

Introduction to the **Danfoss** Group



A photograph of a man and a young child in a field. The man, wearing glasses and a plaid shirt, is leaning over the child, who is holding a colorful pinwheel. The background is a bright, open field under a clear sky.

We engineer tomorrow
to build a **better future**

**Decarbonizing
with our customers**

**Long-term
value creation**

2022 – Transformational growth

Group financial highlights

Net sales, EURbn

10.3



Growth

+36%



EBITA margin

11.9%



NIBD to EBITDA ratio

2.0



EBITA EURm

1,224



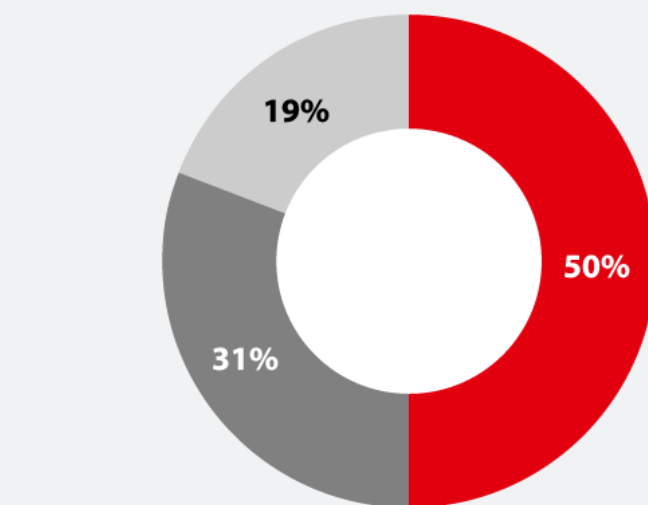
Net profit EURm

683



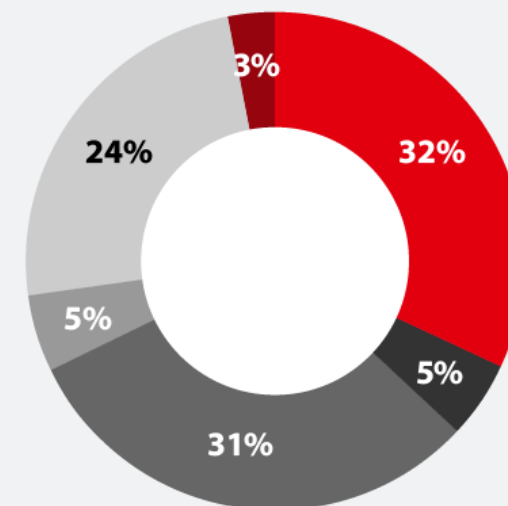
Annual Report 2022

Segments



- Danfoss Power Solutions
- Danfoss Climate Solutions
- Danfoss Power Electronics and Drives

Regions



- North America
- Latin America
- Western Europe
- Eastern Europe
- Africa - Middle East

Three **business segments** geared for growth



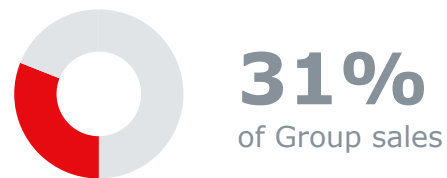
Danfoss Power Solutions

- 5.1bn EUR annual sales
- 18,535 employees
- 52 factories
- 3 Application Development Centers



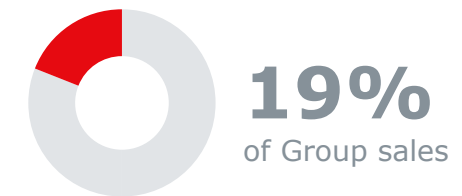
Danfoss Climate Solutions

- 3.2 bn EUR annual sales
- 10,331 employees
- 31 factories
- 4 Application Development Centers



