



Heat Pump incentive schemes: Experiences from EU Member States

Heat pumps – the renewable way forward
17.11.2010 | Brussels

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European Heat Pump Association EEIG (EHPA)

Vision and strategic objectives

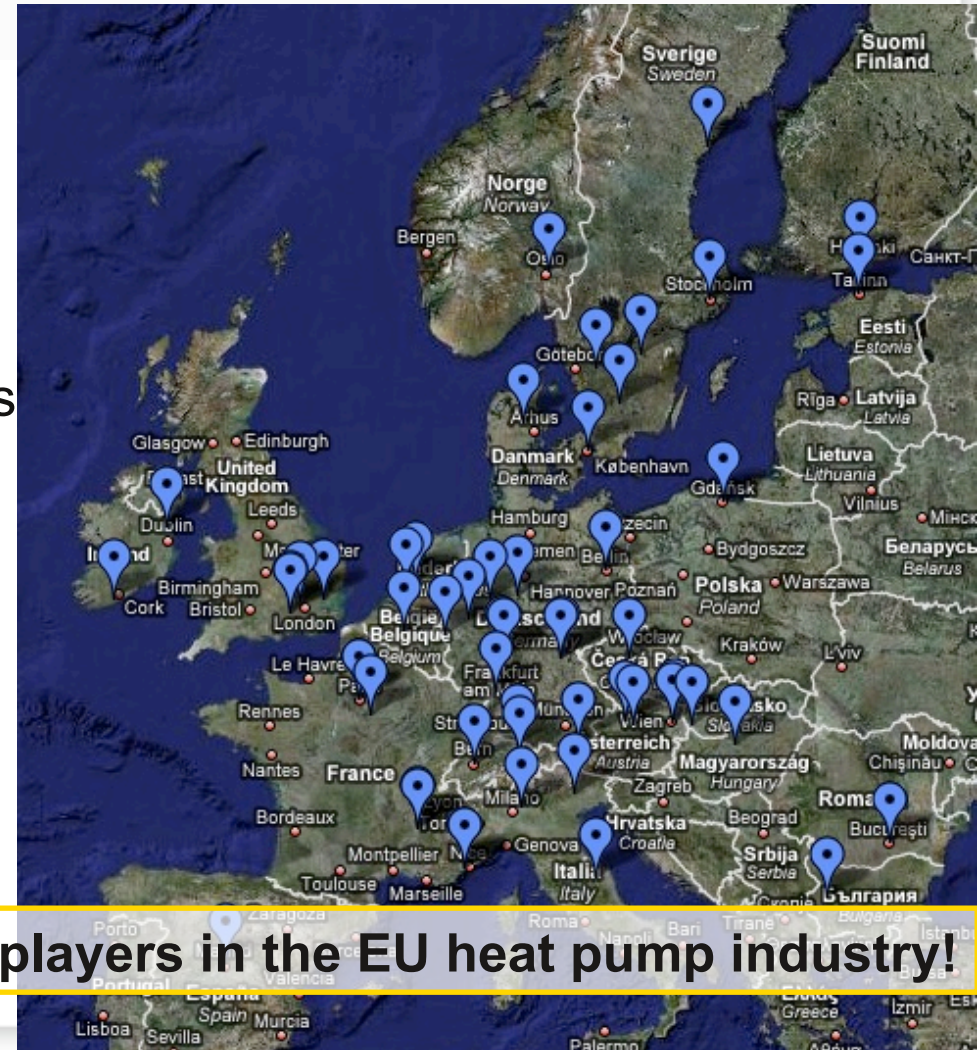
Vision: Establish Heat Pumps as a **core technology** for the efficient, reliable and cost effective provision of heating, cooling and hot water **from renewable energy sources** for residential, non-residential and industrial applications **in all European countries.**

Major objectives

- **Promote** awareness and proper deployment of heat pump technology
- **Disseminate** information & educational material
- **Support** European, national and local authorities in meeting their policy objectives on energy efficiency, the environment and security of energy supply.
- **Undertake** strategic studies with the EU and other interested bodies to develop the heat pump market
- **Facilitate** heat pump related research and development
- **Provide** technical and economic information to the market
- **Coordinate** and develop European labelling and certification initiatives

European Heat Pump Association (EHPA)

- **90 members from 21 countries (status 8/2010)**
 - Heat pump manufacturers
 - Component manufacturers
 - National associations
 - Consultants
 - Research & test institutes
- **EU-wide representative of heat pump industry**
- **Registered in Brussels**



EHPA represents the majority of players in the EU heat pump industry!

