

## Heat pumps for heating and cooling in Sweden market experiences and lessons learned

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## Where's the application

Domestic single family houses  
Small units, appr. 2- 15 kW  
Mainly heating



Multifamily houses  
Larger units, appr. 20-100 kW  
Mainly heating



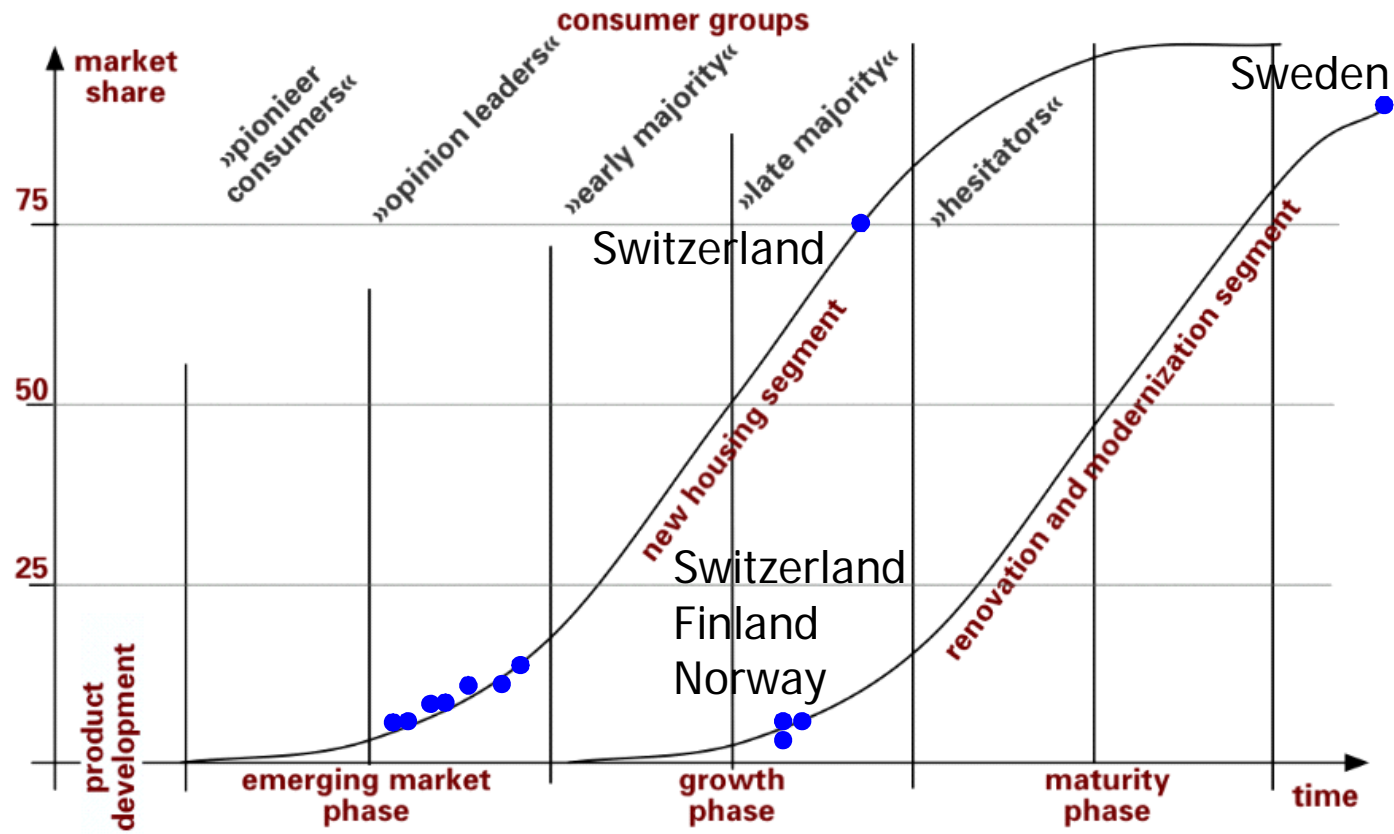
Commercial buildings  
Offices, schools, sport centers, etc.  
Combined heating and cooling



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# Market maturity GSHP in Europe



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## Positive conditions for HP:s in Sweden

