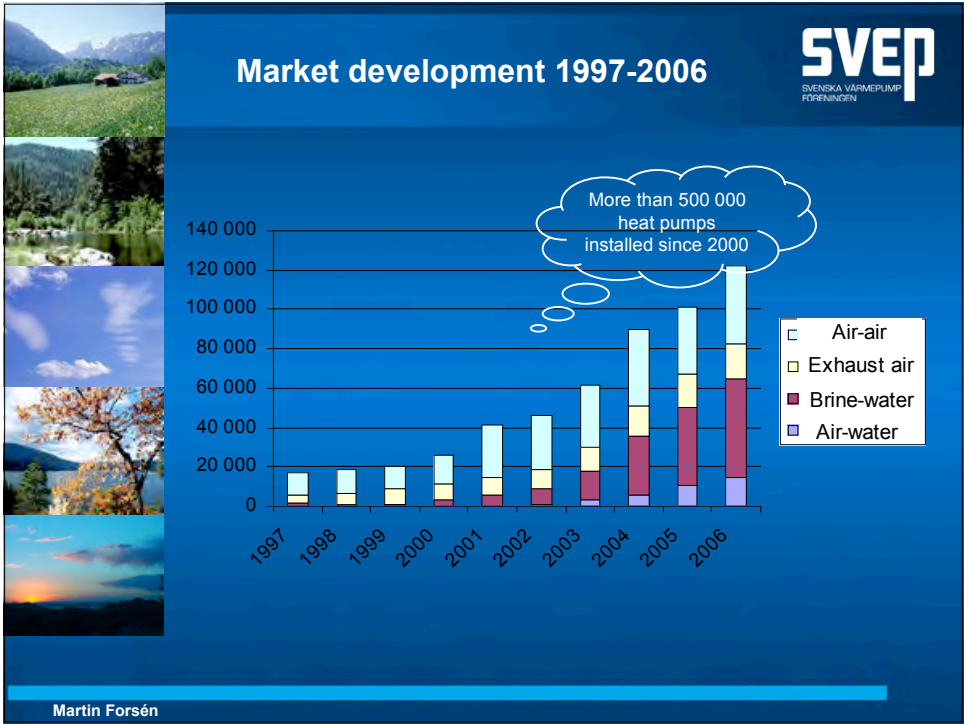






Martin Forsén
 Swedish Heat Pump Association
 European Heat Pump Association



Martin Forsén



SVEP
SVENSKA VÄRMEPUMP
FÖRENINGEN

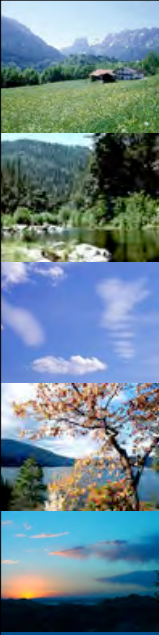
Market development 1997-2006

Heating of buildings from a Historical perspective

Solid fuel Oil Electricity Biomass
 CHP
 Heat pumps

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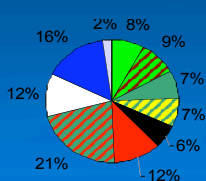
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Heating of single family houses in Sweden 2006

There are now Heat pumps in more than 30 % of the Swedish houses



■ Direktverkande el (8%)	■ Luft-luft vp/direkt el (9%)
■ Direct electricity 7%	■ Air-air heat pumps/direct el 9%
■ Water based el (2%)	■ Exhaust air heat pumps (7%)
■ oil (21%)	■ Biomass boilers (12%)
■ Våtska-vattenvärmepumpar (16%)	■ Distric heating (12%)
■ Brine-Water heat pumps	■ Air-water heat pumps (2%)

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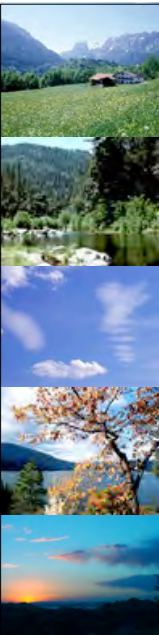


