

Welcome to visit *Sumitomo Heavy Industries and Sumitomo SHI FW!*

October 7th, 2026
Yokosuka

 Sumitomo Heavy Industries, Ltd.



 Sumitomo
SHI/FW

Today's speakers and agenda

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Yoichi Kato

Vice President,
Head of Energy & Environment SBU,
Energy & Lifeline Segment
Sumitomo Heavy Industries Ltd.



Jari Nokelainen

Senior Vice President,
Energy and Decarbonization
Sumitomo SHI FW



Terunobu Nakajyo

General Manager, Innovation and
Technology Research Laboratories,
Corporate Technology Management Group
Sumitomo Heavy Industries Ltd.

// Program

- | | |
|---------------|--|
| 9.30 - 9.40 | Registration, refreshments |
| 9.40 - 11.30 | Welcoming words
Presentations and discussions |
| 11.30 - 12.30 | Lunch |
| 12.30 - 13.30 | Robotics demonstration
and site tour |



Japan and Finland work together to drive decarbonization

 Sumitomo Heavy Industries, Ltd.

 nZEE

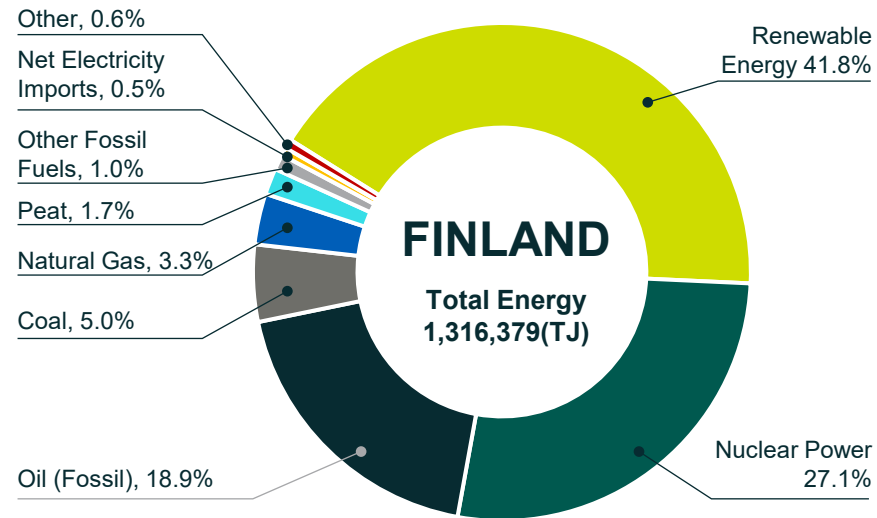
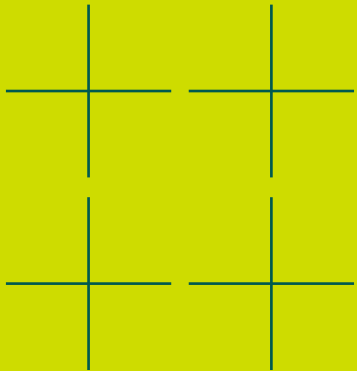
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Japan's efforts toward decarbonization

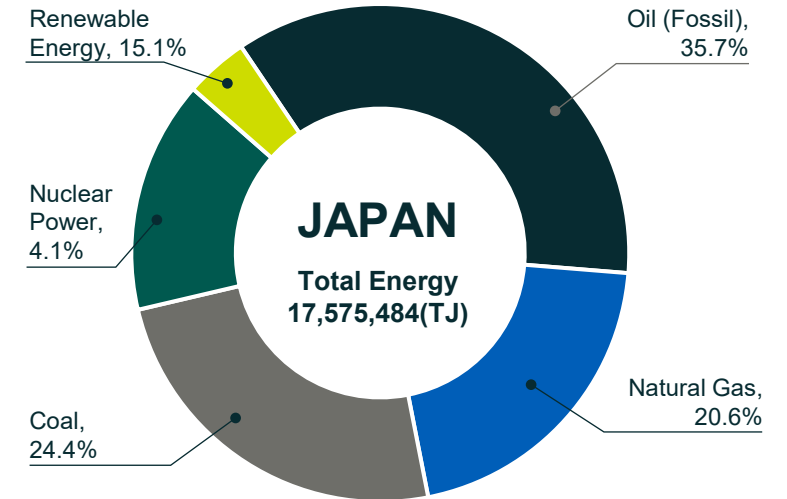
Carbon neutrality policy goals

- Achieve carbon neutrality by 2050
- Reduce greenhouse gas emissions by 46% by 2030 (compared to 2013 levels)
- Renewable energy share: Target 36–38% by 2030

