



The DEIF Group

Software Center Reporting Workshop – 2020-06-11



Presenters



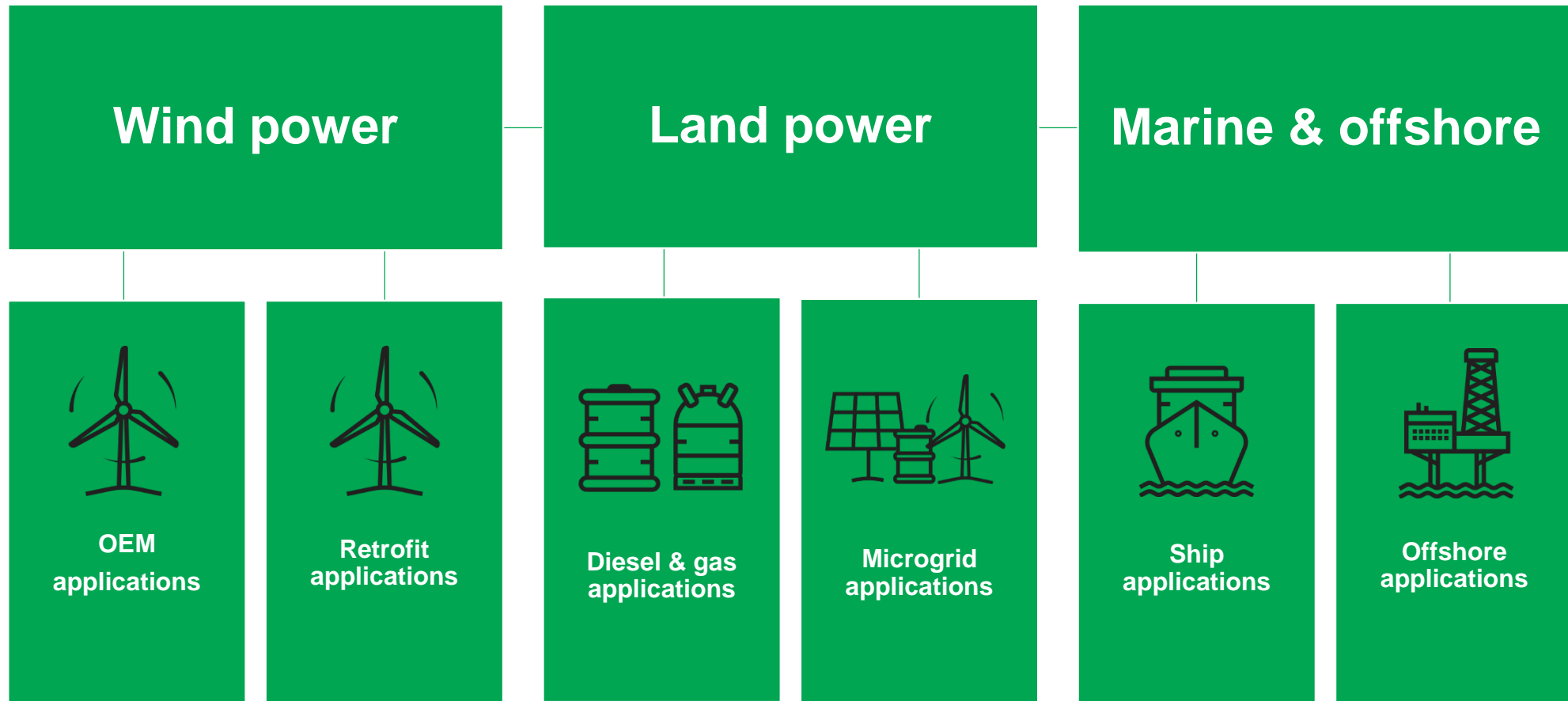
Allan Agerholm
Vice President
R&D Product & Applications



Martin S. Mallan
Vice President
R&D Platform

What we do

We develop, manufacture and sell **power control solutions** for decentralised power production placed on land or at sea.





