

Danfoss transports you to **FOSSIL FREE FUTURE**

With an Intelligent Power Electronics Ecosystem

Danfoss

ENGINEERING
TOMORROW

May 2023

Danfoss



Worldwide sales
in more than

100
countries

Three strong business
segments with leading
positions

Power Solutions
Climate Solutions
**Power Electronics
and Drives**

Leading technology
partner for our
customers who want to
decarbonize through
energy efficiency,
machine
productivity, low
emissions, and
electrification

+42,000

Employees worldwide.
People are the
foundation of our
business



Well on the way
towards carbon-neutral
global operations by
2030

97 

Factories in more than
20 countries

1933

Long track record within
innovation and engineering

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Electrification of the all forms of transportation is critical for carbon neutrality. This includes moving machines, heavy traffic, and marine transportation, since a major part of CO₂ is produced by them.

Carbon neutral fuels are also crucial. Their development includes power to X (PtX) solutions in which production of green hydrogen has a critical role.

Danfoss Fossil Free Future and ***Intelligent Power Electronics ecosystem*** concentrate on the technologies enabling fossil free transportation and smart management of energy.

We are looking for innovative partners to join our ecosystem for all areas of transportation and smart energy, and invite you to join our ambitious journey towards Fossil Free Future

MISSION:

To **lead, guide and support** an ecosystem in which power electronics form the basis for developing fossil free solutions for electric transportation at all levels

VISION:

Tomorrow's transportation is **intelligent, sustainable and effective** because of new fossil free solutions

Intelligent power electronics are a vital part of Fossil Free Future transportation

Intelligent Power Electronics Ecosystem will drive smart, sustainable, and cost-effective use of energy and strengthen the Ecosystem's competitive advantage in the global market

POWER ELECTRONICS ARE A CRITICAL ENABLER FOR ELECTRIFICATION AND PtX SOLUTIONS

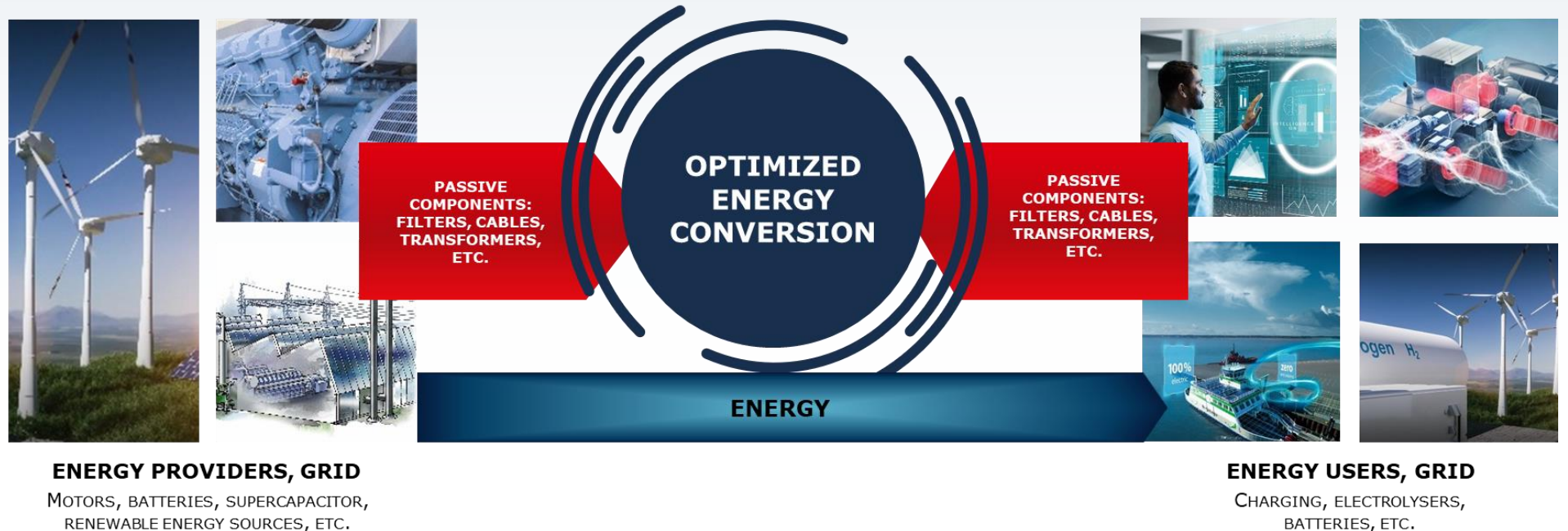
WITH POWER ELECTRONICS WE CAN MAKE THE ENERGY CONVERSION INTELLIGENT AND OPTIMISED, AND THEREFORE SIGNIFICANTLY INCREASE ENERGY EFFICIENCY, REDUCE ENERGY CONSUMPTION, AND OPTIMISE OUR USE OF ENERGY