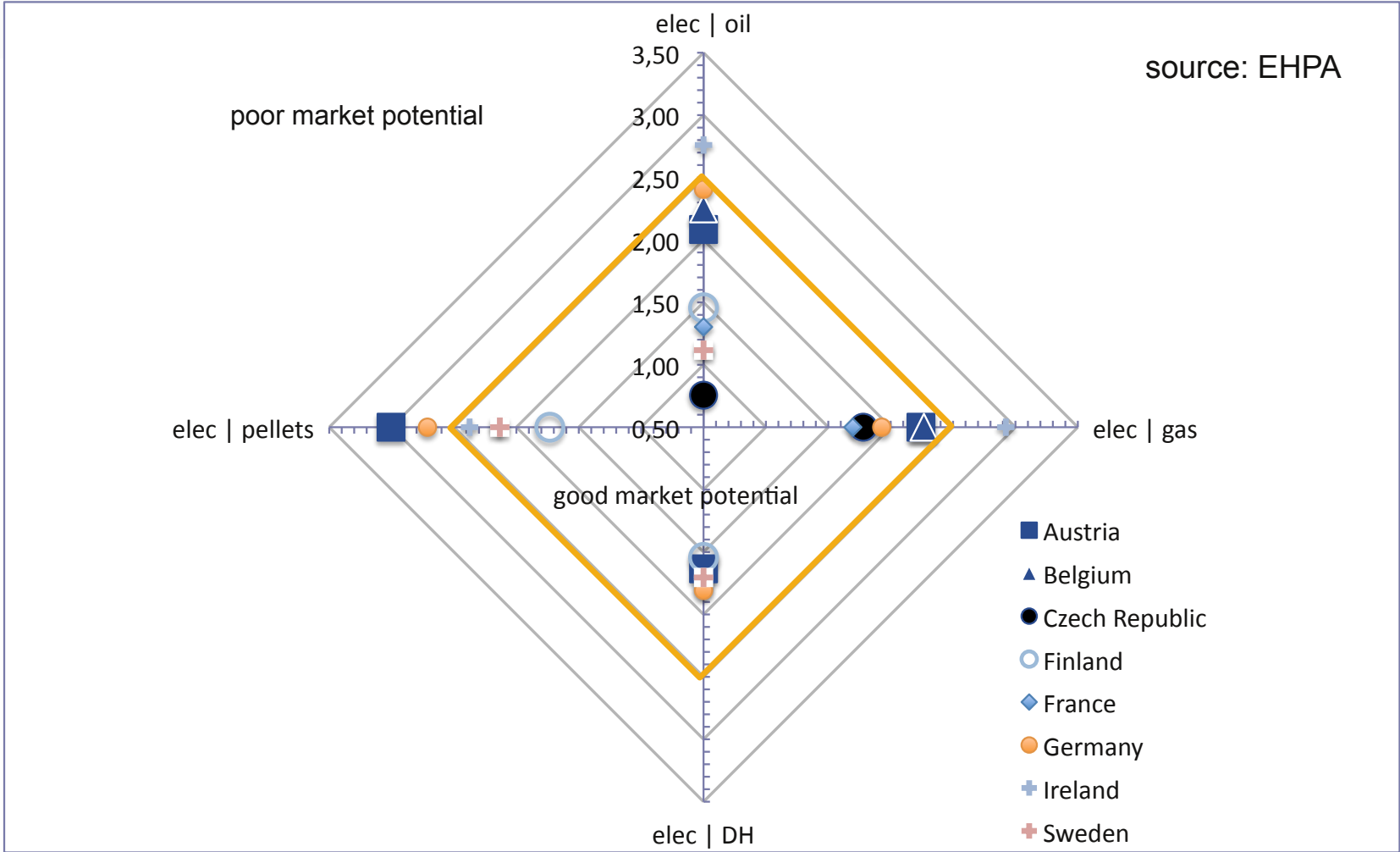
Incentive schemes: key factors for success

- **Economic feasibility**
 - Energy price levels
 - Energy price ratios
 - Price level of technology (in absolute and relative terms)
 - Quality of products
 - Efficiency of products
 - Result: impact on total cost of ownership
- **Image and technology awareness**
 - Public
 - Installers, architects and planners
 - Policy makers, politicians and decision makers