Danfoss Power Electronics and Drives

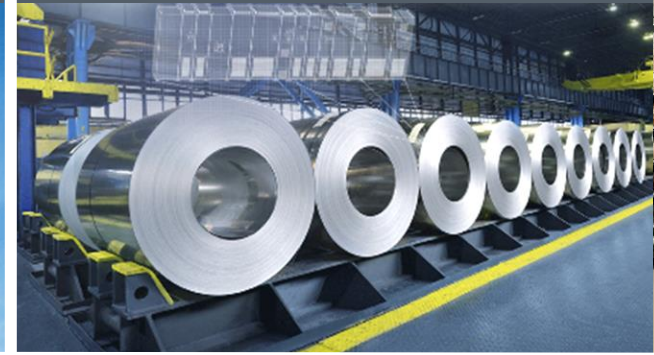
- 1.9bn EUR annual sales
- 7,875 employees
- 17 factories
- 4 Application Development Centers



Commercial buildings



Industries



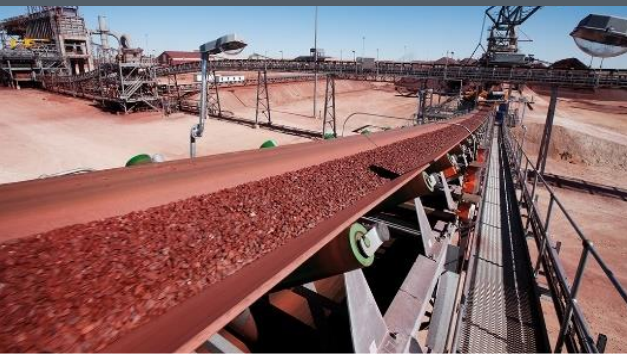
Food and beverage



Mobile and industrial hydraulics



Energy & natural resources



Markets we serve

Residential



Marine and offshore



District energy



Vehicles and transportation



Water and wastewater



Refrigeration / air conditioning





ESG

Environment / Social / Governance

The **greenest energy** is
the energy we don't use



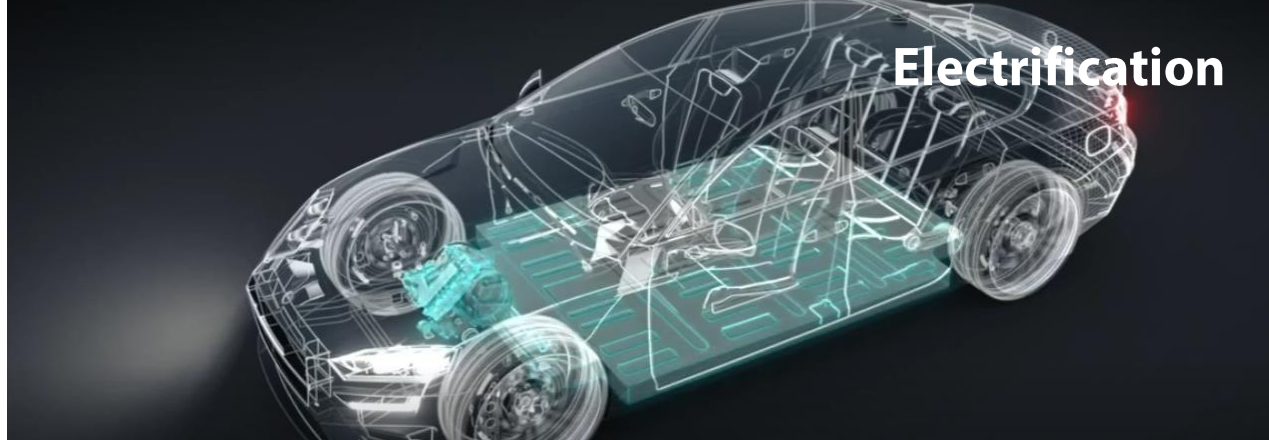
We pioneer solutions
for customers to **enable**
decarbonization