About DEIF



1933

More than 80 years of achievement



Skive, Denmark

Group headquarters



+630

Number of employees



400

Employees in Denmark



20%

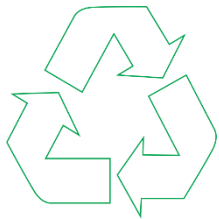
R&D workforce

Green & cost-efficient ambitions

Our aim is to make sure electricity is always available while striving to

- **Cut** fuel consumption & harmful emissions
- **Reduce** service costs
- **Increase** overall system performance

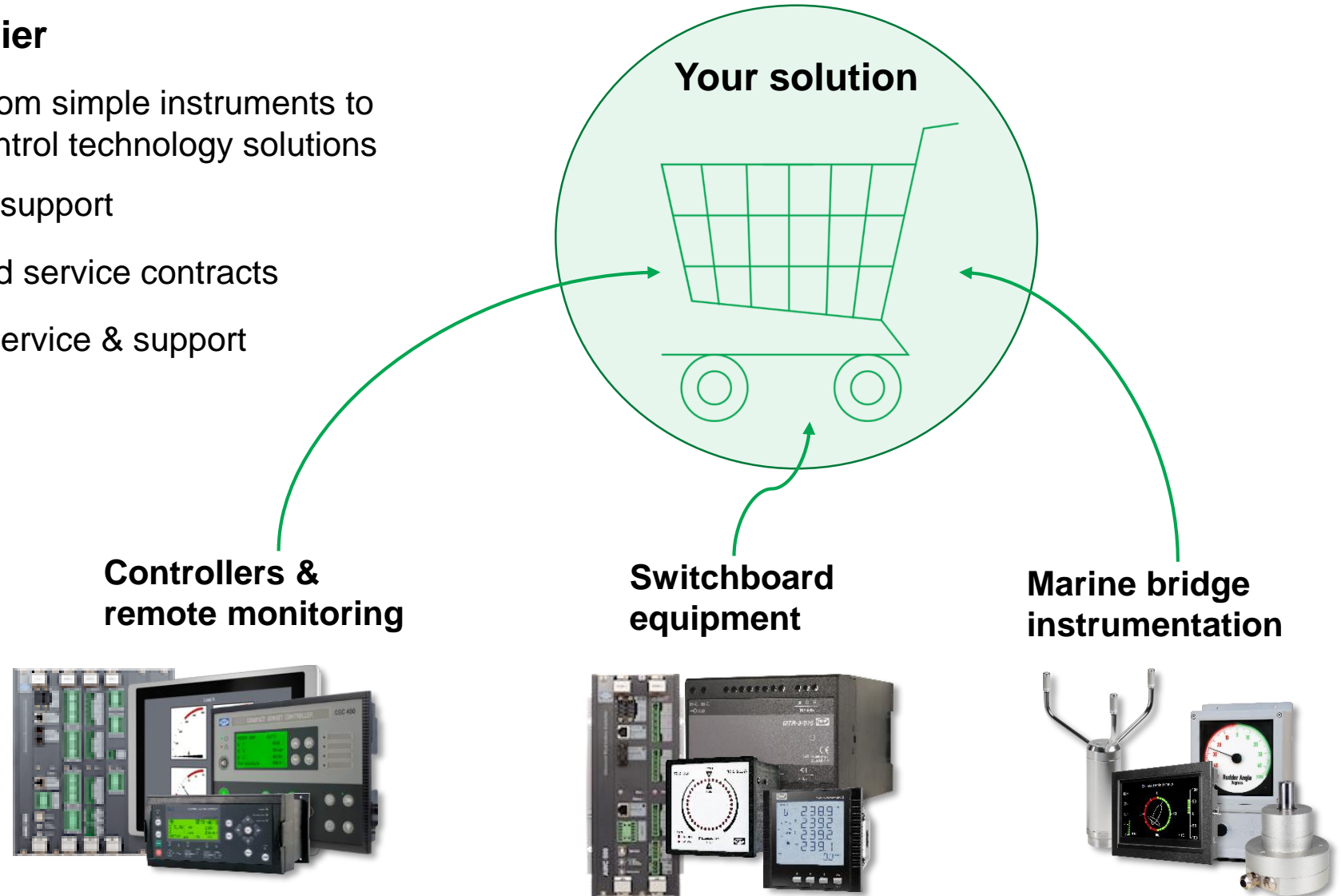
Altogether, we call it: **POWER EFFICIENCY.**



