This is Sustainable Technology Hub

Welcome to an ecosystem of collaboration

Vesa Riihimäki

Our story is one of transformation

It has been enabled by our people, our innovations, and our extraordinary ability to adapt to change. 190 years ago, we were just a Finnish sawmill. Today, we are driving decarbonisation in the global marine and energy markets.

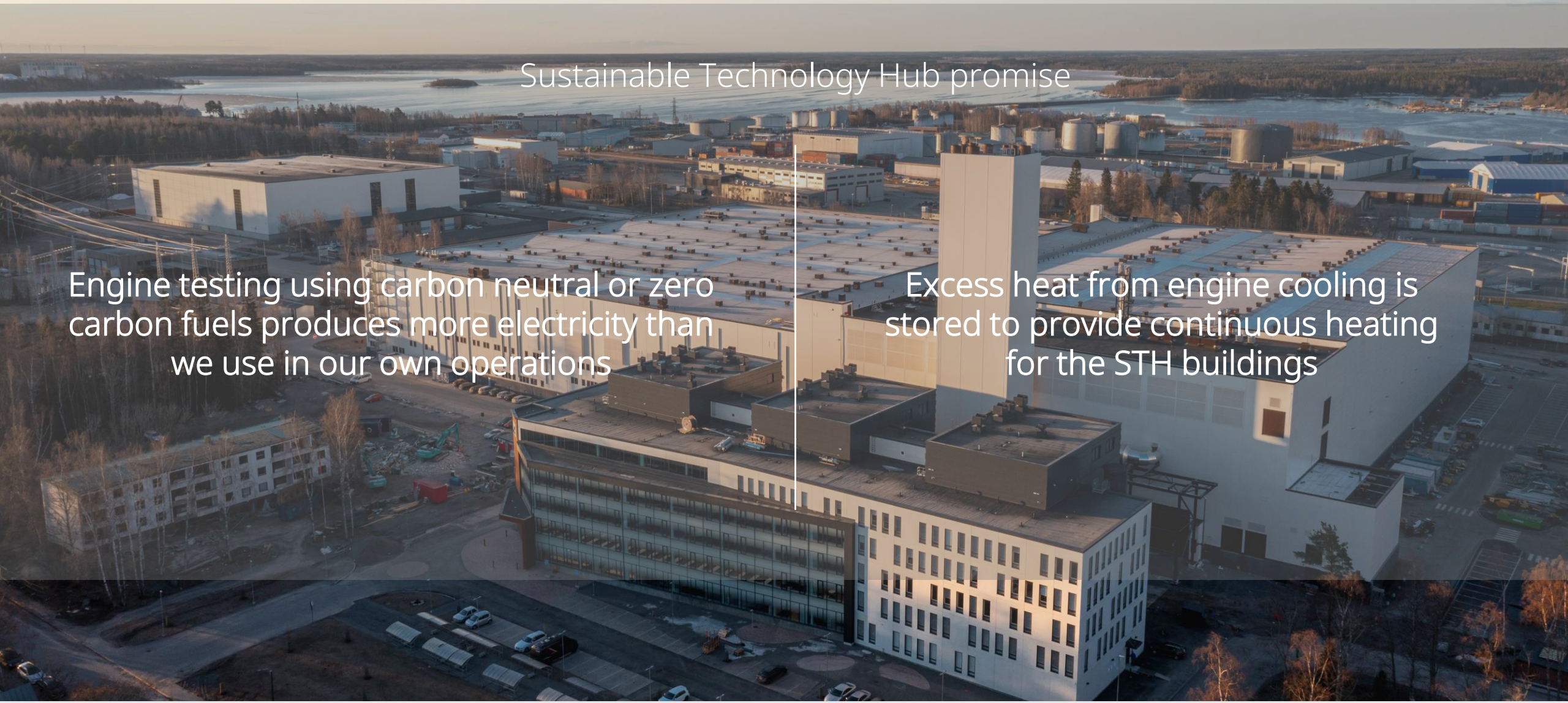

"We accelerate the decarbonisation of the marine and energy industries through innovation, focused investments, and selective partnerships, while at the same time decarbonising our own operations."
Håkan Agnevall
President & CEO

Ambitious sustainability targets for 2030

To provide a product portfolio which will be ready for zero carbon fuels

To become carbon neutral in our own operations

Sustainable Technology Hub promise



Engine testing using carbon neutral or zero carbon fuels produces more electricity than we use in our own operations

Excess heat from engine cooling is stored to provide continuous heating for the STH buildings

STH in numbers

- STH is a 250M€ overall investment to develop future technologies and modern, sustainable manufacturing of products and co–operation.

- Main milestones
  - Launched 21.8.2018
  - Groundbreaking ceremony 10.9.2019
  - Inauguration 1.6.2022

- STH in figures
  - 90000 m2 total area (Office 15k, Hub 61k, Log 14k)
  - 10 600 design documents
  - 4 500 000 kg of steel
  - 36 000 m3 concrete
  - 162 designers

Designed for sustainability

- It was clear from day one that sustainability will be the guiding principle everywhere in the STH building.
- The design, construction, and use of STH are guided by BREEAM certification, a rating system that assesses the eco-efficiency of buildings.
- With the building management system (BMS), we monitor energy, electricity, heat and water consumption and the system performance of STH.
- STH is targeting energy self-sufficient both for electricity and heat, with total energy efficiency being above the industry average, and peak efficiency approximately 75%.
  - Excess power is fed back to the 110kV grid through 50MW of frequency converters
  - The heat that is produced during engine tests or other processes, is collected into a 300m3 thermal energy storage tank and re-used in-house.
- STH buildings are leased with asset light principle for financial sustainability

Research & Development

To shape the decarbonisation of Marine and Energy.