TOTAL ENERGY CONSUMPTION SHARE (2023)



Source: Statistics Finland



Source:
Comprehensive Energy Statistics (Agency for Natural Resources and Energy)

Japan's efforts toward decarbonization

MAIN ACTIONS

Energy

- Expansion of Renewable Energy
- Energy Conservation
- Nuclear Power
- Storage Batteries

Circular Economy

- Use of Recycled Materials
- Environmentally Conscious Design
- CE Commerce

Mobility

- Automotive, Logistics
- Aviation
- Rail

Decarbonization

- Carbon-recycled fuel
- Bio-based manufacturing
- Agricultural decarbonization

S (Safety) + 3Es (Energy Security, Economic Efficiency and Environment) as cornerstone of Japanese energy policy

“On the premise of safety, the first priority is to ensure a stable energy supply, while improving economic efficiency and environment suitability.” - The 7th Strategic Energy Plan

Green Tech Investments to Finland by Japanese Companies



Kopsa III Wind Farm / Ketunpera Wind Farm (Raahe)

12 wind turbines – Total nominal power **74,000kW**

Scheduled to begin commercial production in the first half of 2027



Hycamite TCD Technologies Oy (Kokkola)

Invested to Turquoise Hydrogen Production Technology Development



Low-Carbon Aluminium Project (Kokkola)

with Rio Tinto and Fortum Under Feasibility Study



Piiparinmäki Wind Farm (Kajaani & Pyhäntä)

41 wind turbines

Total nominal power **210,000kW**

Commercial production began in 2022

Alajärvi Wind Farm

36 wind turbines

Total nominal power **221,000kW**

Commercial production began in 2023



Metsä Spring Oy (Äänekoski)

Invested to set up a pilot plant of cellulose fibers



OVAKO Imatra (Imatra)

Acquired to gain the technology for producing sustainable, high-quality special steel



HITACHI Energy (Vaasa)

invests in new Energy Park production and technology center to produce transformer



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The Net Zero Energy Ecosystem Program (Espoo)

Establish the NZEE program, aiming for the transition to a net-zero society, and provide optimal integrated energy and emissions solutions to achieve industrial decarbonization goals.



Walki Group

(Valkeakoski, Pietarsaari, Ylöjärvi, etc...)

Acquired to gain the sustainable food packaging technologies



Sumitomo Heavy Industries and Sumitomo SHI FW

A diversified global industrial group with a close connection to Finland

 Sumitomo Heavy Industries, Ltd.

 nZEE

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Sumitomo Group: An Overview

A history of more than 400 years

The Sumitomo Group's history stretches back more than 400 years. All Group companies continue to operate under a business spirit that has been passed down to the present day.

A core of 19 companies

All but two of the Group's 19 companies have "Sumitomo" in their name and use the same Sumitomo logo.

Sumitomo's Business Principles

Article 1: Sumitomo shall achieve strength and prosperity by placing prime importance on integrity and sound management in the conduct of its business.

Article 2: Sumitomo shall manage its activities with foresight and flexibility in order to cope effectively with the changing times. Under no circumstances, however, shall it pursue easy gains or act imprudently.

Sumitomo Chemical Co., Ltd.	Chemical
Sumitomo Heavy Industries, Ltd.	Machinery
Sumitomo Mitsui Banking Corporation	Finance
Sumitomo Metal Mining Co., Ltd.	Nonferrous Metals
Sumitomo Corporation	Commerce
Sumitomo Mitsui Trust Bank, Limited	Finance
Sumitomo Life Insurance Company	Life insurance
The Sumitomo Warehouse Co., Ltd.	Warehousing
Sumitomo Electric Industries, Ltd.	Nonferrous Metals
Mitsui Sumitomo Insurance Co., Ltd.	Non-life insurance
Nippon Sheet Glass Co., Ltd.	Glass
NEC	Electric equipment
Sumitomo Realty & Development Co., Ltd.	Real estate
Sumitomo Osaka Cement Co., Ltd.	Cement
Sumitomo Mitsui Construction Co., Ltd.	Construction
Sumitomo Bakelite Co., Ltd.	Chemical
Sumitomo Forestry Co., Ltd.	Timber, housing
Sumitomo Pharma Co., Ltd.	Pharmaceuticals
Sumitomo Rubber Industries, Ltd.	Rubber products

Sumitomo Heavy Industries, Ltd.