We innovate
best-in-class
circular products



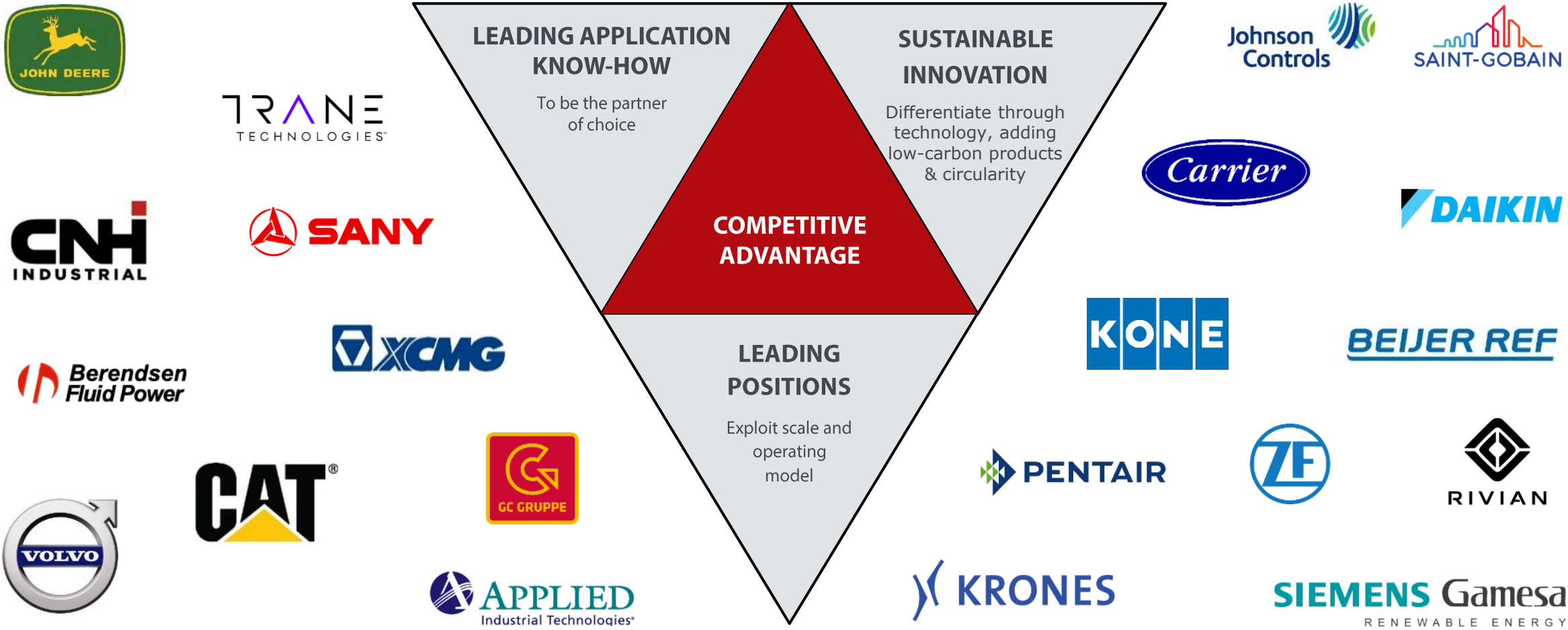
We offer a leading employee
experience that values and respects
diversity and inclusion



GLOBAL MEGATRENDS
Transforming our world



Our customer promise is as relevant as ever and drives our competitive advantage



Danfoss Power Solutions

We are a global, industry-leading provider of **mobile and industrial hydraulic, as well as electrification**, solutions. Our products are backed by **engineering excellence** and true **application expertise** – as we work to meet the needs of distribution partners and customers around the world.