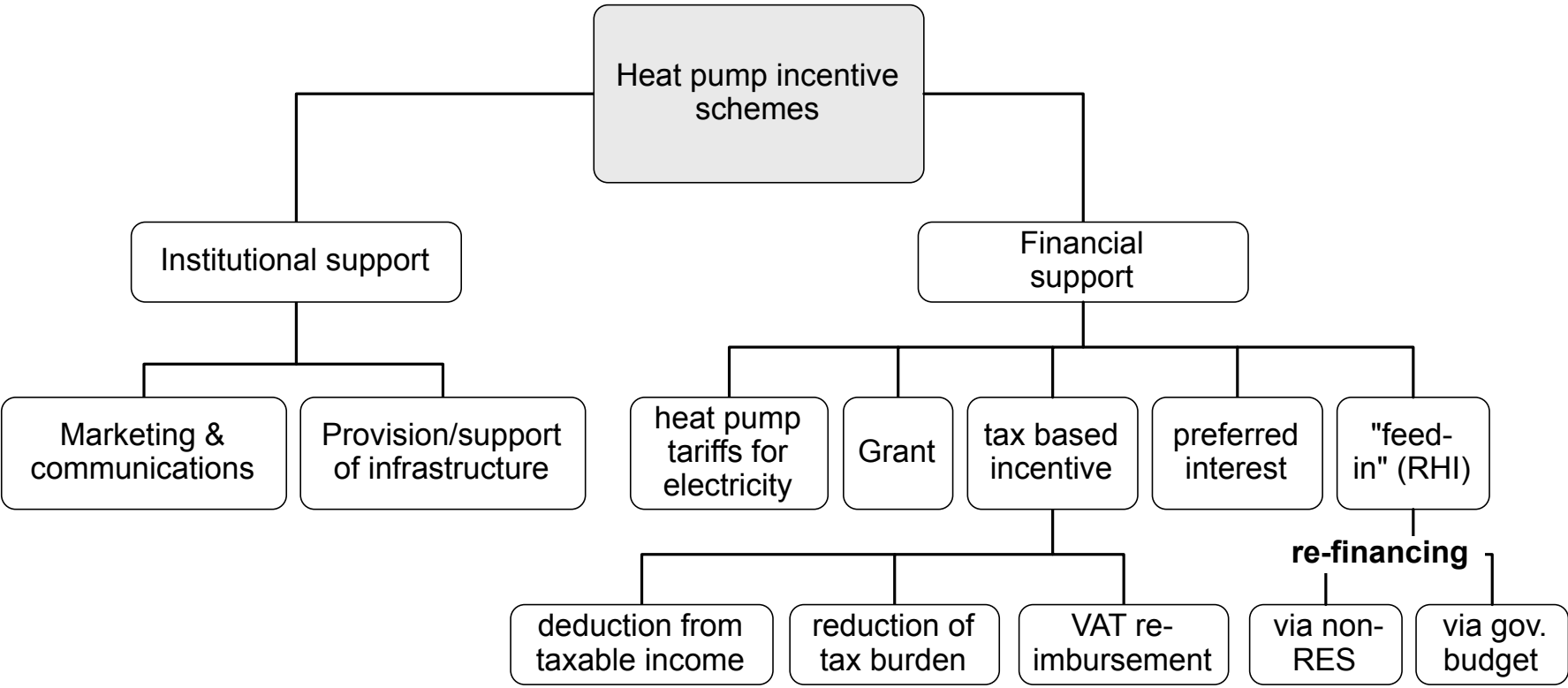
Energy price ratio

- **Ratio between the price of 1 kWh of electricity and the price of 1 kWh of heating produced by a competing technology.**
- **Indicates the competitiveness between different alternatives**
- **Sets the minimum requirement of SPF in order to lower the energy bill**
- **Larger impact, if investment cost are similar**

