

建構永續城市 HVAC勢在必行



Agenda

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- 01 Alfa Laval introduction
- 02 Cities we live now and then
- 03 Sector coupling
- 04 Real cases
- 05 Alfa Laval offering for Sustainable cities

Alfa Laval

Since 1883

A strong
local presence

37

Major production units

100+

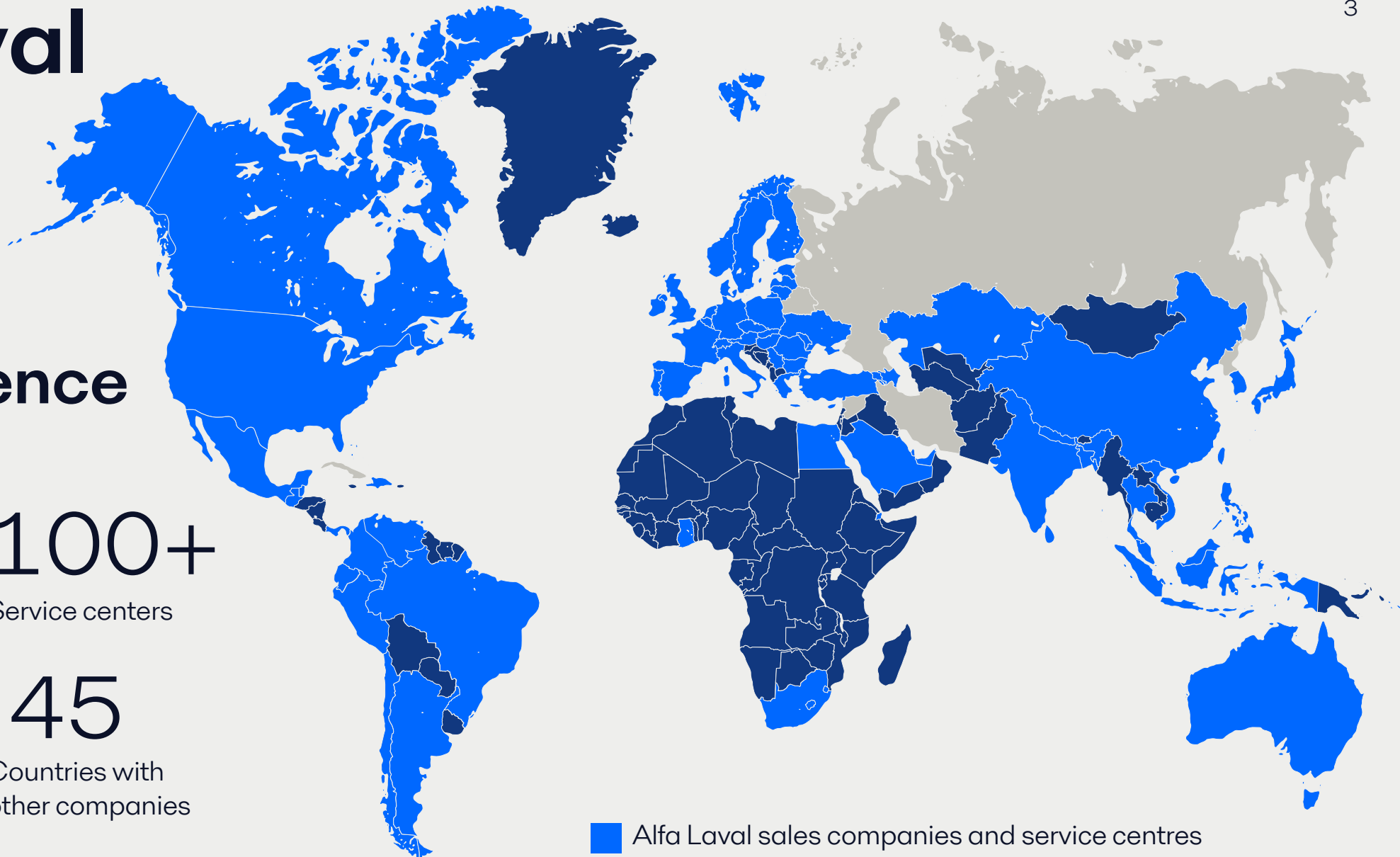
Service centers

55

Countries with
sales companies

45

Countries with
other companies



- Alfa Laval sales companies and service centres
- Countries without Alfa Laval representation
- Listed countries: No new orders allowed