Danfoss Power Solutions at a glance

2022 Highlights

Sales, EURbn

5.1

Employees worldwide

18,535

Factories in 19 countries

52



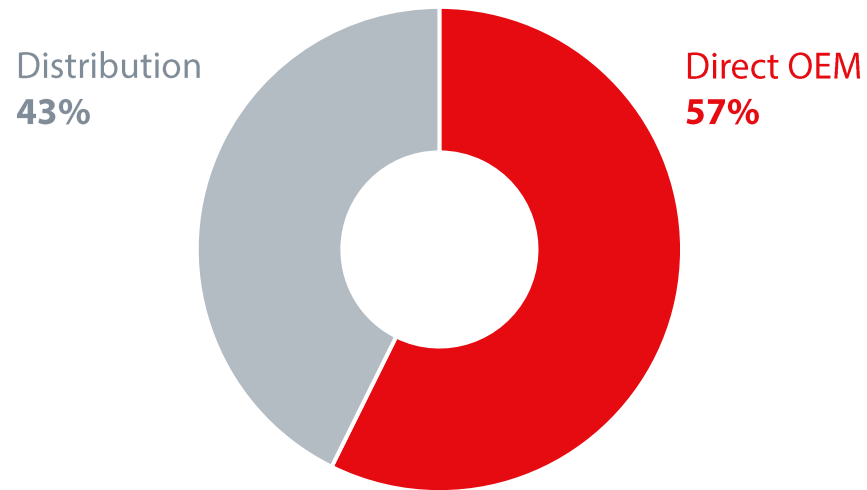
Danfoss Power Solutions



Danfoss Power Solutions

Customers and markets 2022

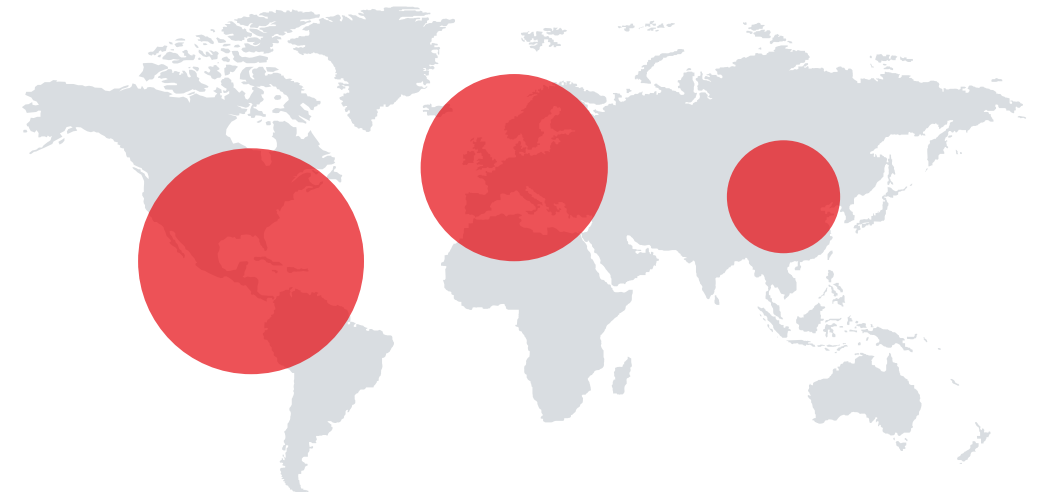
Customers



Top markets

(EUR)

Americas	2,2bn
Europe	1,4bn
China	0,6bn



Our manufacturing footprint





DANFOSS POWER SOLUTIONS



Eric
Alström

Power Solutions Leadership Team

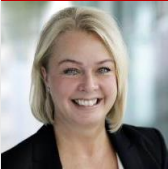
DIVISIONS

HYDROSTATICS



Tony
Welter

WORK FUNCTION



Ann
Budin

INDUSTRIAL



Alessandro
Carmona

INCUBATION



Domenico
Traverso

CONTROLS



Henrik
Jørgensen

FLUID CONVEYANCE



Andrew
Smulski

EDITRON



Domenico
Traverso

FUNCTIONAL AREAS

R&D



Jeff
Herrin

OEM SALES



Mike
Hill

FINANCE & FUNCTIONS



Daniel
Winter

DISTRIBUTION SALES



Andrew
Smulski

HUMAN RESOURCES



Christina
Fuchs



ENGINEERING
TOMORROW



Danfoss EDITRON

"If we fail, at least I can tell my children that I tried my best"

