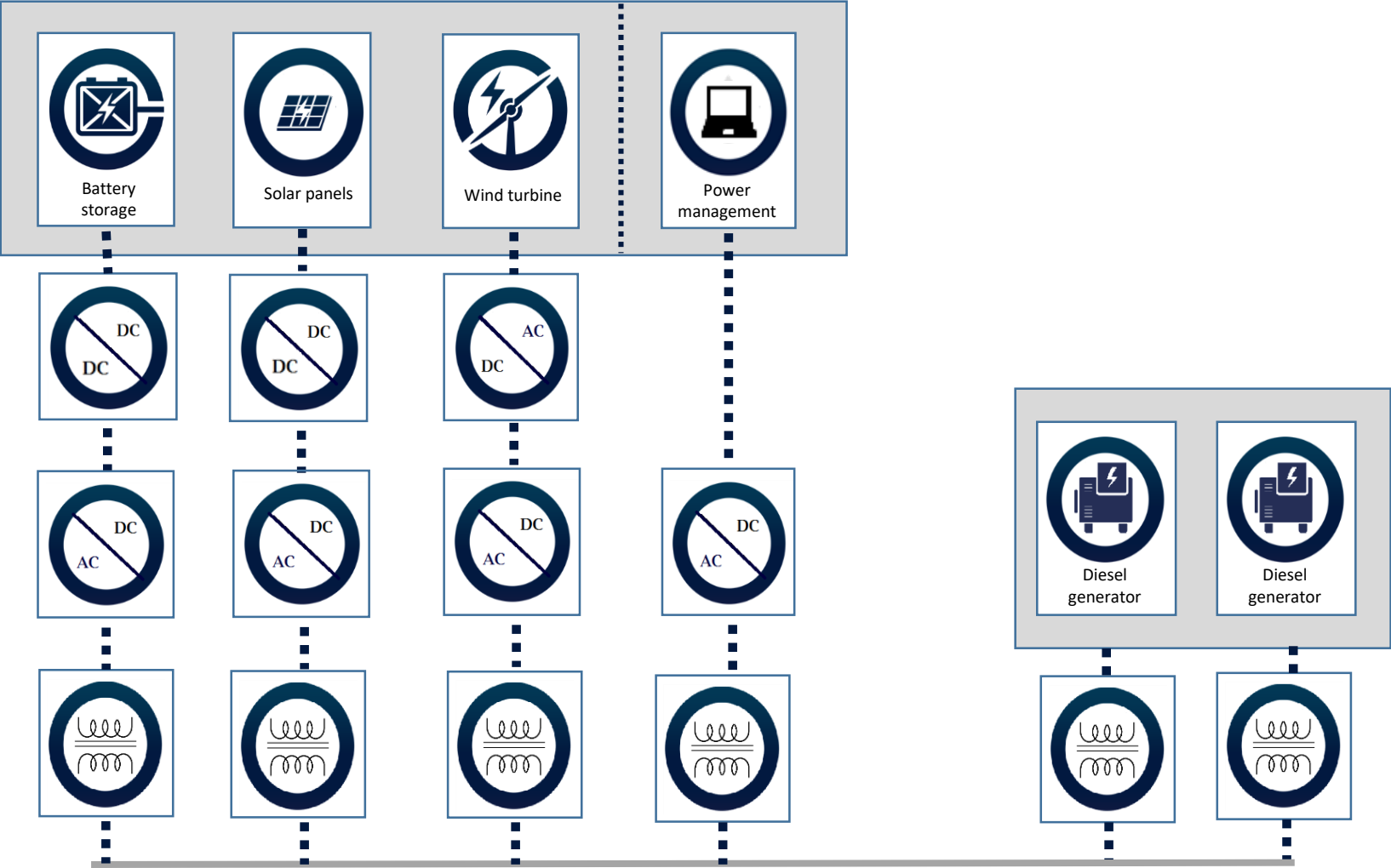


OFF-GRID
TEST CENTER

- Review of existing technology
- Integrate the most appropriate energy sources with storage
- Incorporate smart control technology to minimise total cost of ownership and maximise reliability
- Seamlessly manage multiple power sources and storage in a modular expandable offering