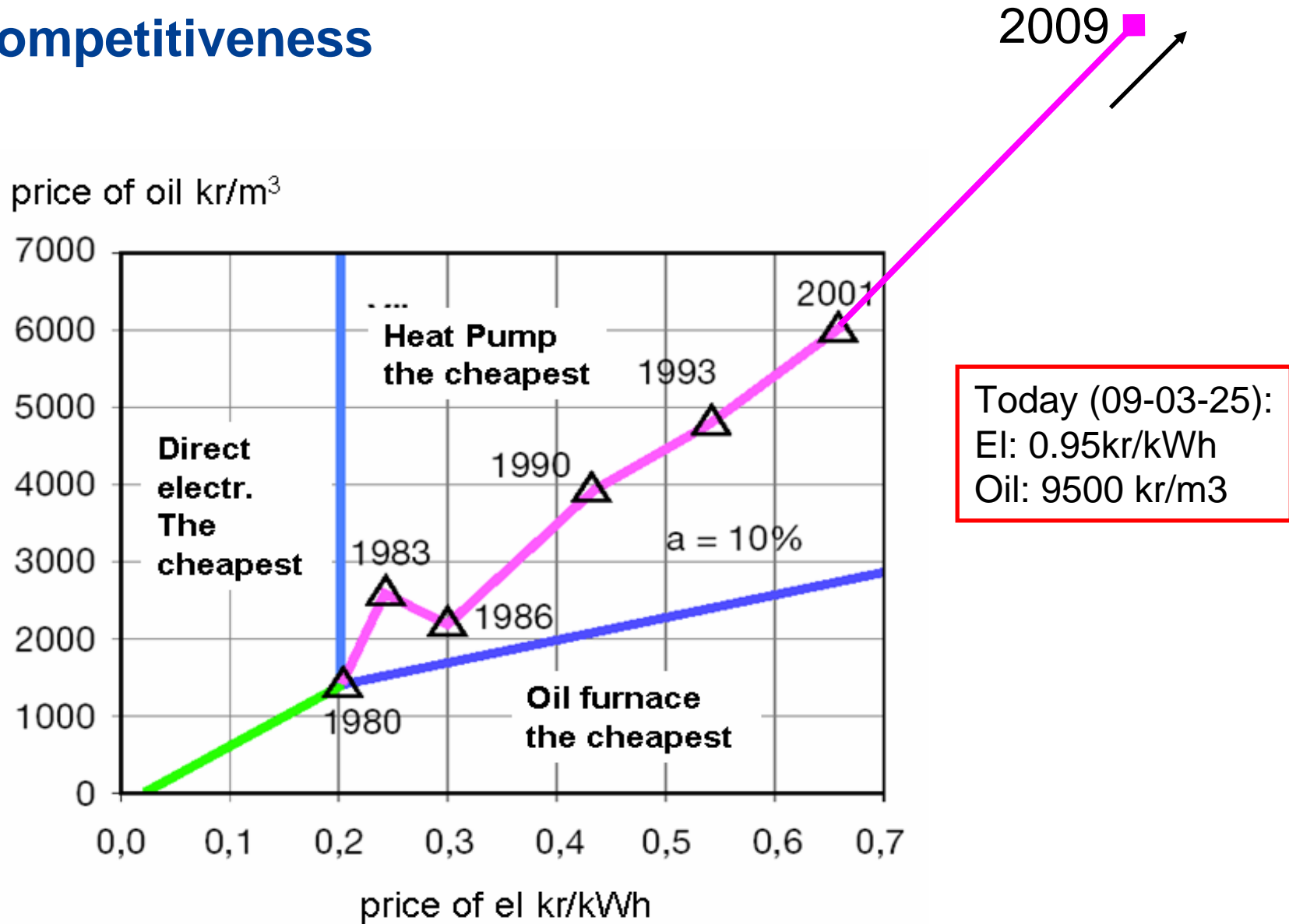
- Cheap electricity, hydro & nuclear
- Rock properties → no grouting necessary in most of SE
- Hydronic heating system used in most houses
- No gas grid
- No need for permission to drill
- Subsidy scheme