Head Office	●	ThinkPark Tower, 2-1-1 Osaki, Shinagawa-ku, Tokyo 141-6025, Japan
President	●	Toshiro Watanabe
Founded	●	November 20, 1888
Incorporated	●	November 1, 1934
Capital	●	JPY 30,872 million (as of December 31, 2025)
Number of Employees	●	Consolidated: 25,123 (as of December 31, 2025)
Annual Revenue	●	Consolidated: JPY 1,066,881 million yen (for the fiscal year ending December 2025)



Our history goes back over 400 years – one of the oldest Japanese business groups

1585

Masatomo Sumitomo, the founder of the Sumitomo Group, was born.



1690

The Besshi Copper Mine was discovered forming the backbone of Sumitomo's business

1888

A machinery production and repair shop was launched for the Besshi Copper Mine



1590

Masatomo's brother-in-law Riemon Soga established a copper smelting and copper smithing business



1934

Sumitomo Machinery Works, Ltd. was established as an independent public corporation

1969

Sumitomo joined forces with Uraga Heavy Industries, Ltd. and became Sumitomo Heavy Industries, Ltd.

Four Segments: The products of the Sumitomo Heavy Industries Group are classified into four segments based on common business direction and homogeneity, and they each demonstrate synergy in their respective fields.

Energy & Lifeline



CFB and BFB boiler power plants



Wastewater treatment



Gasification



Liquid Air Energy Storage (LAES)



Plant operation support system



Carbon Capture

Logistics & Construction



Industrial cranes (Unloader)



Hydraulic excavators



Construction cranes (Crawler cranes)



