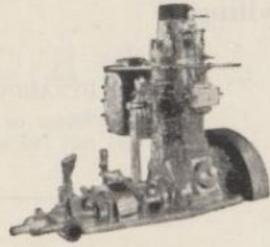


Designe og produsere industriprodukter i Norge og konkurrere globalt med lavkostland – Er det mulig?

Thomas Vekve, EVP Engineering – Mechanical & Hydrodynamics





Volda motor

2 takts Simidieselmotor med S. K. F.
Rullelager. — Størr. frå 4 til 100 HK.

Fabrikert av

**A.s VOLDA MEK. VERKSTED,
VOLDA**



**BRØDR. BRUNVOLL,
MOTORFABRIK, MOLDE.**

Firmaet blev startet i 1912 av Andreas og Anders Brunvoll og hadde til en begynnelse sin virksomhet på Nordheim i Sandøy, hvor der blev anlagt sløip og motorfabrikk. Men da virksomheten vokste og der var lite med utvidelsesplass på Nordheim, kjøpte firmaet i 1918 Engstrups motorfabrik i Molde, hvor arbeidet blev fortsatt under samme firmanavn, Brødr. Brunvoll, Motorfabrik, men med den forandring i firmaets sammensetning at også en tredje bror, Artur Brunvoll, nu blev med.



Andreas Brunvoll.



Anders Brunvoll.



Artur Brunvoll.

Firmaet gikk nu over til rasjonell fabrikasjon av råoljemotorer og leverer ensylindrede maskiner fra 5 til 80 HK, og flersylindrede fra 50 til 320 HK. Der er stadig arbeidet på å holde motortypen på høide med tiden og firmaets fabrikata er anset for å stå på høide med de beste.

Fabrikken har serskilt støperbygning beregnet på støpning av såvel de til fabrikkdriften nødvendige støpejernsdelar som metallartikler. Under de nuværende konjunkturer har man imidlertid ikke funnet det formålsstjenlig å drive annet enn metallstøpeiet.

I 1922 døde Anders Brunvoll, hvorefter firmaet fortsatte med Andreas og Artur Brunvoll som innehavere.

BRUNVOLL

- Established in 1912 as manufacturers of semi diesel engines
- Production of thrusters, propulsion and gearboxes since 1965
- Production of control system since 1970's.
- 100 % owned by Brunvoll family



INNOVATIONS SINCE 1912

BRUNVOLL

PRECISION IS OUR PASSION

Brunvoll - 110 Years of Entrepreneurship



**5 LOCATIONS
IN NORWAY**



**AGENTS IN
20 COUNTRIES**



**~500 EMPLOYEES
~40 APPRENTICES**



**~ 75% EXPORT
12 000+ UNITS**



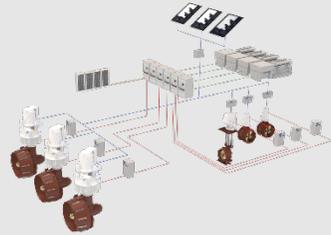
**~ 1.3 BNOK
REVENUE**

BRUNVOLL

Extensive Product Range – Manufactured In-House

AFTER-SALES SERVICES 24/7

Propulsion & Manouvering



Control & Automation



Electrical & Hybrid



Systems for all ship types

- Brunvoll is among the leaders in development and configuration diversity of propulsion and manoeuvring systems.
- Long experience and close location to well-reputed maritime clusters have given Brunvoll first hand knowledge of new developments and strict requirements applying to vessel operation and how to fulfil the obligations of each vessel when it comes to propulsion and manoeuvring.
- The variety in system solutions are numerous, configured from the wide product range of gearboxes, propellers, azimuth thrusters, thrusters, control & automation systems, and hybrid/electric system integration.