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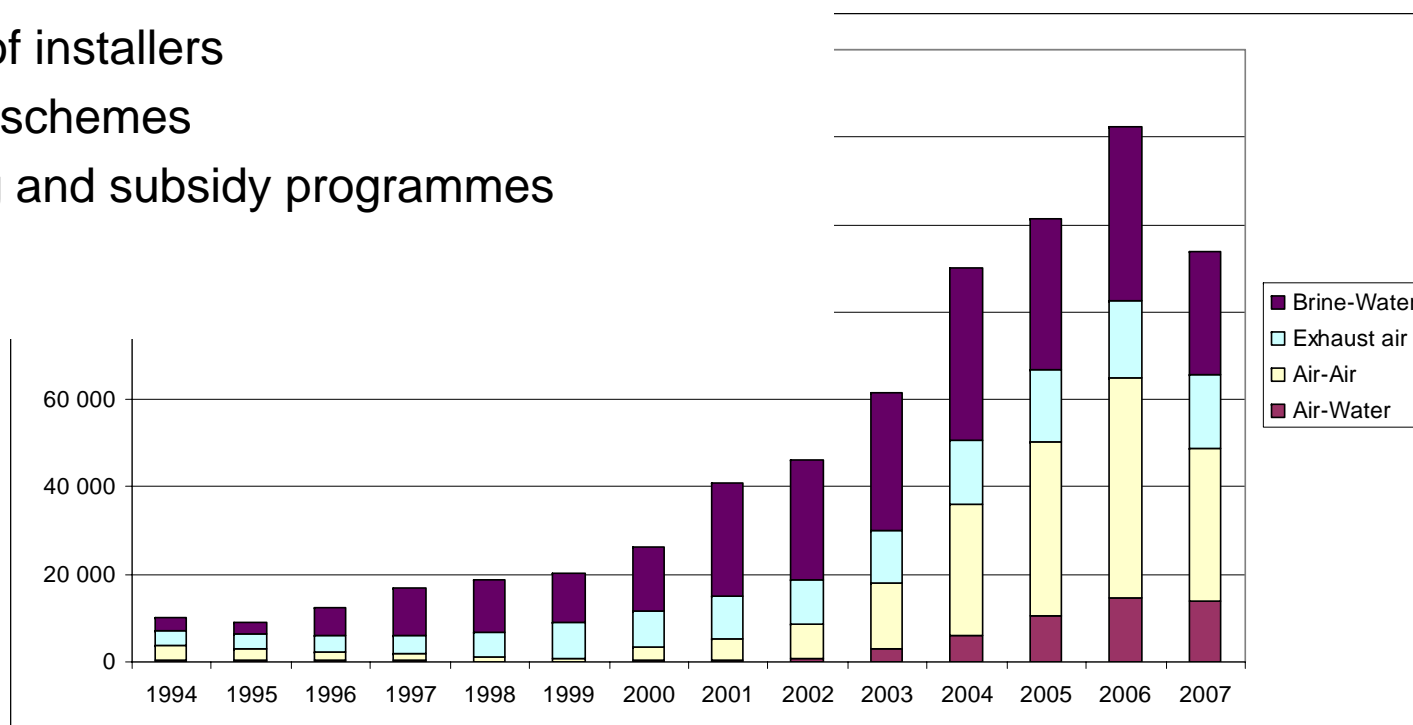


# Competitiveness



# Market experiences

- R & D
- Technology procurement competition
- Promotion activities
- Energy advisors
- Training of installers
- Labelling schemes
- Financing and subsidy programmes



## R & D in Sweden

- R&D in close collaboration with industry and government
- Components, refrigerants and systems
- Ground coupling related
- Multiple heat sources



### Lessons learned:

- many manufacturers can be a great help, - and a large problem
- Industry participating → “useful research”, product oriented
- Very short payback on research investments!!



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# Technology procurement competition



- Competition winner was awarded an order of XX heat pumps

+	-
Many companies evolved	Many companies went bankrupt
Technically advanced solutions	Technically advanced solutions
Solutions adapted to Swedish conditions	
Market push	

Lessons learned:

- Make a good specification of what you expect from the winner

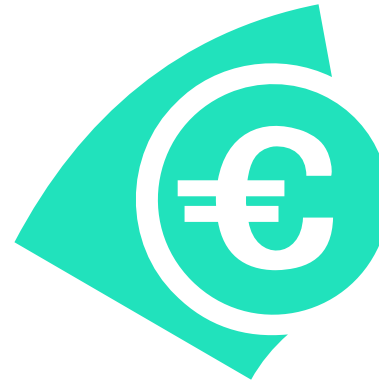


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## Promotion activities

- Energy advisors
- TV commercials
- Newspaper ads
- Road shows
- Fairs
- Webb sites



- Quite traditional channels, mainly targeting house owners
- Main message: Save money  
..and the environment!