Kimmo Rauma, VP Danfoss Editron

EDITRON

Danfoss Editron facts



Sales (2022)

55.7 m Euro

Employees (2022)

374

Factories

4
Denmark, China,
Finland, US

Worldwide sales

More than 80
countries

Top three markets

USA, Europe
and China

Growth & Global

Systems & Portfolio

Profitability
Scaling
Industrialized

Danfoss

People & Organizational Agility

Member of Danfoss

No 1 in mobile electrification

Solid growth ahead

EDITRON
Ending pollution with electrification

DANFOSS EDITRON

Kimmo Rauma
VP Editron Division

FINANCE
Finja Bock

HR
Gabriela Lima Ferreira

MARKETING
Nina Harjula

BU OFF-HIGHWAY
Antti Väyrynen

BU ON-HIGHWAY
Eric Azeroual

Boris Stepanov

QEHS

Andrew Worley

**R&D, SERVICE,
PROGRAM MANAGEMENT**

Sevki Durmus

PROCUREMENT & SUPPLY CHAIN



OFF-HIGHWAY

- CONSTRUCTION SITE EQUIPMENT (wheel loaders and excavators)
- HARBOUR and AIRPORT EQUIPMENT
- MINING
- MARINE, OIL AND GAS



ON-HIGHWAY

- BUSES (coach, school, transit)
- TRUCKS (LD, MD, HD)
- PASSENGER VANS (LD, MD, HD)



Product Portfolio

Offering: EDITRON SYSTEMS

Full electric and hybrid systems

SYSTEM BENEFITS:

- Lower fuel/energy consumption
- Reduced CO2 and small particle emissions
- Space and weight savings
- Allows integration into various different systems

ELECTRIC CONVERTERS



SOFTWARE

PLUS E1

ELECTRIC MACHINES



SUB SYSTEMS



**THE
EDITRON
SYSTEM**

ELECTRIC
CONVERTERS

EC

ELECTRIC
MACHINES

EM

SOFTWARE

ED

SUB SYSTEMS

Product overview

POWER ELECTRONIC PRODUCTS

- Inverters (50 kW – 1,5 MW)
- DC/DC -converters
 - High power unisolated
 - 24 VDC isolated
- Active front-end solutions
- Frequency converter assemblies