Cruise



Ro-Pax



Shuttle Ferries



Yacht



Navy



Fishing



Fish Farming



Offshore



Wind farm support



Wind farm support



Shuttle Tanker



Cargo/Containers

World-Wide After-Sales Service



**SERVICE NETWORK IN
40 COUNTRIES**



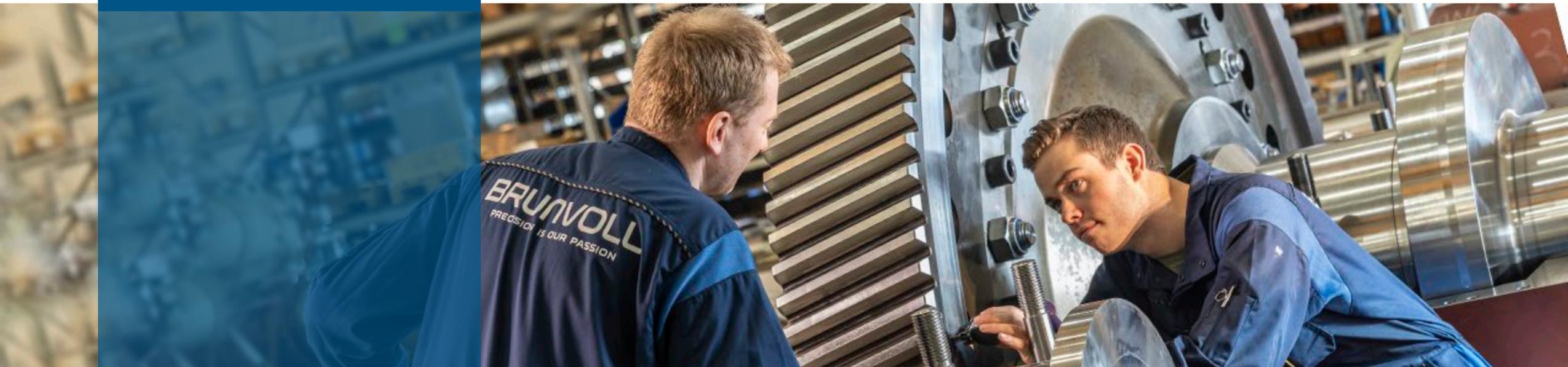
**HIGH QUALITY CUSTOMER
CARE 24/7**



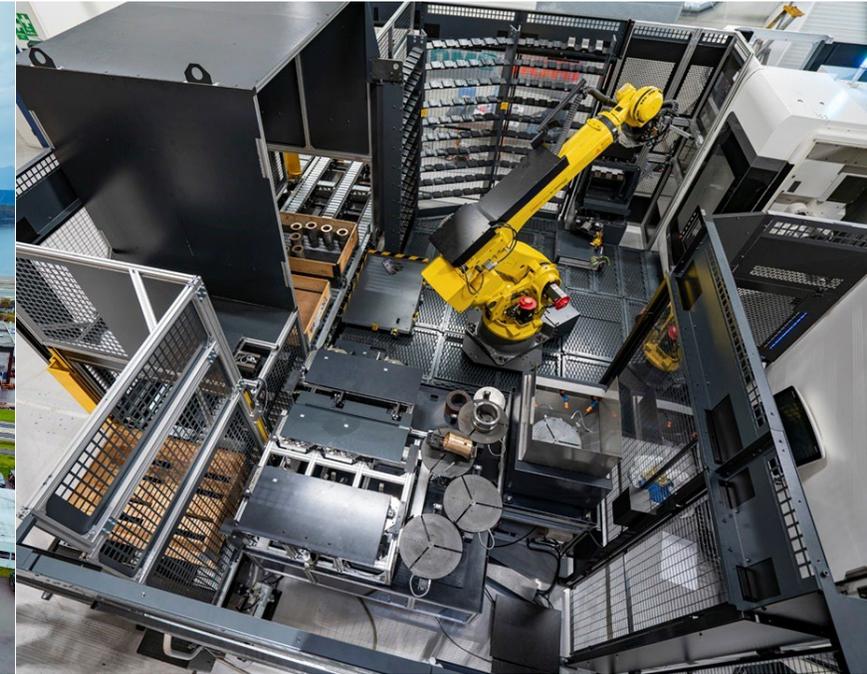
**COMPETENCE & SPARES –
SAFE AND EFFICIENT
OPERATIONS**

BRUNVOLL

«Produce in Norway»