WITH SMART POWER ELECTRONICS WE CAN OPEN SIGNIFICANT NEW POSSIBILITIES TO CRITICALLY IMPROVE ELECTRICAL PROCESSES

ENERGY PROVIDERS AND USERS ARE TYPICALLY UNABLE TO PROVIDE SMART INTELLIGENCE

SMART POWER ELECTRONICS
PROVIDE THE INTELLIGENCE AND OPTIMIZATION REQUIRED BY NOVEL ELECTRIFICATION SYSTEMS

ENERGY USERS GET TO EMPLOY INTELLIGENTLY OPTIMIZED ENERGY SYSTEMS



Forefront of Fossil Free Future - New and intelligent solutions

Danfoss



**HIGHLY EFFICIENT SMART POWER ELECTRONICS,
DIGITALISATION, AND SUSTAINABILITY**



**OFF-HIGHWAY VEHICLE ELECTRIFICATION, SMART ENERGY
STORAGE SOLUTIONS, AND CHARGING INFRASTRUCTURE**



**EFFICIENT AND COST-COMPETITIVE GREEN HYDROGEN
PRODUCTION**



HIGHLY EFFICIENT SMART POWER ELECTRONICS

Novel power electronics,
materials and components

Outdoor solutions

High power solutions

Optimised connection to grid

Thermal management

Smart solutions for
reliability, maintenance and
safety

DIGITALISATION AND SUSTAINABILITY

Digital services

Modelling tools, simulations
and digital twins

Data collection and analysis,
cloud services

Novel analysis methods for
environmental impacts

Carbon neutrality and
circularity of products and
manufacturing



OFF-HIGHWAY VEHICLE ELECTRIFICATION

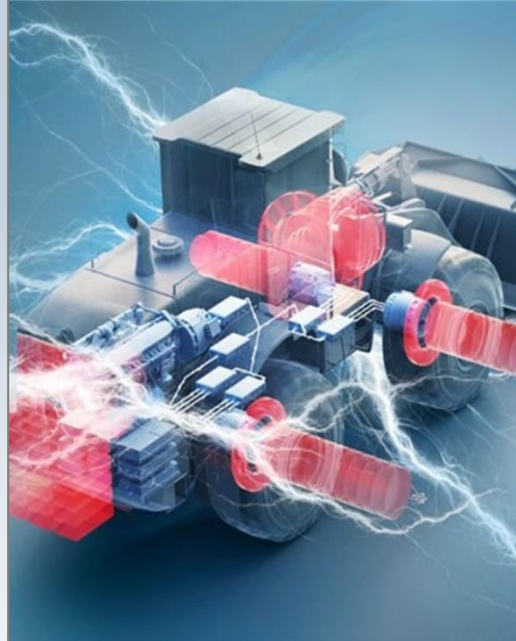
25% fuel savings through
electrification

Novel solutions for
powertrain and hydraulics

Increased power density
with efficient cooling
solutions

Intelligent integration for
'plug and play'