Energy price ratios | 2009 prices



Incentive schemes



source: EHPA

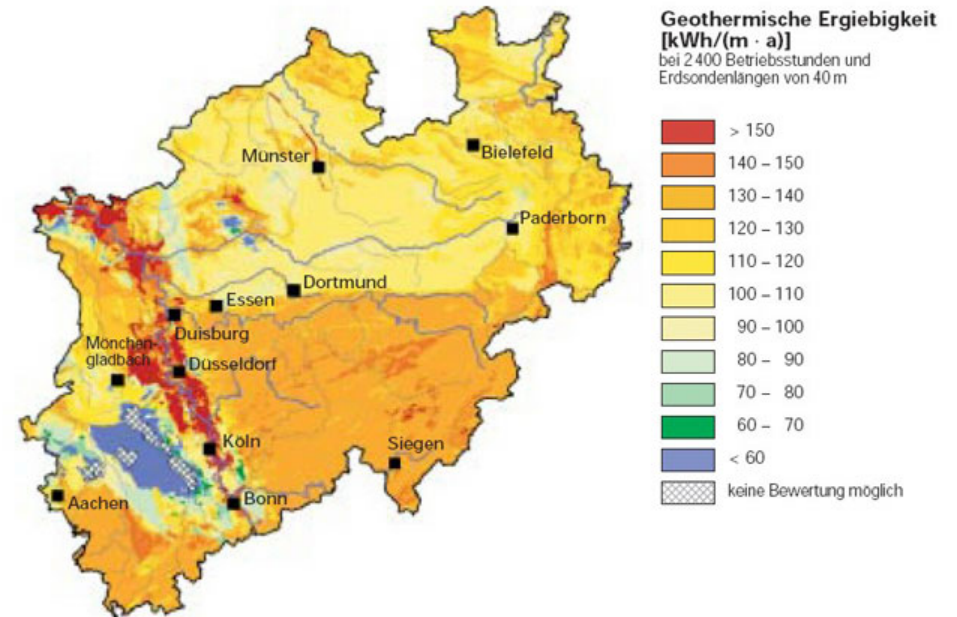
Example #1: Provision of information; provision of infrastructure

- **Ministry for the environment website on renewables**
<http://www.erneuerbare-energien.de/inhalt/4590/>
- **Heat Pump Market Place NRW**
(State of North Rhine-Westalia)
- **Information platform jointly financed by industry and the state (50:50)**
- **Provision of documents**
 - Market guide
 - Planning guide for heat pump installations
 - Information & decision making support for housing industry
- **Information dissemination at fairs and events**
- **More Info in German:**
<http://www.energieagentur.nrw.de/waermepumpen/>



Example # 2: Map of geothermal potential

- **Geological survey of NRW**
- **Detailed map of the states geothermal potential**
 - Available as CD-ROM (basic and professional version)
 - Location check online
- **Information on all drillings done in the state**
- **Offered by other states: Bavaria, Baden-Wuerttemberg, Saxony**
- **More Info in German:**
http://www.gd.nrw.de/g_details.php?id=1700/
http://www.gd.nrw.de/l_ddabo.htm



Example #3: Preferred interest

Example #4: Special tarif

- **Preferred interest**
 - Private or government controlled bank offering preferred financing conditions (interest, lower security requirement, larger loan)
 - Usually under conditions with regard to a) use of a certain technology, b) achievement of an advanced level of energy efficiency, or c) accomplishment of certain measures
- **Special tariff for electricity for heat pumps**
 - 40 to 60% reduction over usual tariff
 - utility reserves the right to switch of heat pump (usually 3x2 hours a day) => advanced load balancing
 - Common in Germany, Austria
 - Sometimes even offered with 100% green electricity