Key technologies

4

Offered separately or combined into optimized solutions

Heat transfer

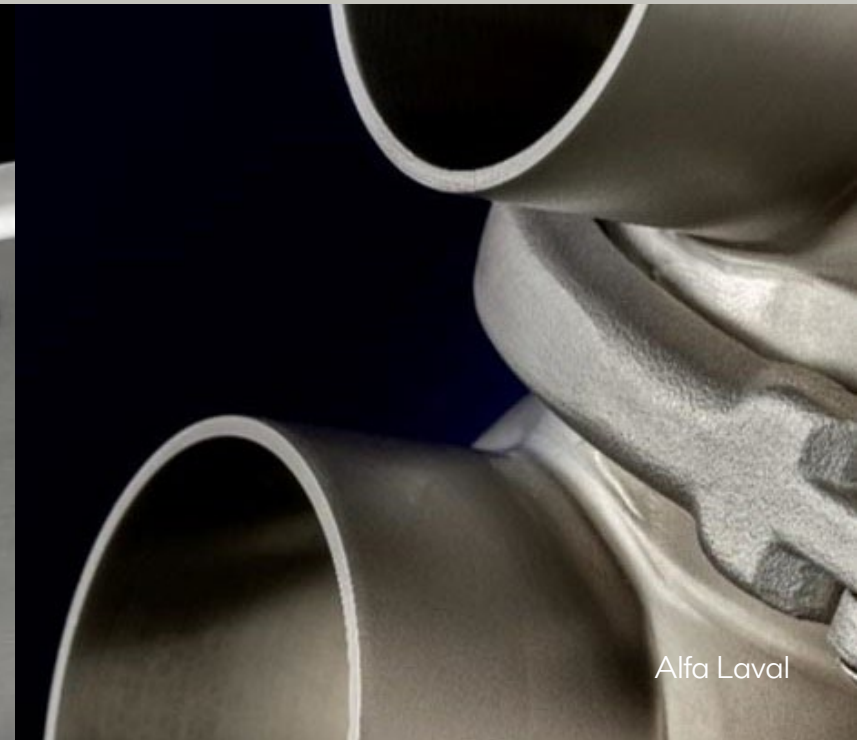
- Plate heat exchangers
- Spiral heat exchangers
- Shell-and-tube heat exchangers
- Thermal fluid systems
- Boilers

Separation

- High speed separators
- Decaners
- Membrane filtration

Fluid handling

- Hygienic and marine pumps
- Hygienic valves
- Mixers
- Tank equipment
- Installation material



The three divisions

Energy Division

Covers a wide range of industries, including semicon, HVAC, OGC, and biofuels, with a strong emphasis on energy efficiency.



Food & Water Division

Provides products, solutions, and systems specifically designed for food processing and water treatment.



Marine Division

Serving the marine industry since 1917, now offering a broad range of products, including environmental marine solutions.



Cities we live

3% of the world's cities occupy
Earth' land

60-80% of the world's cities
account for the **energy consumption**

70% of the world's cities account
for the **carbon emissions**





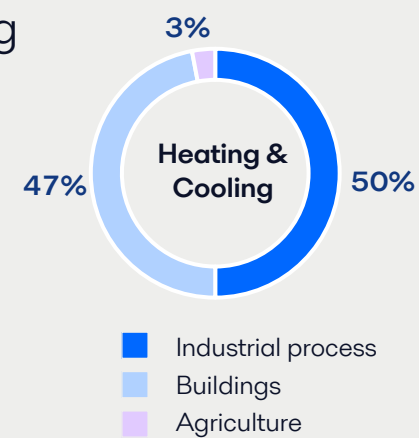
Renewable heat report, IEA, 2020

Heating and cooling's role in the decarbonisation

7 |

50% of EU's final energy consumption is going to the Heating and Cooling (H&C) sector

47% of Heating and Cooling Energy from Buildings



District heating and cooling in European Union 2022

Legislative landscape

National Determined Contribution

- Global pledge to double the implementation rate of energy efficiency and triple the renewables by 2030 at COP28
- Fit for 55 package and Energy efficiency directive
 1. Municipalities above 45 000 inhabitants are required to identify heating and cooling plans which will highlight opportunities for sector coupling and need for infrastructure development.
 2. Data centres with significant energy consumption will be obligated to monitor and report their energy performance.
 3. Carbon price on fossil fuels in buildings by 2027