Reduction of rare earth
materials



SMART ENERGY STORAGE AND CHARGING INFRASTRUCTURE

Charging solutions for heavy
duty vehicles and marine
applications

To reduce the cost of charging
<25€/kW

Fast and high power charging

Grid services and improved
power electronics

Energy storage solutions

Novel battery technologies
and materials



EFFICIENT AND COST-COMPETITIVE GREEN HYDROGEN PRODUCTION

Solutions enabling green
hydrogen production with less
than 2€/kg

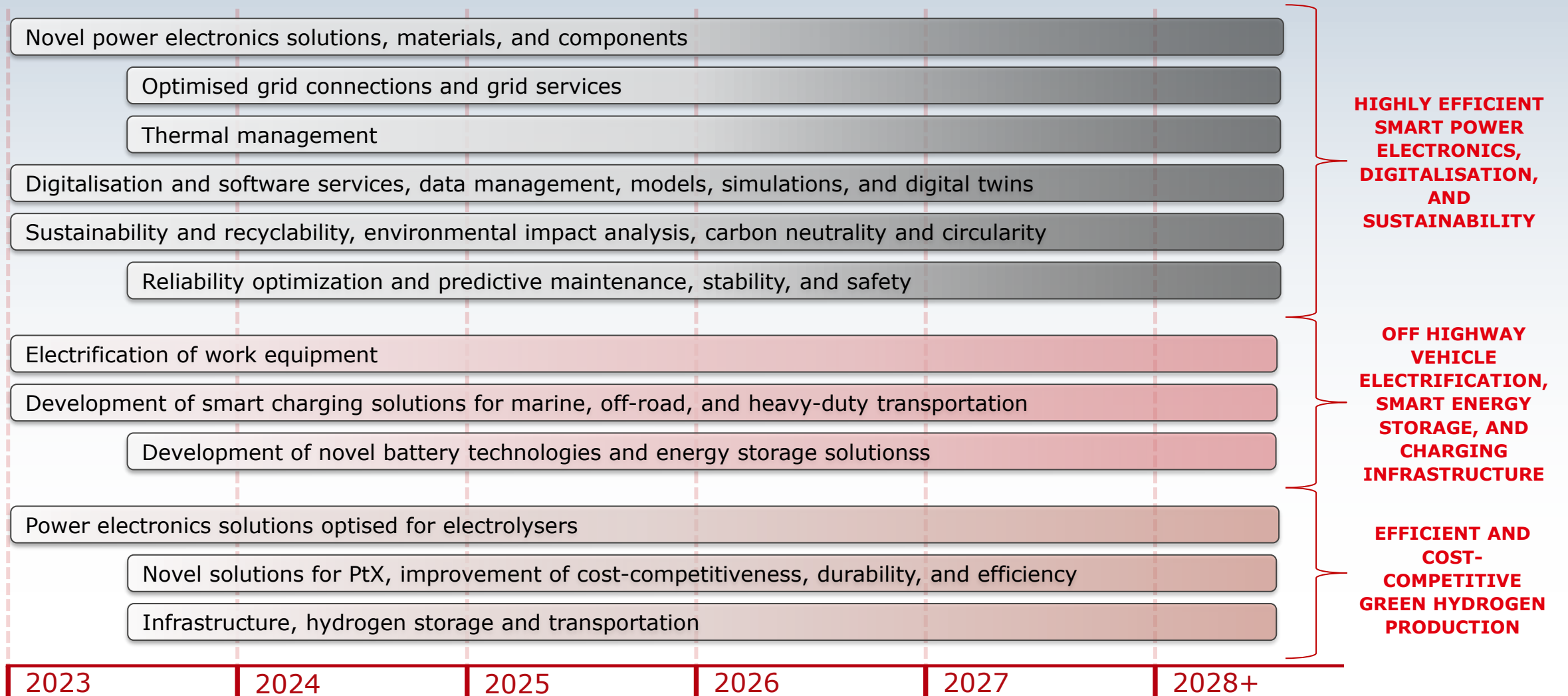
Technical solutions improving
cost-competitiveness,
durability, and efficiency of
electrolyser facilities

Optimised grid connection and
grid services

Novel solutions for hydrogen
storage and transportation



Fossil Free Future Roadmap





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Electronics Ecosystem*