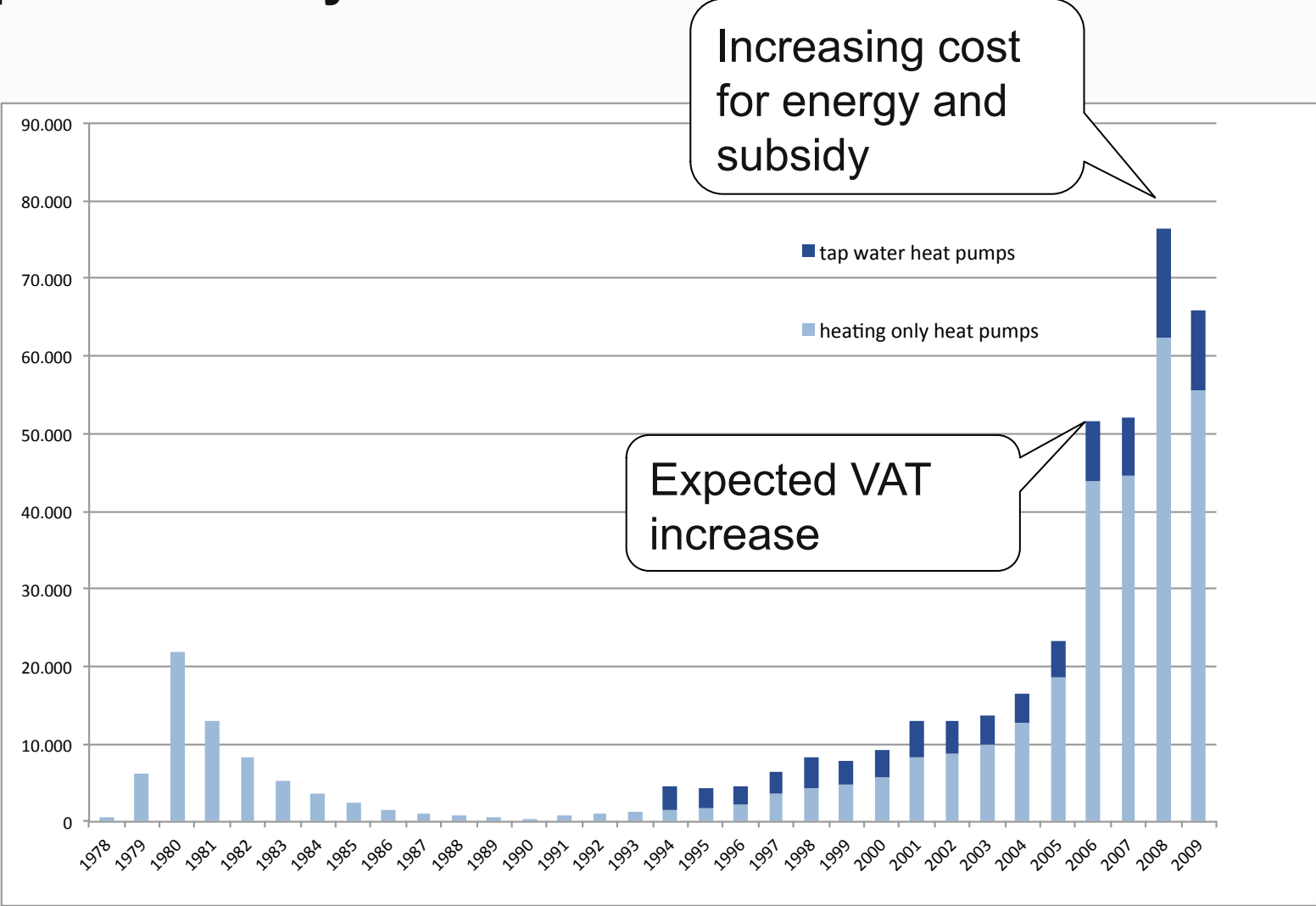
Example #5: Direct Grant in Germany

- In operation since 2008
- Applicable to new and renovated buildings
- Requirement: min. COP according to VDI 4650

	New houses built in 2009 or later	New houses built before 2009	Renovation
Ground-coupled heat pumps • Water/water • Brine/water	<ul style="list-style-type: none"> • 7,50 €/m² of inhabited area max. 1.500 € for each apartment • Houses with more than two apartments: max. 7,5 % of the net-investment for the heat pump 	<ul style="list-style-type: none"> • 10 €/m² of inhabited area max. 2.000 € for each apartment • Houses with more than two apartments: max. 10% of the net-investment for the heat pump 	<ul style="list-style-type: none"> • 20 €/m² of inhabited area max. 3.000 € for each apartment • Houses with more than two apartments: max. 15% of the net-investment for the heat pump
Air source heat pumps	<ul style="list-style-type: none"> • 3,75 €/m² of inhabited area max. 637,50 € for each apartment • Houses with more than two apartments: max. 7,5 % of the net-investment for the heat pump 	<ul style="list-style-type: none"> • 5 €/m² of inhabited area max. 850 € for each apartment • Houses with more than two apartments: max. 10% of the net-investment for the heat pump 	<ul style="list-style-type: none"> • 10 €/m² of inhabited area max. 1.500 € for each apartment • Houses with more than two apartments: max. 15% of the net-investment for the heat pump