Mechatronics



Power transmission and control equipment



Precision positioning systems

Industrial Machinery



All electric injection molding machine



Cryocooler for MRI



Cyclotrons for cancer diagnosis



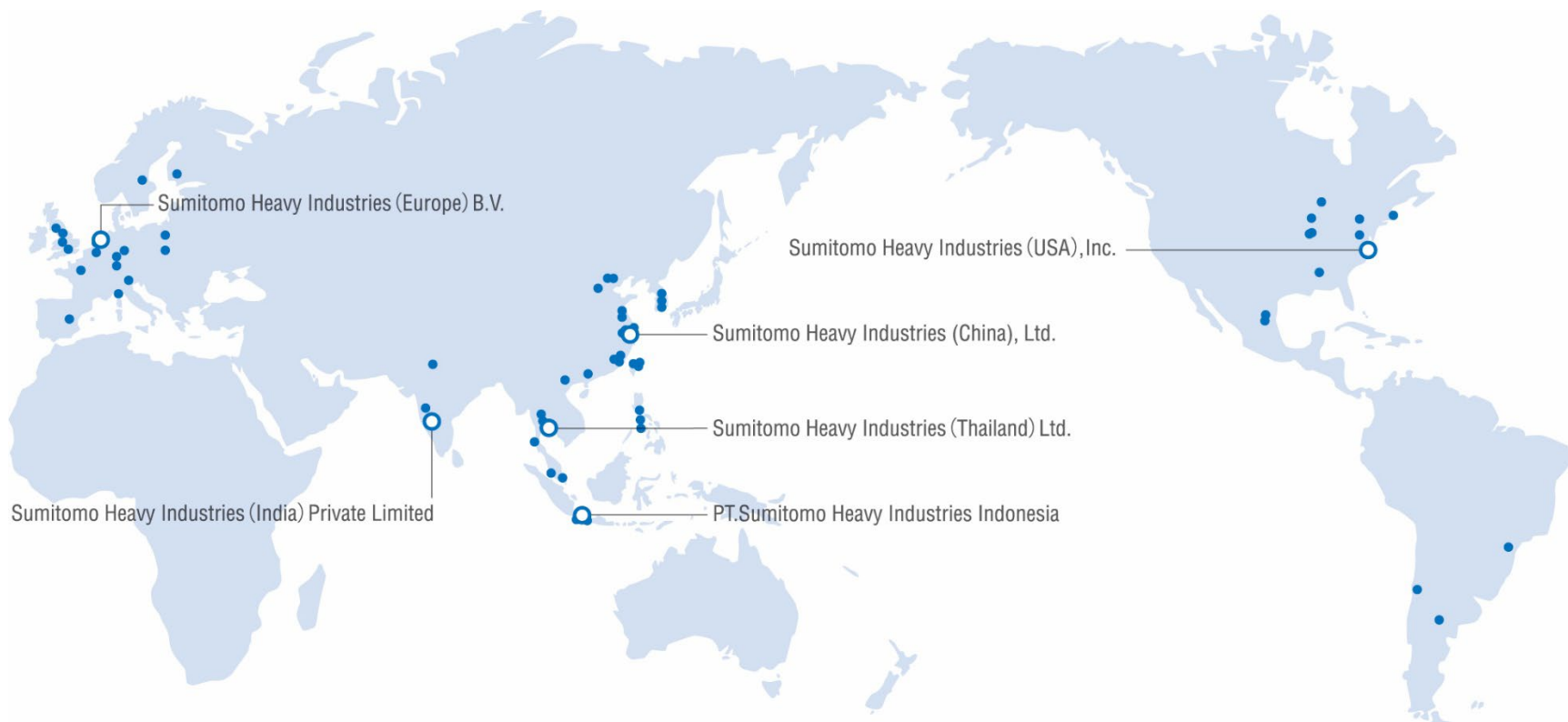
Ion implantation systems



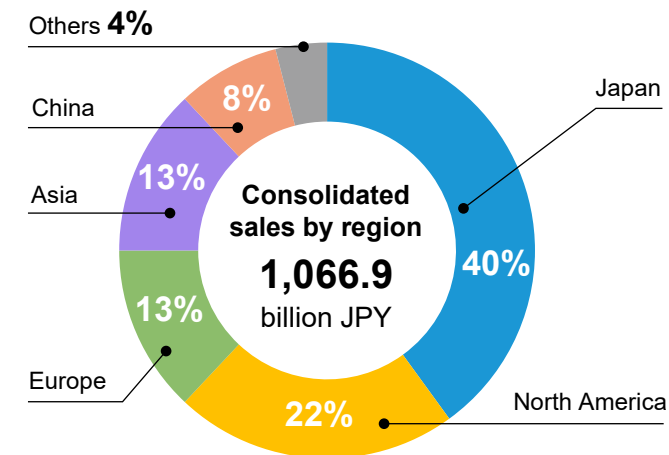
Proton cancer therapy system

► Overseas Business Bases

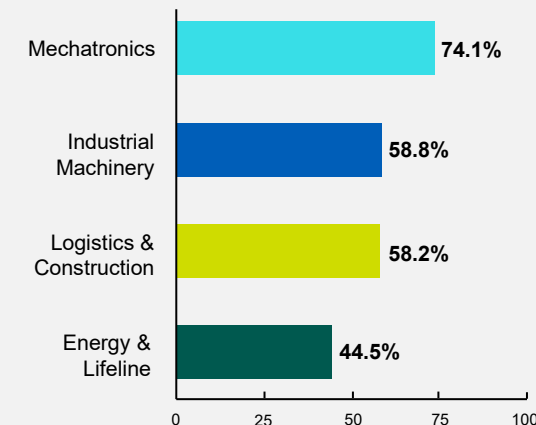
We are expanding our business globally by focusing on regional companies.
There are approximately 180 group companies, including subsidiaries and affiliates.



※Each graph shows the results for fiscal year 2025



Overseas sales ratio by segment



► Organization

Energy & Environment SBU

Design, Procurement, manufacturing and construction of/and maintenance services for power plant equipped with CFB/BFB boiler as their major unit, electro precipitator, ash treatment facilities, evaporation and crystallization facilities and rotary kiln

Sumitomo SHI FW (“SFW”)



Design, Procurement, Manufacturing and construction of/and maintenance service for environment and energy plants including CFB/BFB boilers

SHI Designing and Manufacturing (“SDMI”)

Detail design work related to CFB boilers and SHI group related product Development and maintenance of SHI group design support of software and information systems

► Energy and Environment Products

Energy



Liquid Energy Storage (LAES)