One-stop-shop

Everything from one supplier

- Complete scope of supply from simple instruments to complex and customised control technology solutions
- Pre-engineering and design support
- Commissioning, support, and service contracts
- 24/7/365 global after-sales service & support



Renowned among industry leaders



LAND POWER **MARINE & OFFSHORE** **WIND POWER**

POWERED BY





Land Power

Choose DEIF Land Power to increase performance & efficiency

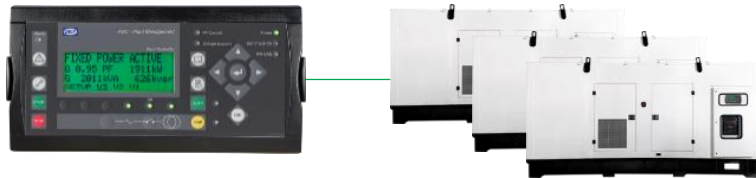


Land Power: Scope of supply

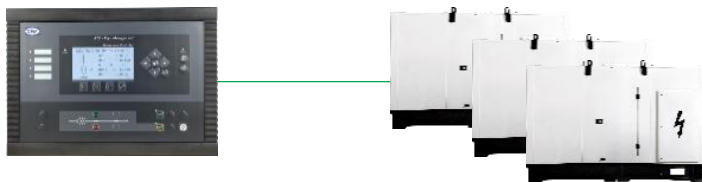
Fuel Tank Management



Power/Plant Management



Transformer Management



1 Switchboard Equipment



2 Controllers & Remote Access

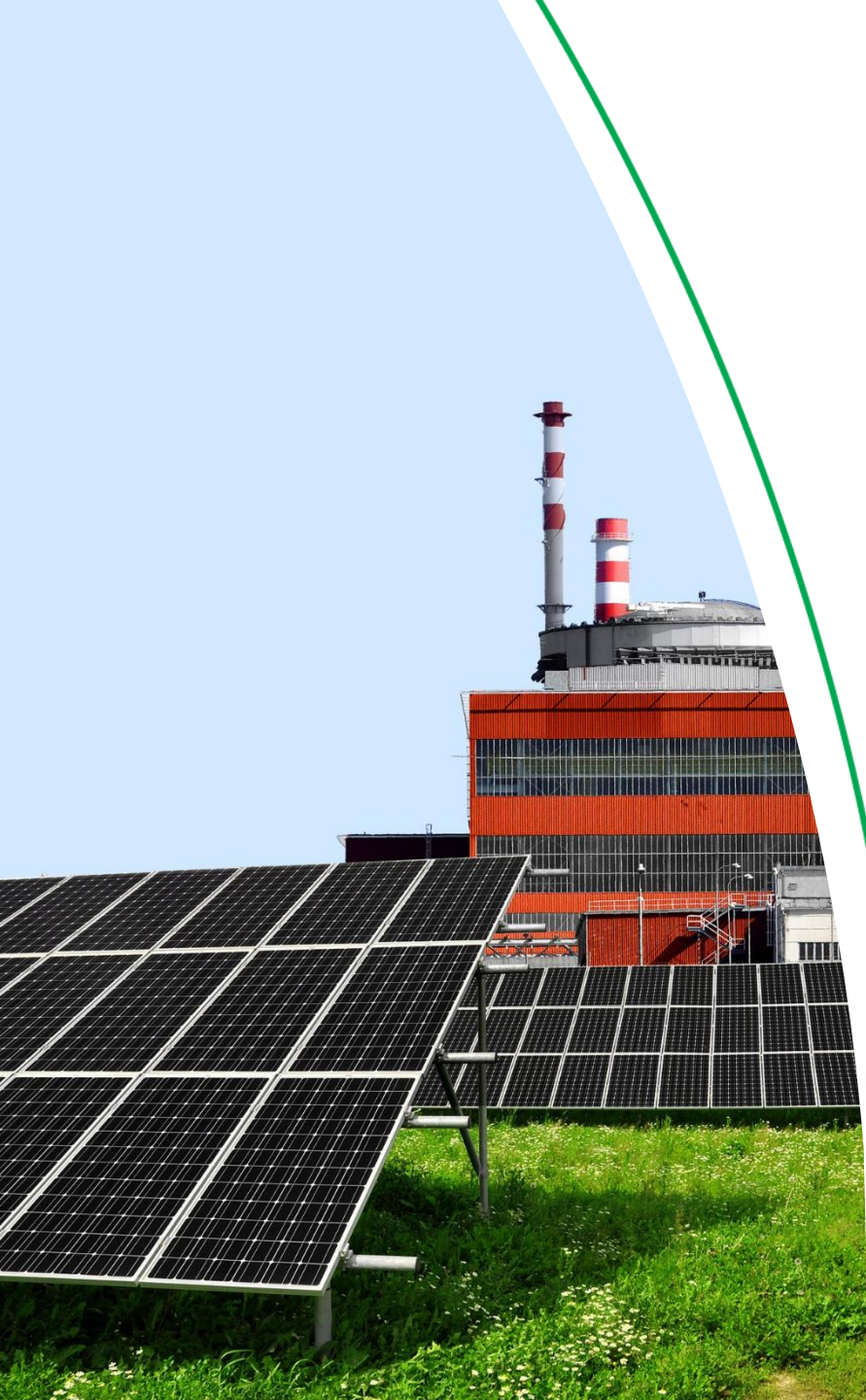


Microgrid solutions

Fully compatible with DEIF Power Management system technology, the DEIF Automatic Sustainable Controller is scalable, flexible and modular, supporting multiple operating modes:

- **Off-grid**
- **Grid-tied**
- **Combination**
Off-grid/Grid-tied

“The system’s safety features include breaker control, quick shutdown of sustainable power sources, directional power protection, and loss of mains protection according to national local grid codes.”





Critical power

DEIF installs critical power solutions without interrupting or bringing risk to current systems.

- Unique standby capacity with start-up from 6 seconds
- Patent-pending DEIF Emulation
- Hot Standby & Multiple Master

“DEIF has the technology and the capability to install rock solid critical power solutions without interrupting or bringing risk to your current systems. This too sets us apart from our competitors.”

Independent power producers

AGC Plant Management for IPP: up to 992 gensets, one central point of control.

- 100% automatic control from diesel to grid
- Information exchange between generator, transformer & fuel supply
- Fuel saving & optimised maintenance intervals

“This ground-breaking solution has revolutionised mega plant management with comprehensive automatic control. Yielding higher performance, Plant Management also breaks with traditional manpower heavy operations.”



Engine & genset OEMs

An ideal partner for OEMs locally and internationally, using DEIF products can increase production output.

- Reliable hardware
- In stock & ready to ship
- Local support

“The crucial difference between us and the competition is quality. When you buy genset controllers, the whole DEIF organisation stands behind the product. Choosing DEIF, you raise the bar and provide your buyers with more reliable hardware.”