Decentral Hybrid Energy System

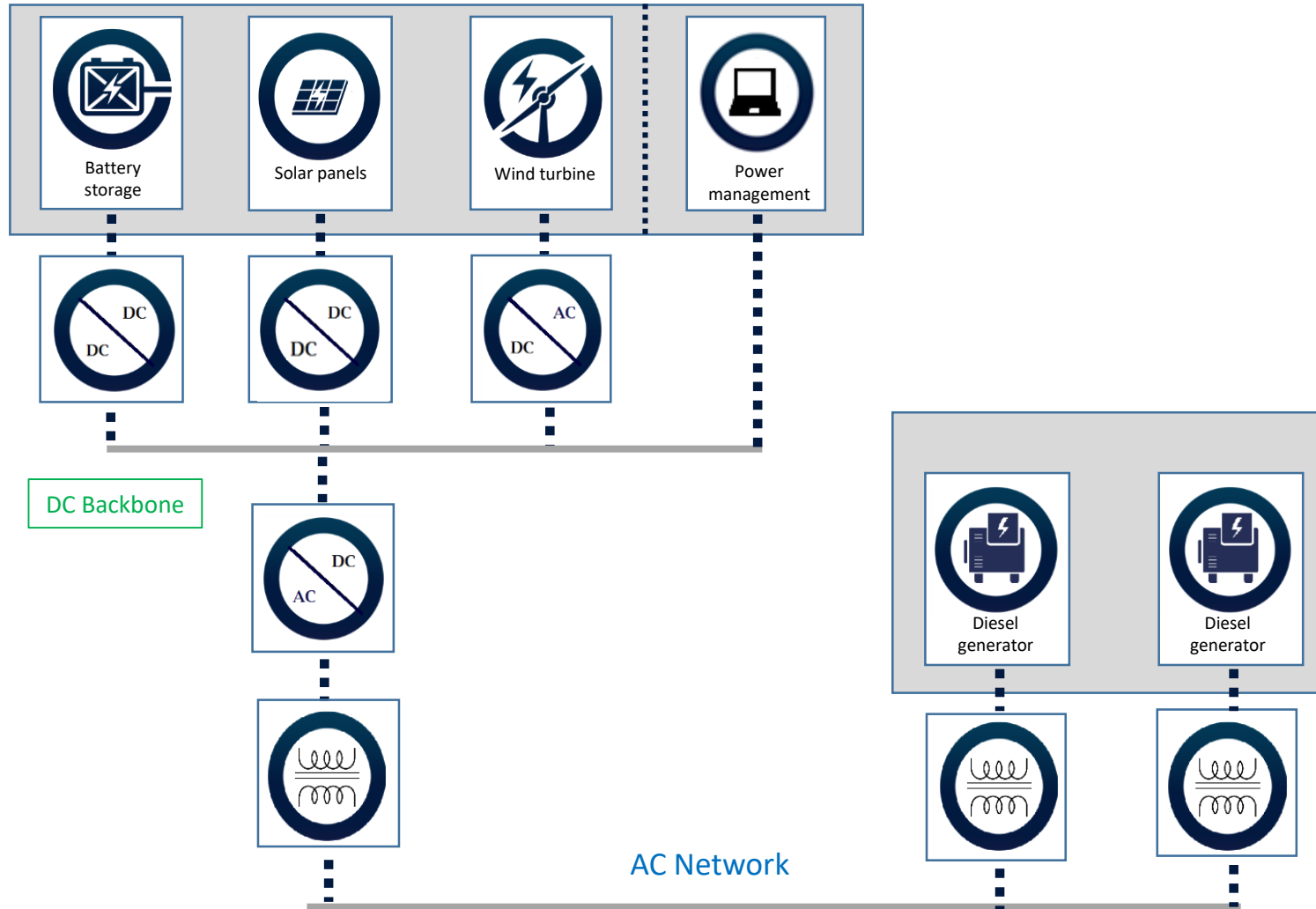
DC blueprint



Grid Forming Diesel Genset AC Network

Decentral Hybrid Energy System

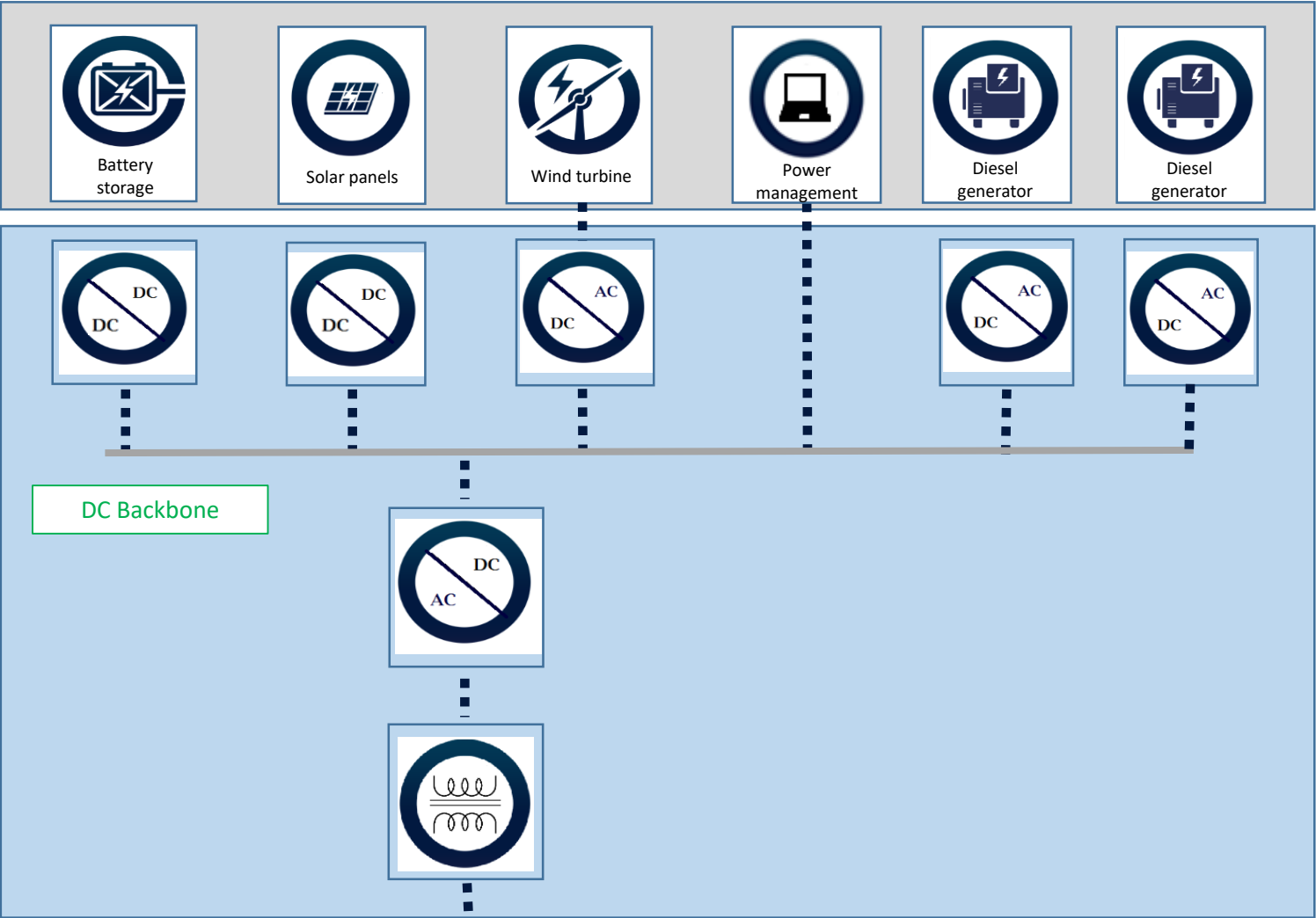
DC blueprint



Better system configuration - (but still grid forming Diesel Genset)

Decentral Hybrid Energy System

DC blueprint



Best system configuration: Grid forming Converter

Decentral Hybrid Energy System

DC blueprint



OFF-GRID
TEST CENTER

- Saves more than 50% of components
- Better System Availability
- Better Efficiency
- Better voltage and frequency stability
- High renewable energy penetration up to 100%
- Lowest fuel consumption

Decentral Hybrid Energy System

DC blueprint



OFF-GRID
TEST CENTER

- We design, build, maintain and operate hybrid energy systems
- Through the selection and integration of components we:
 - Optimise performance
 - Minimise TCO
 - Provide advanced remote-access control and monitoring interface
 - Complete seamless system integration

Decentral Hybrid Energy System

DC blueprint



OFF-GRID
TEST CENTER

Off Grid Test Center

Bergerweg 200

1817 MN Alkmaar

The Netherlands

W : www.offgridtestcenter.nl

E : info@offgridtestcenter.nl