Fluid bed gasifiers



CFB Boiler



Waste-to-energy plants



Waste Heat Boiler



BFB Boiler

Digital Service



Plant operation support system

Environment



Electrostatic Precipitator



Rotary Kiln



Ash Handling System



Flue Gas denitrification System



Bag Houses



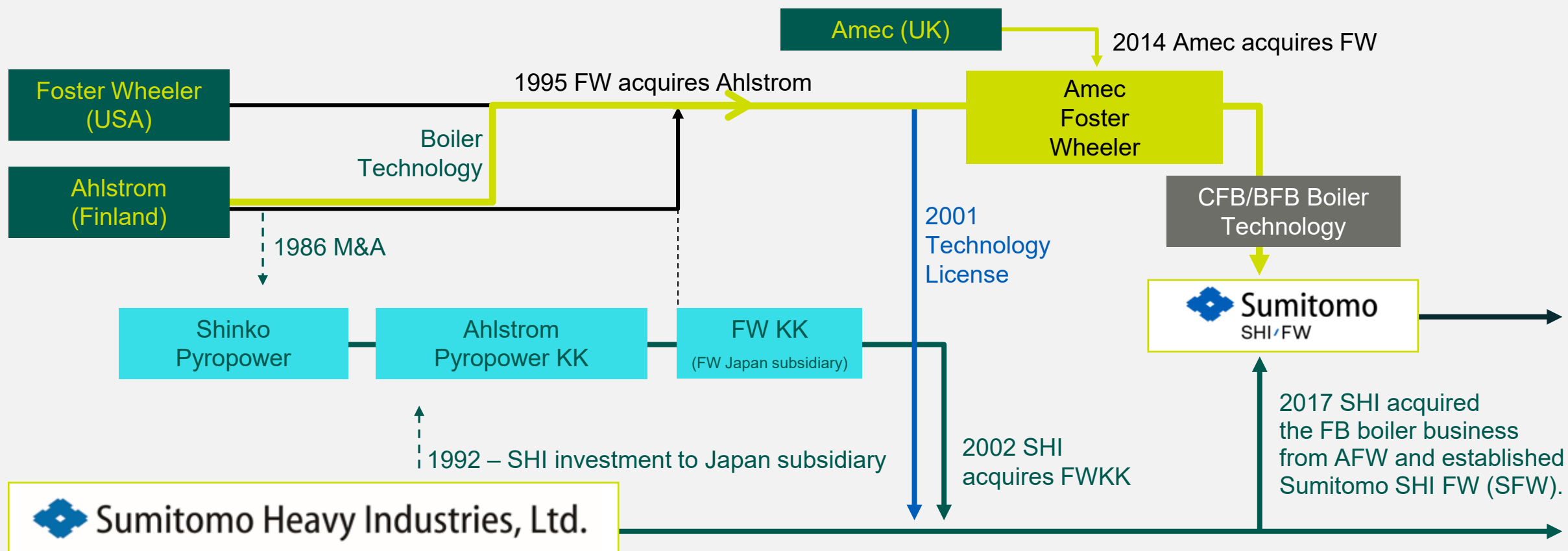
Evaporation and Crystallization



Flue gas desulfurization System

- SHI's relationship with Finland began through boiler technology, leveraging the expertise of Ahlstrom (now SFW), the original developer of our CFB/BFB boilers, to expand our business in Japan and worldwide.

- Building on our boiler business partnership, SHI and SFW have broadened their collaboration and are jointly advancing business opportunities across a wide range of both new and legacy technologies.



Sumitomo Heavy Industries and **Sumitomo SHI FW**

When Japanese corporate values meet Nordic innovation:
Building the backbone of a Net Zero energy future.

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SFW response to decarbonization

Japanese precision and sustainability goals merge with European agility in innovation.



Energy Generation

Energy from biomass or waste for carbon neutral or carbon negative heat & power applications



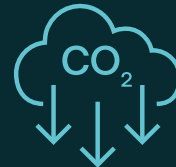
Sustainable Fuels

Carbon neutral and waste feedstock into sustainable syngas, biofuels & chemicals, and plastics recycling