Integrated Value Chain



MADE IN NORWAY



**AUTOMATED &
ROBOTIZED
PRODUCTION**



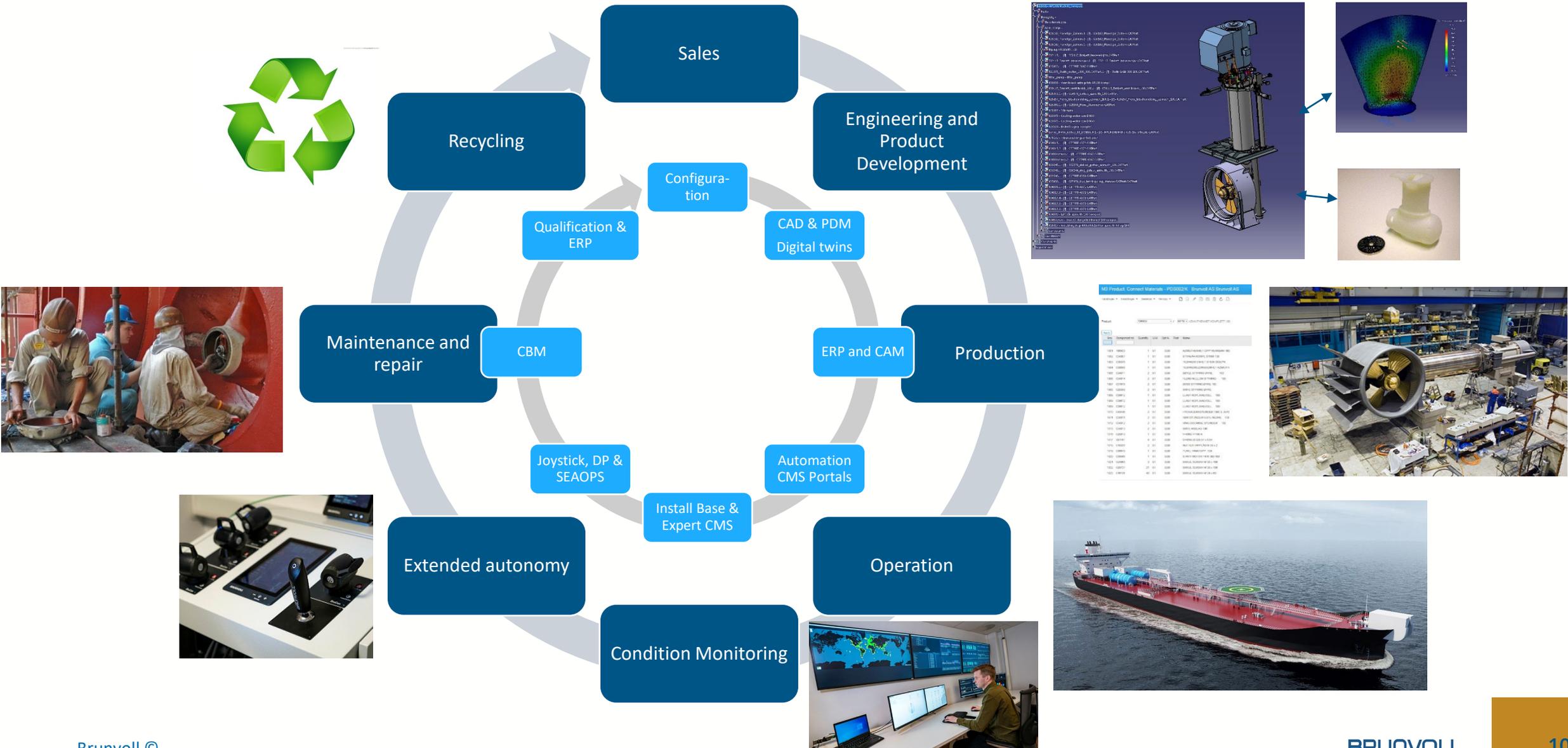
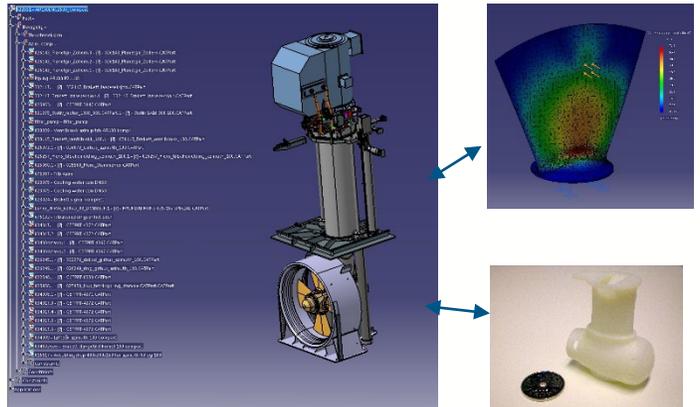
**CO-LOCATED
ENGINEERING &
PRODUCTION**