The enabler for
Sustainability

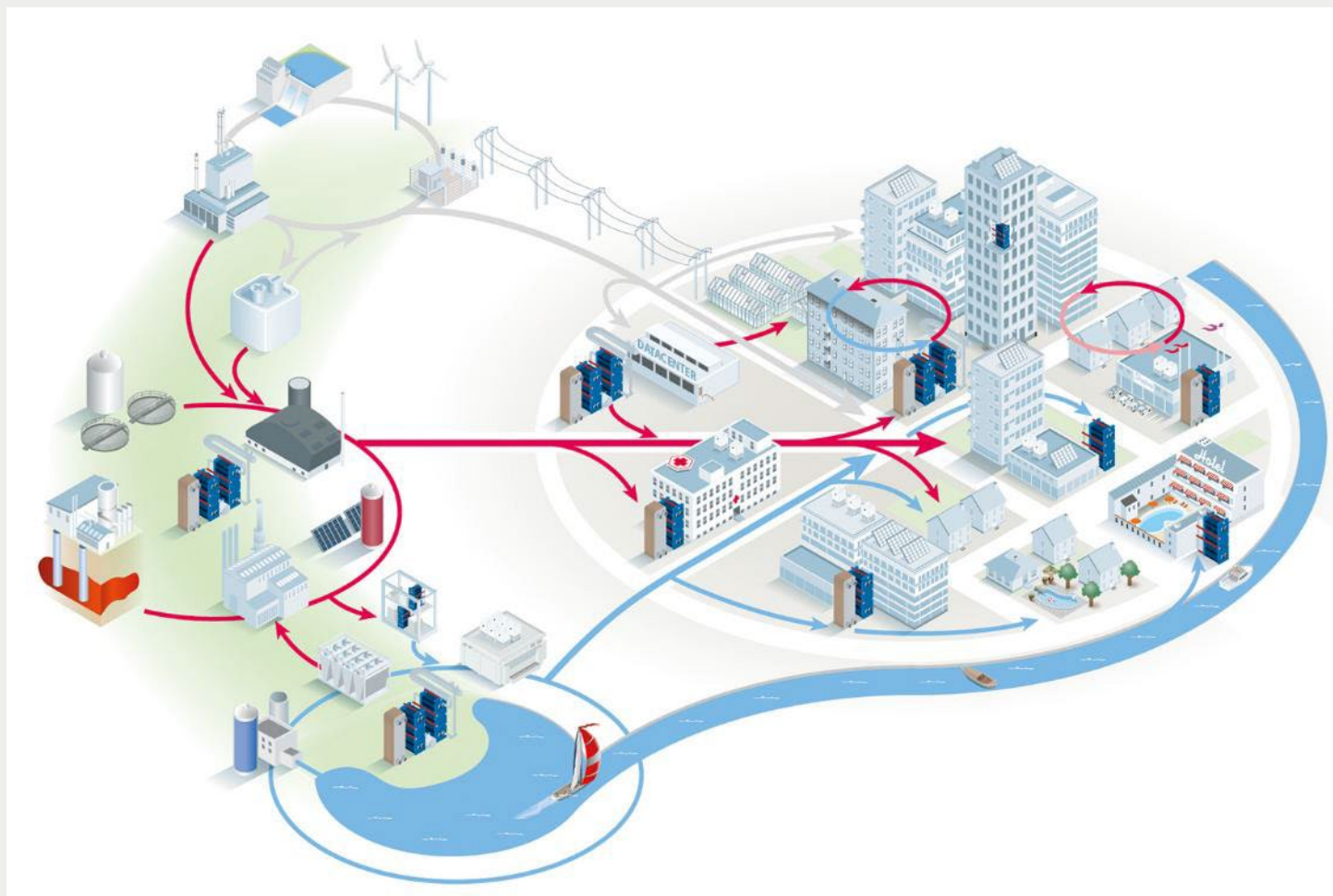
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Energy Networks
能源網絡

Sector Coupling
跨部門耦合

Sector Coupling

assists in reducing peak electrical demand



Flexible & efficient energy system

- District heating
- District cooling

New fossil free energy source

- Waste heat recovery
- Industrial heat pumps
- Geothermal heating
- Solar thermal heating

Energy efficient buildings

- Energy efficient buildings
- Energy efficient solutions for swimming pools, Spas & Sauna, Green houses
- Efficient air conditioning
- Individual heat pumps

Without action to address energy efficiency, energy demand for space cooling will more than triple by 2050 – consuming as much electricity as all of China and India today.