Energy Storage

Long Duration Storage – enabling net zero grid systems together with renewables



Carbon Capture

Fleet of Carbon Capture technologies to decarbonize energy heavy industries



Lifecycle Services

Lifecycle solutions enabling high plant availability and efficiency



SFW | Global Reach | Worldwide footprint, local connections

1,600
employees
across the globe

19
locations
around the world

130+
years of
experience



2017

Business combination between FW and Sumitomo Heavy Industries



2014

Amec Acquires Foster Wheeler



1995

Foster Wheeler Acquires PyroPower

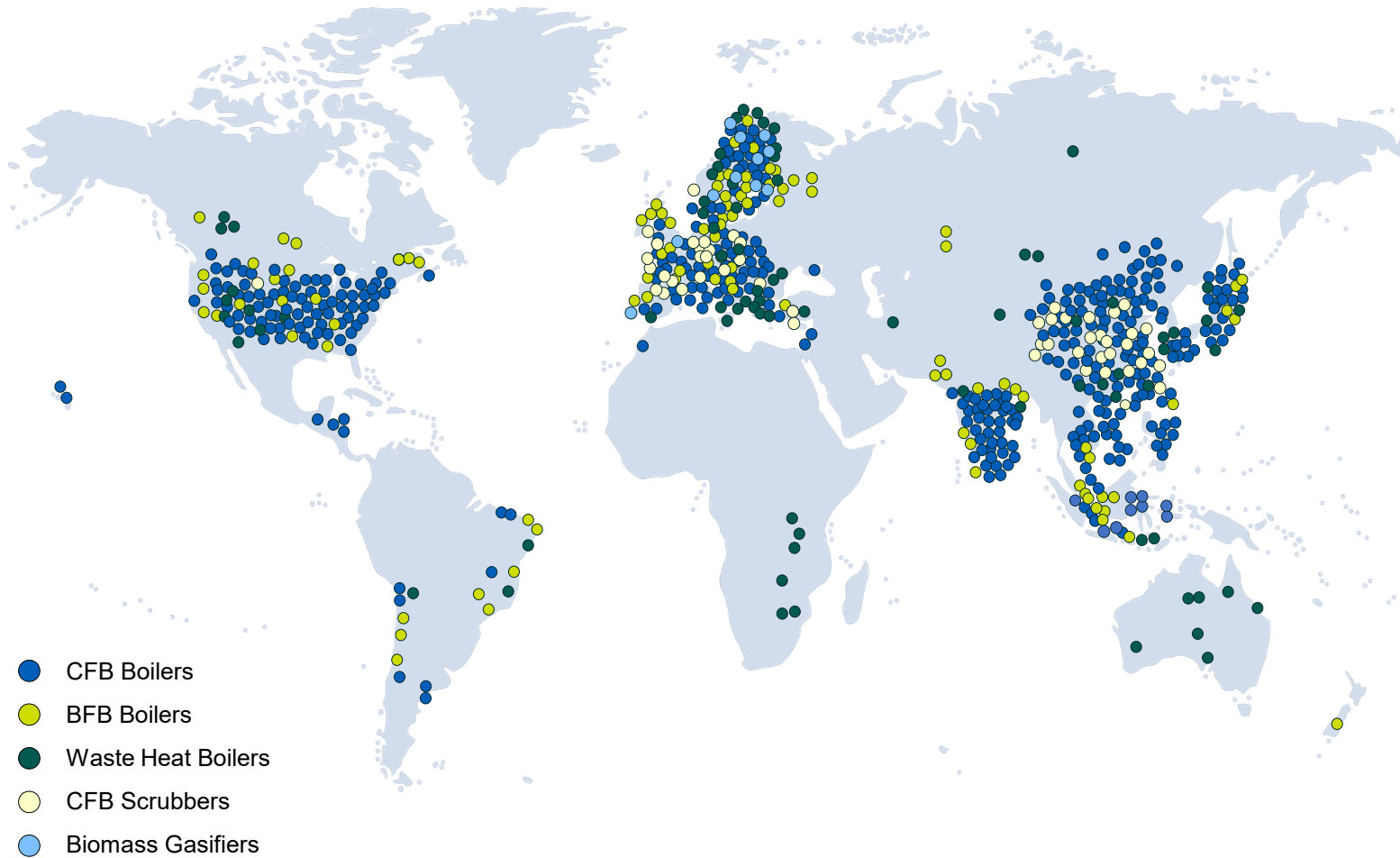


1891

Foster Wheeler founded



We have a strong list of references across Americas, Europe and Asia



900+

successful references worldwide

121

AMERICAS

354

EUROPE

453

ASIA

- Over 40 GWe of installed capacity,
- Unit sizes up to 550MWe
- Largest project 2,2GWe

SFW and SHI: Evolving together to enable a Net Zero future

From technology partnership to strategic cooperation

2017: A new chapter

- SFW joins the SHI Group
- Moving from traditional energy technologies to solutions enabling the global energy transition.

Today: One global team

- More than 20 years of collaboration in R&D, engineering and talent exchange.
- SFW has served as a key technology licensor and partner to SHI in energy solutions, helping SHI secure 50+ % of Japan's fluidized bed boiler market.