EC-C1200



EC-LTS1200



EC-C1200F



EC-LCL1200*



EC-IDC24*

SUB SYSTEMS



ED-DT318B



Restricted Sales

Evaluation sample, to be launched soon

Product overview

ELECTRIC MACHINES

Electric machines from 30 kW up to 6 MW



EM-PME375-T150



EM-PME375-T200



EM-PMI240-T180



EM-PMI318B



EM-PMI300-T310



EM-PMI375-T200



EM-PMI375-T500



EM-PMI375-T800



EM-PMI375-T1100



EM-PMI540-T1500



EM-PMI540-T2000



EM-PMI540-T3000



EM-PMI540-T4000



EM-PMI580*



EM-PMI880*



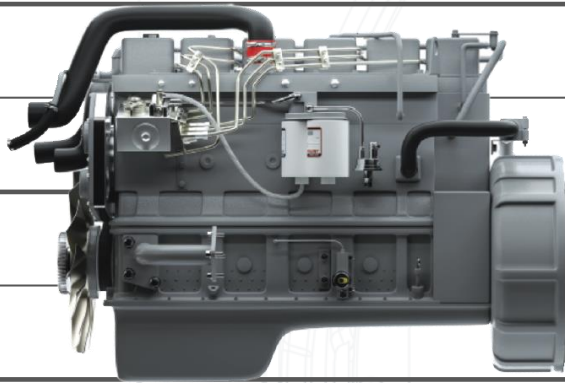
EM-PMI1240*

 **Restricted Sales**

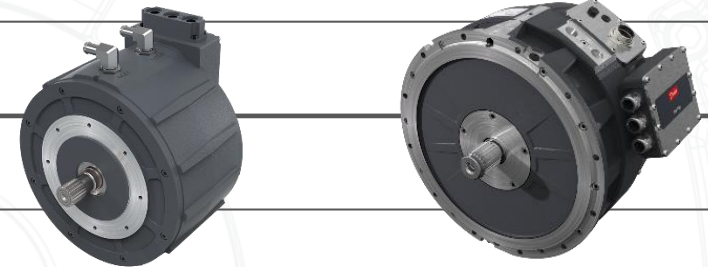
Electric machines

COMPACT SIZE WITH MAXIMUM EFFICIENCY

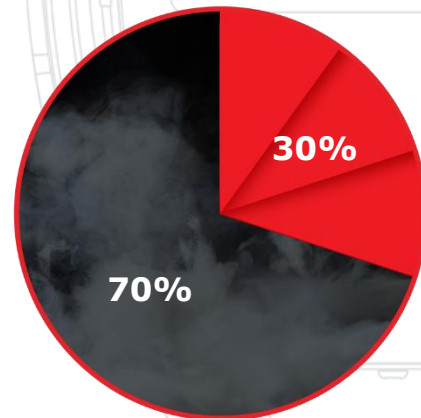
NORMAL DIESEL MOTOR



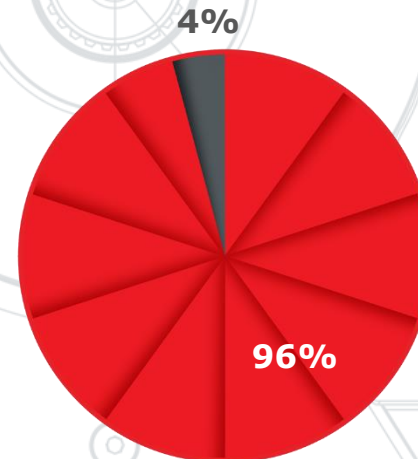
EDITRON ELECTRIC MOTORS



30%
Efficiency

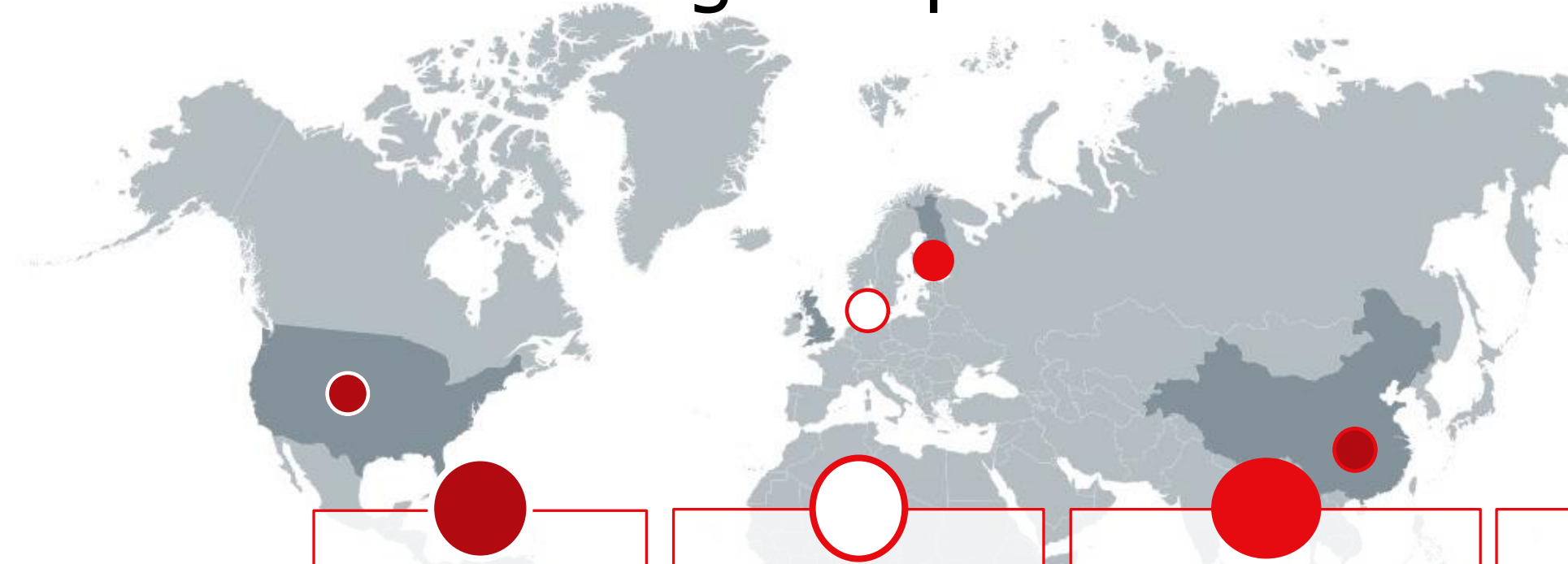


■ Energy
■ Energy lost



96%
Efficiency

Our manufacturing footprint



Longmont, CO, US

- Engineering and manufacturing
- High capacity to support OEM requirements
- Certifications:
 - IATF 16949: 2021
 - ISO 14001:2021

Nordborg, DK

- Assembly and test of Power Electronic/ePTO for the global market
- High Volume production
- IATF certified

Lappeenranta, FI

- Low volume production
- Innovation/R&D hub
- IATF Compliant
- FAT Marine
- Service center
- EMC and Environmental test laboratory
- Certifications:
 - ISO 14001:2015
 - ISO 9001: 2015
 - ISO 45001:2018

Nanjing, CN

- Manufacturing center for global service
- Service center for China/Asia market
- Application center to support China/Asia project.
- Certification:
 - ISO 9001 (11/2021)

Danfoss Editron

References

TAIWAN'S FIRST ALL-ELECTRIC BUS ROUTE

100%