R&D in the new technology centre

- Wärtsilä focuses on developing our core technologies, such as engines, energy storage, and digital solutions and by partnering with other stakeholders we ensure even broader solution offering to our customers.
- Developing the use of alternative fuels is the key focus area of R&D, as is improving the connectivity, efficiency, sustainability, and safety of customer operations through the increased use of digital solutions.
- The facilities in STH enable agile development and efficient research of sustainable solutions.
- There is one common facility for testing and validation of customer deliveries. To maximise the synergies for most efficient new technology introduction, also research, technology and product development happens in this same space.

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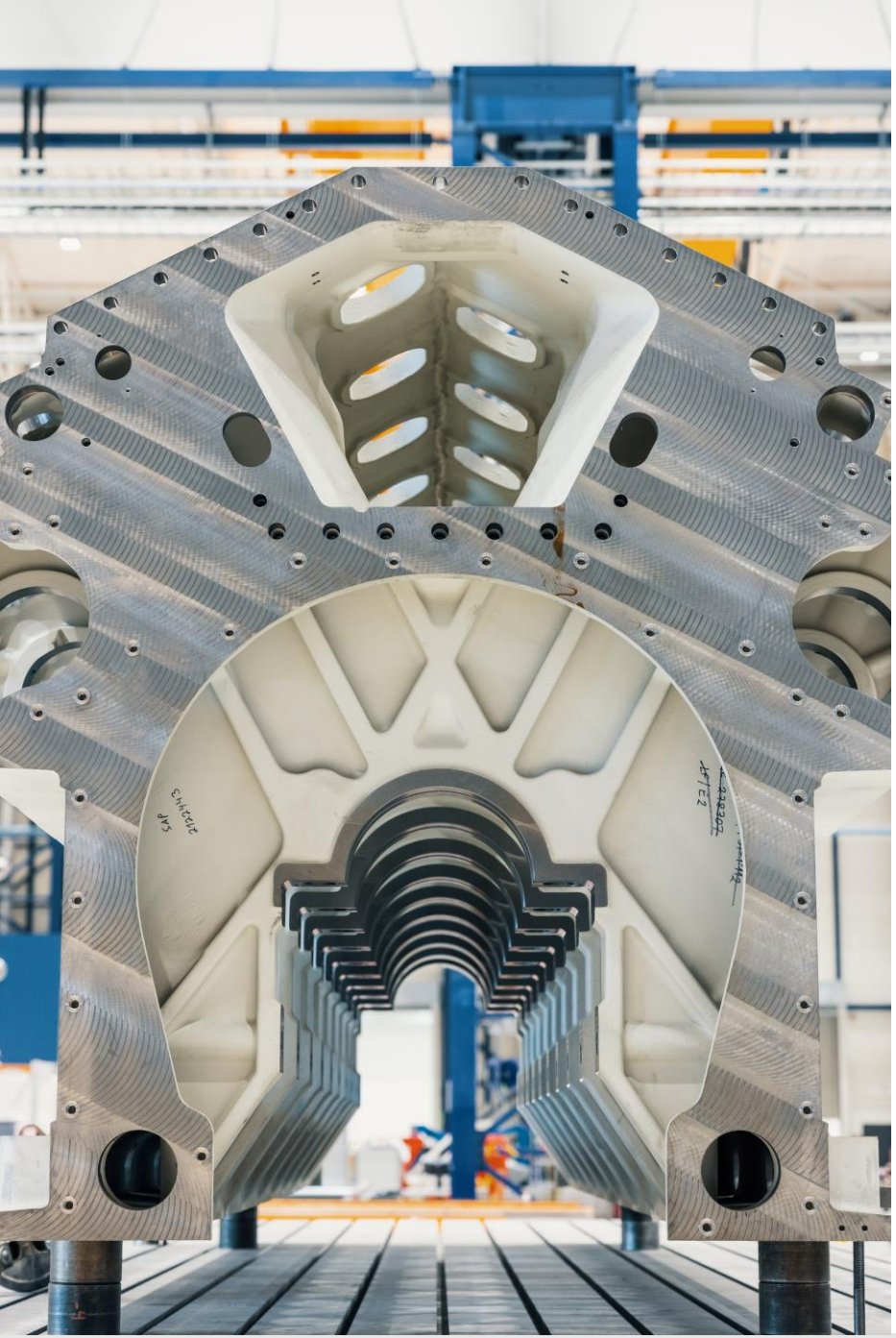
Manufacturing

This is where innovations come to life



Flexible manufacturing model

1. **Manufacturing of all Wärtsilä portfolio engines**
   - STH is Wärtsilä's 4S manufacturing site in Europe, complemented with 2 engine JV's in China
   - Flexibility to adjust volume between small bore, medium bore and large bore depending on demand

2. **Multi-product assembly and testing for flexibility**
   - Line production for standard products
   - Cell production for tailoring products
   - New product introduction (NPI)

3. **Demand-driven operating model for operational efficiency**
   - Lean prouduction and optimised flow
   - Inventory optimisation and fast response through demand-driven production planning

4. **Automated logistics for efficient material flow**
   - Dedicated Logistics Centre with highly automated warehouse management system

5. **Advanced machining to match demand and high quality**
   - Fully automated tool management enables machining based on demand

6. **Future manufacturing technologies and 3D printing**
   - Additive manufacturing campus for introducing new manufacturing methods


WÄRTSILÄ