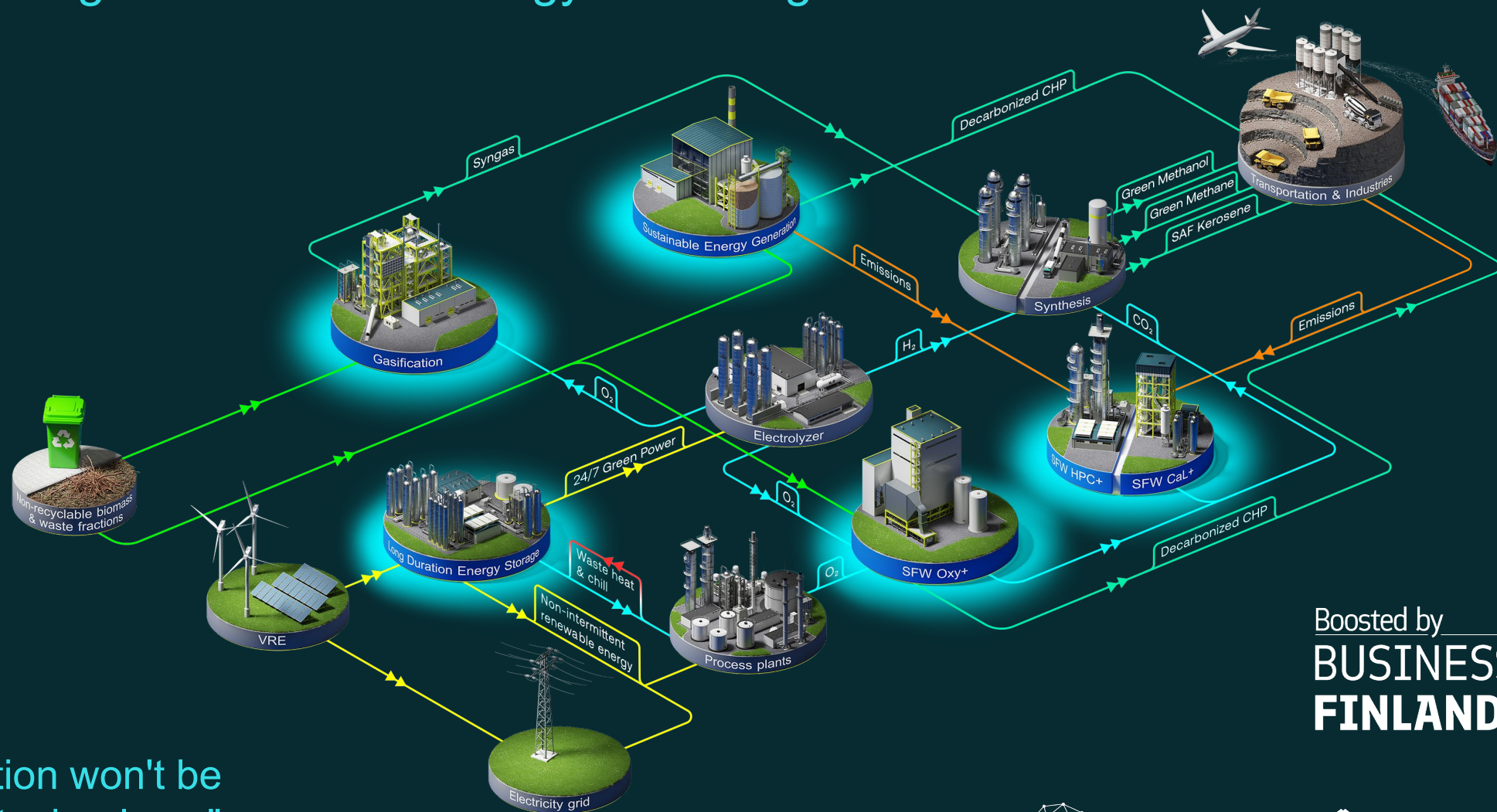
Tomorrow: Net Zero

- Long-duration energy storage
- Sustainable energy generation
- Carbon capture for e-fuels
- Gasification for SAF and Maritime green methanol (MeOH)
- Developing the **Net Zero Energy Ecosystem (NZEE)** connecting technologies, needed for tomorrow's energy systems



Building a Net Zero Energy Ecosystem

Filling in the missing links between energy technologies



"The energy transition won't be solved by a single technology."

Boosted by
**BUSINESS
FINLAND**



Liquid Air Energy Storage (LAES)



The zero-emissions long-duration energy storage solution

 Sumitomo Heavy Industries, Ltd.



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SHI/FW

What is Liquid Air Energy Storage (LAES) and why does the world need it?

LAES is a long-duration energy storage technology that *stores renewable electricity as liquid air and releases it when power is needed.*

As more wind and solar power are added to the grid, electricity production becomes less predictable. Power systems need ways to

- Store excess renewable energy for hours or days
- Reduce renewable energy curtailment
- Maintain grid stability and reliability
- Provide essential grid services such as inertia and short-circuit capacity