Source: The future of Cooling, IEA, 2018 and emphasized IEA Energy Efficiency report 2022

Cooling is the fastest growing use of energy in buildings

Paris' coolest attraction

The Louvre, Paris, France

With one of the world's greatest art collections, the Louvre's air conditioning is far from its main attraction. But this iconic building in the heart of the French capital is cooled by one of the world's largest district cooling systems. In fact, the 52 km underground network, which snakes beneath the city's historic centre, serves over 500 buildings.

Over the years, Alfa Laval has become a true partner and has contributed, thanks to its expertise and technology, to the performance of the D.C energy network



Energy efficiency



Resource savings



Emission savings



PHEs for one of the world's largest plants of its kind

Pearl Qatar, Doha, Qatar

The Pearl Qatar, located close to the centre of Qatar's capital Doha, is a man-made island spanning close to 4 million square meters. Its integrated district cooling (IDCP) plant - supplying all residential and commercial venues on the island - is the largest in the world of its kind. Thanks to a longstanding relationship with the leading district cooling supplier Qatar Cool, Alfa Laval was selected to supply the plate heat exchangers (122 units with 1.1 approach temperature) for this milestone project.



Energy efficiency



Resource savings



Emission savings





Deep lake water cooling

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Enwave, Toronto, Canada

Tap water collected from Lake Ontario at 4°C is also used to cool the city of Toronto by passing through 27 Alfa Laval AHRI certified GPHE. On the other side is the Toronto district cooling loop providing cooling to the city's inhabitants. Saving electricity (90,000 MWh), CO₂ (40K) ton and water (832 Million Liter) compared to traditional cooling towers.



Energy efficiency



Resource savings



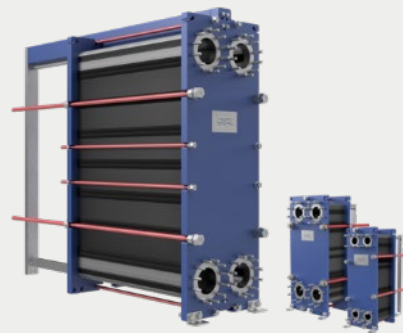
Emission savings



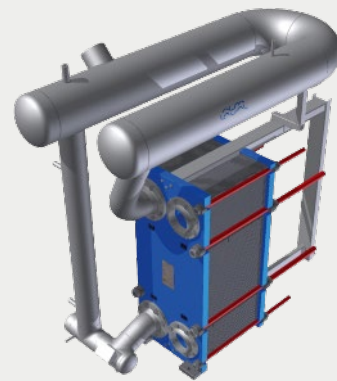
Alfa Laval offering for sustainable cities



Semi-welded plate heat exchangers



Gasketed plate-and-frame heat exchangers



Heat exchangers for industrial heat pumps using natural refrigerants



ALF filters



Brazen plate heat exchangers



Fusion-bonded plate heat exchangers



Alfa Laval Service Offerings

Concept Zero™ by Alfa Laval



A heat exchanger with
no fossil carbon
emissions by 2030.



IEA conference in Brussels_ Action Plan

1. Promote the adoption of energy efficiency technologies across industry.
2. Recognize energy efficiency as a key driver of productivity, decarbonization, and competitiveness.
3. Establish an “efficiency first” principle to ensure energy security and affordability.
4. Encourage long-term collaboration and investment across the value chain and with the public sector.

Alfa Laval's Role and Commitment

Supporting energy efficiency as a strategic priority

Each year, Alfa Laval helps customers save approximately 100 GW of electricity and 50 million tonnes of CO₂ emissions —
an amount equivalent to 550 times the company's own carbon footprint.



Let us be your partner!

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District heating



District cooling



Waste heat recovery



Solar thermal



Geothermal heating



Industrial heat pumps



Energy efficient buildings



...and other areas where
we together make our
cities more sustainable

聯絡我們

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Thank you