Marine & Offshore

Reliable bridge instrumentation, switchboard equipment and power control solutions



Scope of supply

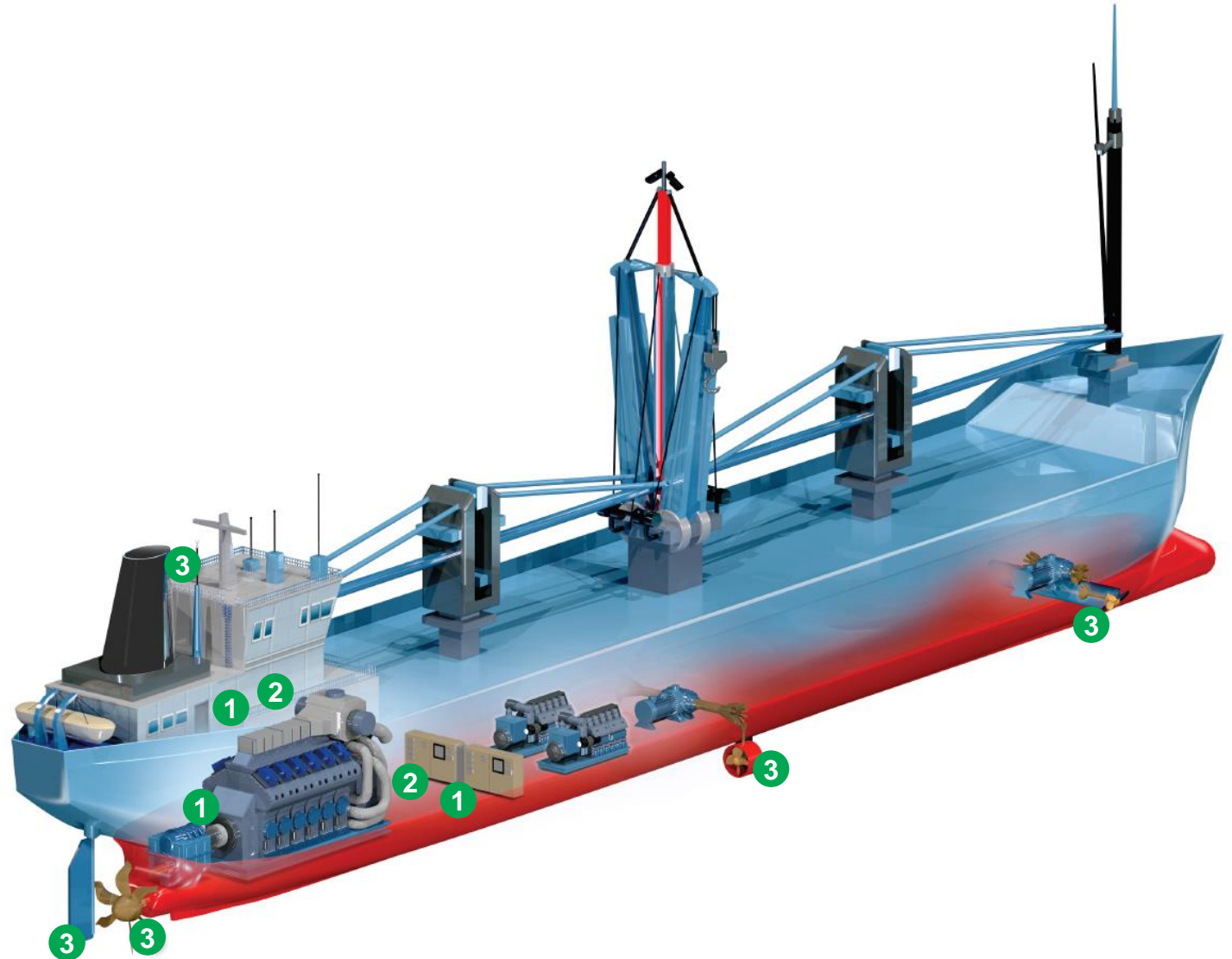
1 Engine & genset controllers



2 Switchboard equipment



3 Bridge instrumentation





Wind Power

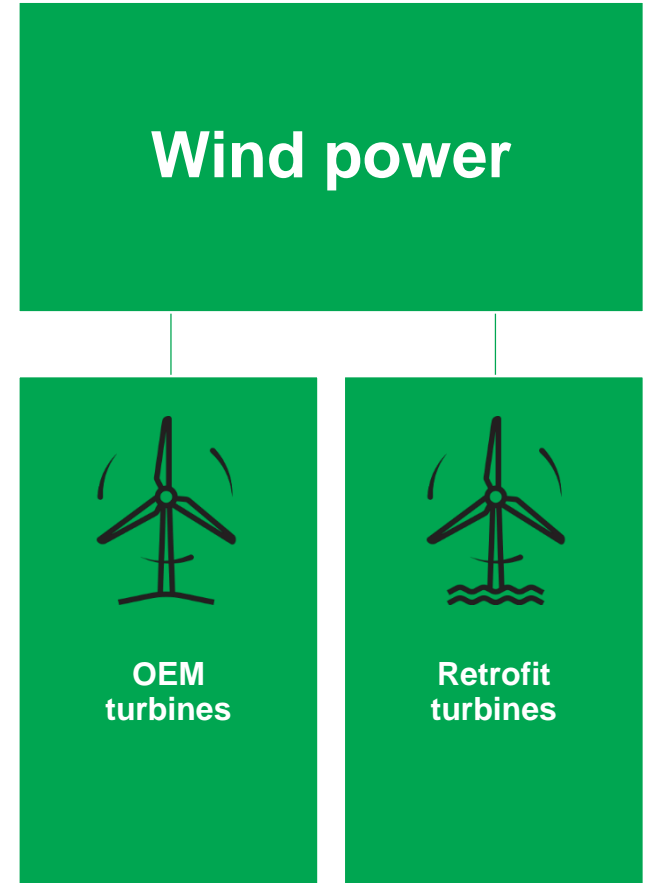
Robust solutions and knowledge sharing are hallmarks of DEIF Wind Power



Wind Power

- Turbine retrofit solutions
- Wind park control technology
- Pitch control systems
- Turbine control solutions

As a renowned supplier of dedicated key components for wind turbine control, DEIF Wind Power designs and manufactures complete control systems for both new and existing wind turbines of any size.



Turbine retrofit control solutions

DEIF prepares, develops, implements, verifies and supports retrofit solutions for any type of wind turbine.

- Customised solutions for kW and MW class turbines
- Reduce operational costs and increase energy production
- Extend turbine lifetime by up to 20 years

“DEIF has the technology and the capability to design and support new electrical control systems for wind turbine retrofitting.”





Pitch control systems

Solutions that optimise power production, reduce costs and maximise turbine safety.

- Ruggedised pitch components
- Unique safety and control strategies
- Model-based design and industry-leading simulation tools
- ISO 13849 certified pitch drive

“If you need more than just a standard solution, DEIF offers tailor-made pitch systems to ensure seamless integration into your turbine.”

Turbine control solutions

Ideally suited for turbine manufacturers and system integrators, DEIF's control solutions span across design concepts, control strategies to field commissioning.

- Extreme environmental impact immunity
- Modular control strategy
- Open software platform in CODESYS and C++
- Suitable for new and existing kW and MW size turbines

“Utilising the high mountain areas in China is only made possible with DEIF advanced turbine Controllers without additional design effort in the cold and high altitude climate.”





DEIF Challenges and aspirations

Moving from:

delivering value to customers

To:

efficiently delivering value to customers



DEIF Challenges and aspirations

Why ?

- resource availability
- need for focus on new things (innovation, digitalization,...)
- cost...
- etc.



DEIF Challenges and aspirations

How ?

- Reuse:
 - establishing one scalable platform
 - one architecture and one asset library across req., code & test assets
 - one way of working
- Setting business direction based on platform capabilities; And say no – and thus govern the architecture & the platform

Questions?



/DEIFgroup



/company/DEIFgroup



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