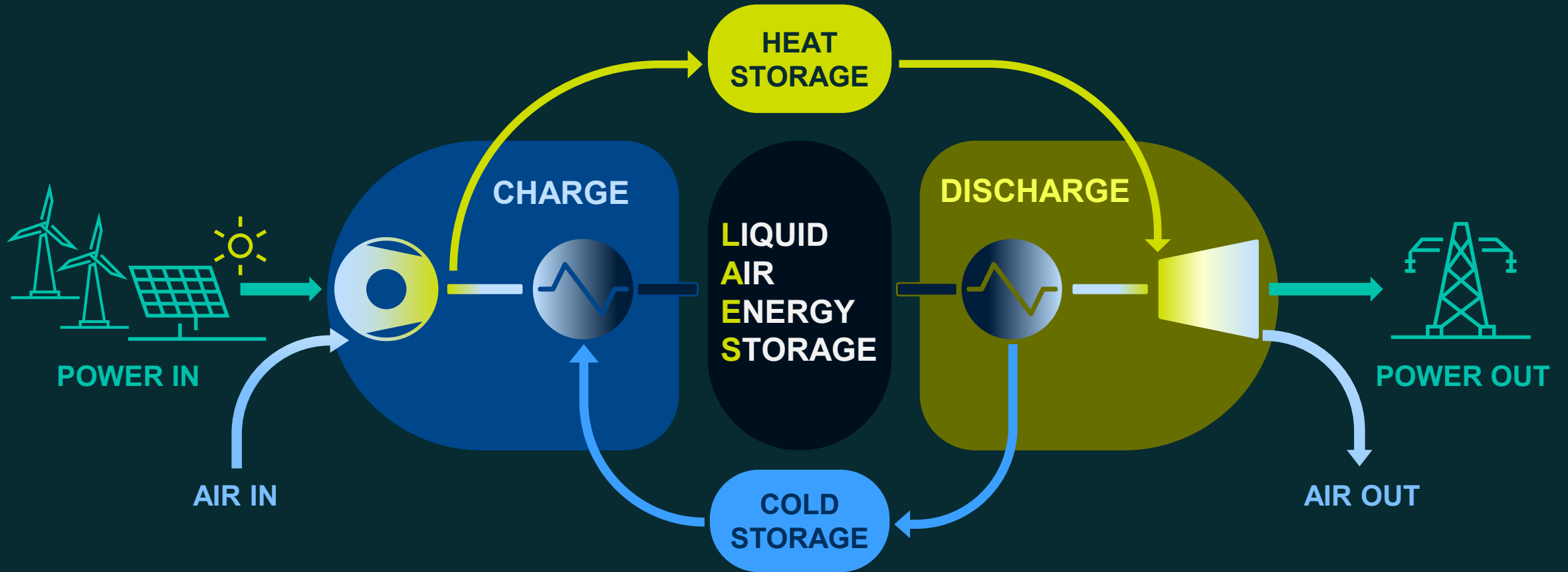
How LAES works

- Excess electricity is used to cool air into a liquid state
- Liquid air is stored in insulated tanks
- When electricity is needed, the liquid air is heated back into gas
- The expanding gas drives a turbine to generate electricity

Why LAES matters

- Long-duration energy storage (8+ hours and beyond)
- Uses normal, abundant air instead of critical minerals such as lithium, cobalt and nickel
- **Zero emissions during operation**
- 30-year lifespan with minimal degradation
- **Fully recyclable** system (unlike batteries)
- Provides grid stability services, including inertia and reactive power
- Supports a more resilient, renewable power system

The Liquid Air Energy Storage process



For more information visit: [LINK](https://www.shi-fw.com/our-solutions/energy-storage/)

<https://www.shi-fw.com/our-solutions/energy-storage/>

How SHI and SFW are advancing LAES:

Working together to commercialize LAES technology globally

SHI and SFW are helping solve one of the biggest challenges of the energy transition: enabling reliable, large-scale storage of renewable electricity while strengthening grid stability and reducing dependence on critical battery materials.

SHI and SFW

- Investor and technology partner of Highview
- Holds the LAES technology license
- Provides energy storage expertise and project execution capabilities
- Contributes plant design, instrumentation and equipment supply
- Supports customers with feasibility studies, engineering, procurement, construction and commissioning services

The world's first LNG-integrated LAES plant and Japan's first commercial LAES facility



- **Start-up:** 2025
- **Capacity:** 5 MW / 20 MWh
- **Storage duration:** Up to 4 hours
- **Site area:** 2,500 m² (0.62 acres)
- **Location:** Hatsukaichi, Hiroshima
- **Developer:** SHI in partnership with Hiroshima Gas Co., Ltd. with SFW contributing key engineering and equipment expertise

Summary

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Partnership turning individual technologies into complete decarbonization solutions

SHI

Scale and industrial platform

- Global industrial capabilities and market reach
- Investment, manufacturing and commercialization strength
- Japanese engineering discipline and long-term perspective

SFW

Leading energy technology

- Finnish roots in fluidized-bed energy technology
- Expertise in energy generation, storage, sustainable fuels and carbon capture
- Global project delivery and lifecycle services

TOGETHER

From technologies to integrated solutions

- Joint R&D, engineering and talent exchange
- Shared resources and coordinated global delivery
- A common pathway from innovation to scalable customer solutions

THE NEXT STEP Net Zero Energy Ecosystem (NZEE): connecting the missing links between energy technologies.



Advanced technologies and robotics

Welcome to the **robotics demonstration** and **site tour** at ITRL!

 Sumitomo Heavy Industries, Ltd.



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Thank you

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