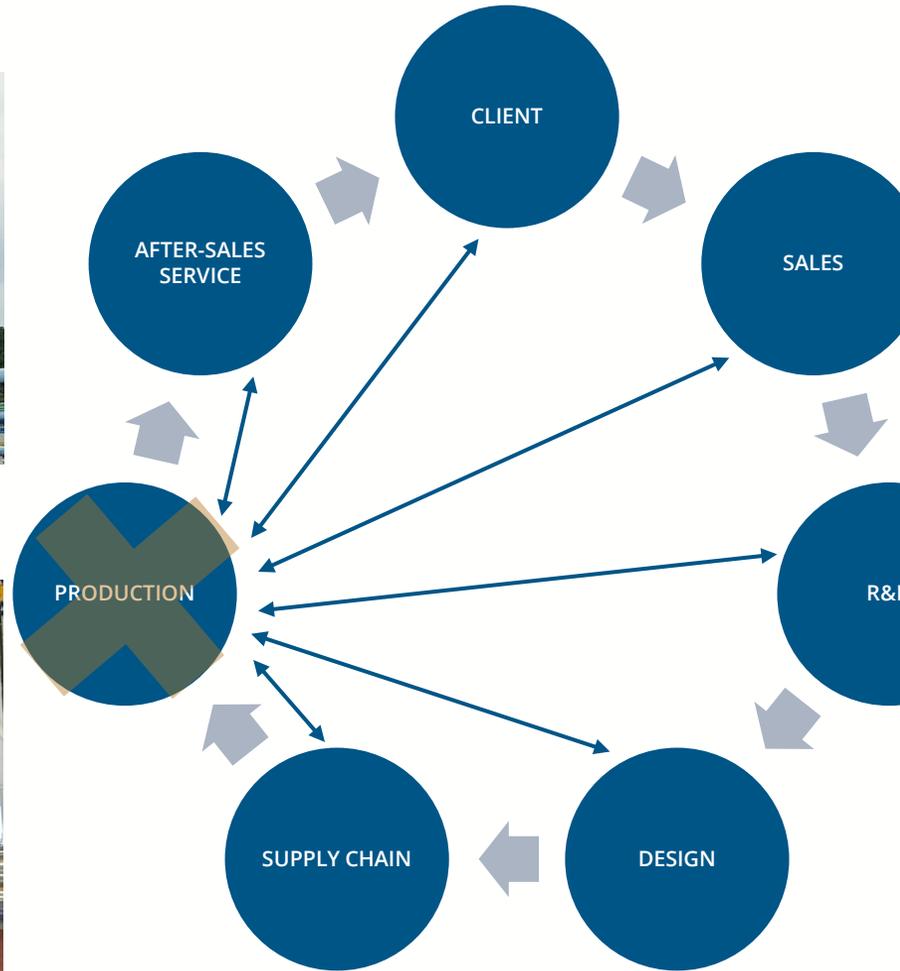
**+ 150 MNOK INVESTED
LAST YEARS**

BRUNVOLL

A digital thread through the complete lifecycle



«Produce-in-Norway» - Strategy since 1992



A strategic choice – produce in Norway

- In-house construction and production
 - In-house production gives increased competence
 - Outsourcing production is loss of competence
- A Norwegian industrial cluster is necessary to maintain our innovation ability and competitiveness
 - Energy companies
 - Shipowners
 - Yards
 - System suppliers
 - Equipment suppliers



Our People is Our Most Valuable Asset



**14 YEARS AVERAGE
LENGTH OF SERVICE**



**70 000 HOURS YEARLY
AT PRODUCT
DEVELOPMENT**



98,9% OWN EMPLOYEES



100+ ENGINEERS

BRUNVOLL

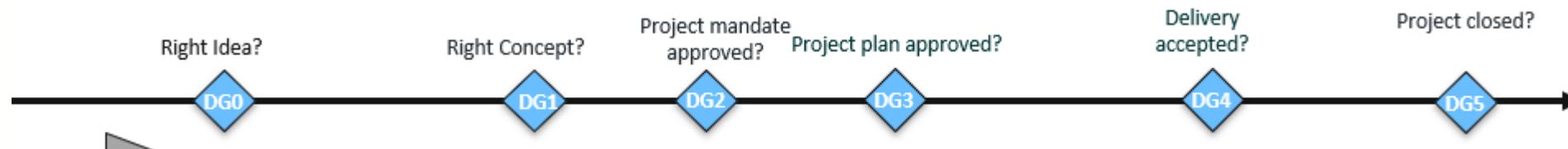
Innovation in Brunvöll



Model for Product Development

- Roadmaps
- Stage gate model
- Improvement focus
- Involvement across departments
 - Able to buy raw materials
 - Able to produce
 - Able to sell
 - Able to maintain
 - Able to recycle

Brunvoll Project Execution and Governance Model



Competence

- Onboarding process
 - Internship in the factory
- Apprentices
 - Skilled workers educated internally
 - TAF/YSK for future engineers
 - Internal career paths
- Engineers, skilled workers and cooperation between the disciplines
 - An unbeatable combination



Seek new knowledge

- Engage in industrial clusters
 - Cooperate and compete
- Cooperate with education and research
 - Norway and abroad

Brunvoll is part of Hurtigruten's zero-emission ship project Sea Zero

Hurtigruten's ambition is to develop a zero-emission ship for the coastal route from Bergen to Kirkenes. The project is close to 130MNOK and in close cooperation with several leading Norwegian maritime suppliers, including Brunvoll.

We could have waited for others to develop the technology, but Norway would then miss a great opportunity says Hedda Felin, CEO in Hurtigruten Norge. But it is decisive that the Norwegian government financially support the development, enabling Norwegian maritime industry to develop the best zero emission technology and thus contribute to Norwegian value creation. Hurtigruten are ready to do our part to through development of a new zero emission ship suited for the Norwegian coastline



Thank you for your attention

For more information: www.brunvoll.no