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# Energy advisors

## 1. Communal advisors

- No commercial coupling
- Give general advice on how to save energy
- Can make individual reviews and propose specific actions

## 2. Interest association for people working in the field. (communal can be members)

### Lessons learned:

- Give advice that suits the specific situation
- Not only Heat pumps in focus



# Training of installers

- Long tradition of training and certification of installers (SVEP course)
- Now, EUCERT by EHPA is the recommended training by SVEP (the Swedish heat pump association)
- Today 8 EU countries use EUCERT, and more are on the way.

Lesson learned:

- Trained installers lead to better system design and fewer complaints



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# Labelling schemes



SP has own labelling scheme, the “P” label

Requirement on performance

Requirement on manuals

Required manufacturer production inspection



EHPA has the DACH-label

Requirement on performance

Requirement on manuals

Lesson learned: By purchasing a labelled product, there is a minimum heat pump quality



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## Financing and subsidy programmes

- Bank loans in Sweden quite easily available for energy conservation measures (house as security)
- Insurance packages, at least 6 years on compressor and 2+ years on system
- Subsidy schemes from time to time, last time up to 3 000€
  - Market “died” before introduction of programme
  - When programme was in place, installers were short of people to meet demand

### Lessons learned:

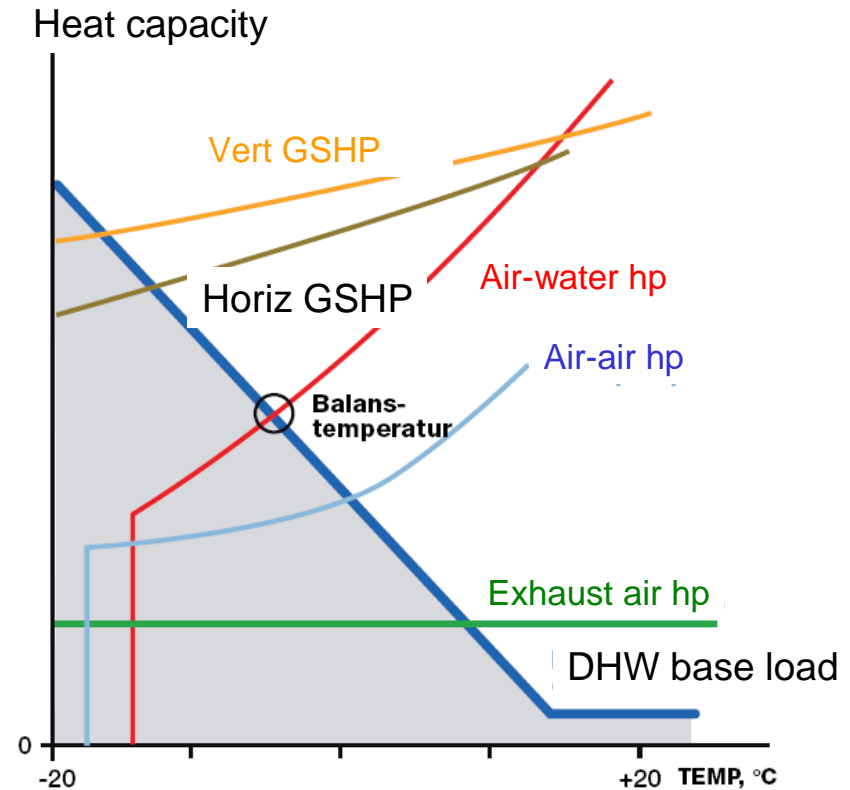
- Banking sector important to grant loans to meet first cost
- Plan subsidy schemes carefully



# The future for GSHP?

Answer: Definitely YES!, but...

- Need for increased knowledge in all stages, follow-up
    - Manufacturing, drilling, installation
  - Go for robust systems – QA system in place
  - Design the heat pump **system** well! (HP + distribution system)
- A good compromise between simplicity, reliability, efficiency and overall economy





**Thank you for listening!**

[www.proheatpump.eu](http://www.proheatpump.eu)



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