Reduction
in carbon
pollution

75%
Efficiency
improvement
(kWh/100km)

Case study

Full electric city buses

Manufacturer: RAC Electric Vehicle Inc.

Type: Battery electric

Delivery: 2018

SCOPE OF DELIVERY

- Electric traction system
- EM-PMI motor
- EC-C inverter

MAIN BENEFITS

- High efficiency solution with compact size
- Zero emission
- Superior climbing performance on steep hills
- Pass 6,000 km harsh environment road test (equals to 60,000 km distance in standard road)



ZERO EMISSION CONSTRUCTION SITES IN NORWAY



Cities expand
10,000 m²
every minute

20%
of all CO₂
emissions in Oslo
come from diesel
use in construction
machinery

Case study

Electric excavator

Manufacturer: Pon Equipment AS
Type: Battery electric
Delivery: 2018

SCOPE OF DELIVERY

- EMP-PMI motor
- EC-C inverter
- EC-IDC battery charger
- EC-MG multiconverter

MAIN BENEFITS

- Zero emissions
- Significantly quieter
- Safer and more reliable operations



MHO-Co CTVs

Partnership with Volvo Penta

Builder: Afai China
Type: Diesel-electric with batteries
Delivery: 2021

SCOPE OF DELIVERY

- DC grid system
- Power Management System
- Electric PM- motors and PM-generators
- Compact inverters
- DC/DC converters

MAIN BENEFITS

- Reduction of fuel consumption and emissions
- Less noise
- Less maintenance costs
- Increased system redundancy
- Power of plenty



“We are all founders of the electrification story”.

“The team created a system that can achieve the productivity which is much more valuable for the end customer than any savings on the fuels.

*Engineering **for** tomorrow is just what we are doing.”*



Danfoss

ENGINEERING
TOMORROW



www.danfoss.com/editron



**ENGINEERING
TOMORROW**