Market players




<p>Brine-water</p> <ul style="list-style-type: none"> IVT NIBE Thermia CTC-Enertech <p>Air-water</p> <ul style="list-style-type: none"> CTC-Enertech IVT Thermia NIBE Stiebel-Eltron Viessmann 	<p>Air-air</p> <ul style="list-style-type: none"> Panasonic Sharp Mitsubishi Daikin Fujitsu <p>Exhaust air</p> <ul style="list-style-type: none"> IVT Autoterm NIBE
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Distribution channels



- Wholesales
- Tight network of retailers
- Installers
 - ≈ 3000 companies
 - a large majority of small companies (1-4 employees)
 - ≈ 1000 companies dedicated heat pump installers
- Drilling companies
 - ≈ 600 companies

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Costs for the segment single family houses

Complete installation including unit, installation + heat source

Vertical ground source
 $\approx 13\ 000\text{-}20\ 000$ Euro

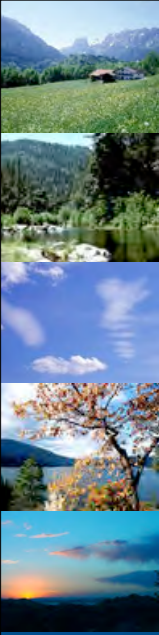
Horizontal ground source
 $\approx 10\text{-}20\%$ less than vertical

Air-water heat pump
 $\approx 10\ 000\text{-}15\ 000$ Euro

Air-air
 $\approx 1500\text{-}2500$ Euro

Drilling costs
 $\approx 20\text{-}25$ Euro/m

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Energy prices

Electricity
 $\approx 10\text{-}13$ Euro cents/kWh

Oil
 $\approx 10\text{-}13$ Euro cents/kWh_{heating}

Pellets
 $\approx 5\text{-}7$ Euro cents/kWh_{heating}

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Opportunities

- Focus on energy efficiency within the building sector
Energy performance of buildings directive
- Focus on the use of renewables
Upcoming directive on the use of renewables
- Increasing demand for space cooling

Threats

- Major changes in energy price ratios
- Heat pumps not defined as renewable energy technology

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Barriers

Technical

Temperature levels

Economical

Investment costs

Legislative

Strict building regulations

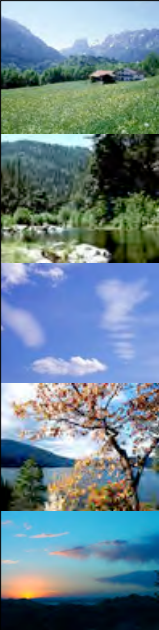
Technical know-how

Competence of installers and architects


Technology awareness

Public
Installers
Politicians, energy advisors and architects

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Swedish Heat Pump Association
Founded 1981



- **Manufacturers and importers**
21
- **Installers/retailers**
715
- **Other companies with interest in the HP market**
4

740 member companies at present



Swedish Heat Pump Association



- **Annual turnover 600 000 Euro**
- **4 People employed**

Overall aim

To promote the heat pump market on national and European level



Activities



- **Dissemination of information**
Public meetings
Education of energy advisors
Publications
- **Training of installers**
EU-CERT
- **Technical standardisation**
Guidelines for design of boreholes,
ground collectors, brine systems
- **Quality seal**
- **Lobbying activities**
National and European level



Activities



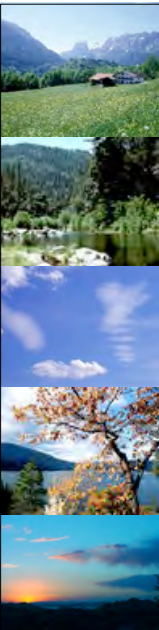


Activities




- Administrate sales statistics
- Support for customers and installers
- Research and promotion projects
- Administrates consumer complaints board
- Homepage

At present \approx 400 uniqe visitors per day
During fall \approx 1200-1600 visitors per day



Renewable energy



Heat pumps are providing 12 TWh renewable
Energy per year

Wind power 1 TWh

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