Energy efficiency and buildings

Claes Ericsson
Segment Manager
Industrial Equipment
Energy efficiency potential in buildings

Source: IEA. Possible scenario in 2035 if we act on both implemented and announced policies.
Energy & buildings

Facts

* Buildings consume 40% of all primary energy
* They account for 25% of global CO₂ emissions

Implications

* Governments have made this a focus area to
  – meet international agreements, such as the Kyoto protocol, on energy savings
  – reach greater energy independence
Drivers
– EU legislation and directives

* 20 / 20 / 20 by 2020 and beyond

-20
Greenhouse gases

-20
Energy consumption

+20
Renewable energy

* EU – Energy performance directive buildings
  – Energy-efficiency norms on new buildings
  – Energy performance upgrades during renovations
  – Implementation of energy performance certifications
Drivers
– Rating systems in the U.S. and beyond

* LEED / U.S Green Building Council
  – Energy rating system for buildings
  – Increases property values
  – Growing outside the U.S

* Implications for heat exchangers
  – AHRI* certified heat exchangers
  – Alfa Laval a leading role from day 1

* Air-conditioning Heating and Refrigeration Institute
Life cycle thinking pays off

- Legislation is the driver
- Savings by green thinking
- AHRI guarantees right capacity
- Education is key
Alfa Laval’s offering and presence

Depth and width

-60°C
Scott Research Station, Antartica

+50°C
Burj Khalifa, UAE

+50°C
Mecca Royal Hotel Clock Tower, Saudi Arabia

Single-family homes, Municipality of Hjo, Sweden
The principle of district energy

Common primary heating sources

Industrial waste heat
Renewable energy
Energy from waste
Fossil fuels, peak load
Bio fuels

Distribution of energy

Combined heat and power
Technology to save energy

- From individual to central heating systems
- Optimizing use of different heating sources to generate savings
- Heat exchangers are key
Two cases

– Efficient heating today and tomorrow

Stockholm, Sweden
✓ 20% energy saving

Roeselare, Belgium
✓ 50% energy saving
Conclusions

✱ Strong drivers, such as regulatory pressure, in place
✱ The industry is dependent on support from authorities to speed up
✱ Alfa Laval is the global leader within our chosen applications