Updated in 2010

Impact Germany

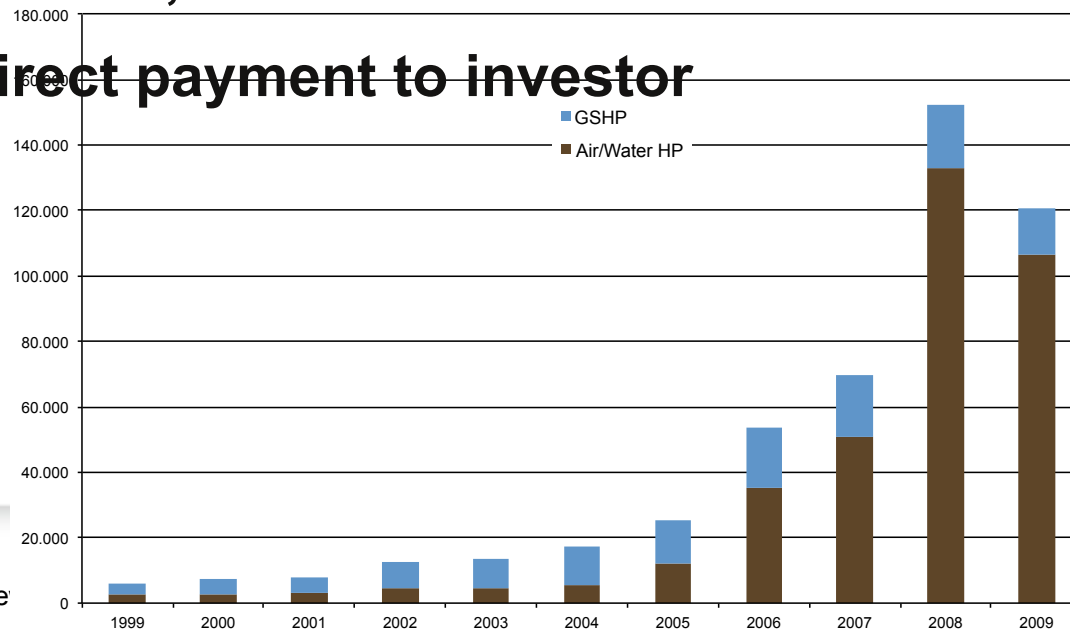


source: German Heat Pump Association (BWP)



Example #6: Tax based incentive in France

- **Basis: Cost of heat pump unit**
- **Subsidies vary according to year of purchase and type of HP, min. COP applies**
- **2009: 40% of cost for GSHP or air-water unit deductible from income tax burden, max. 8.000 €/adult**
- **If no tax is paid: direct payment to investor**



Example #7: Incentive development in Ireland

- Greener homes scheme for residential buildings(s. table)
- ReHeat for commercial buildings (up to 30% of investment)
- Aim: increase the uptake of renewables in the heating of buildings: GSHP, Biomass, Solar thermal
- 2008: RES in new buildings mandatory!
- Responsible: Sustainable Energy Authority of Ireland (www.seai.ie)

	GHGS I	GHGS II	GHGS III (only retrofit)
Air-water units	4.000	2.000	2.000
Ground source (horizontal)	4.300	2.500	2.500
Ground source (vertical)	6.500	3.500	3.500
Water-water	4.300	4.300	2.000

Example #8: The UK renewable heat incentive (RHI)

- **Guaranteed compensation per kWh_{thermal} of (renewable) heat produced (€/kWh_{th}), fixed duration, ie 20 years**
- **(usually) independent of the tax system and thus independent of govt. budget consideration**
- **Applicable to all RES-technologies: ASHP and GSHP are included**
- **Assessment of generated energy either “measured” or “deemed”**
- **Equivalent to feed-in tariffs in the electricity sector**
- **Currently under discussion, starting date 2011, back payment from july 2009 onwards.**

Example #8: proposed table for RHI

Solid biomass	Up to 45kW	9	15
Biodiesel (restricted use)	Up to 45kW	6.5	15
Biogas on-site combustion	Up to 45kW	5.5	10
Ground source heat pumps	Up to 45kW	7	23
Air source heat pumps	Up to 45kW	7.5	18
Solar thermal	Up to 20kW	18	20
Medium installations			
Solid biomass	45kW-500kW	6.5	15
Biogas on-site combustion	45kW-200kW	5.5	10
Ground source heat pumps	45kW-350kW	5.5	20
Air source heat pumps	45kW-350kW	2	20
Solar thermal	20kW-100kW	17	20
Large installations			
Solid biomass	500kW and above	1.6-2.5	15
Ground source heat pumps	350kW and above	1.5	20
Biomethane injection	All scales	4	15

<http://decc.gov.uk/rhi>

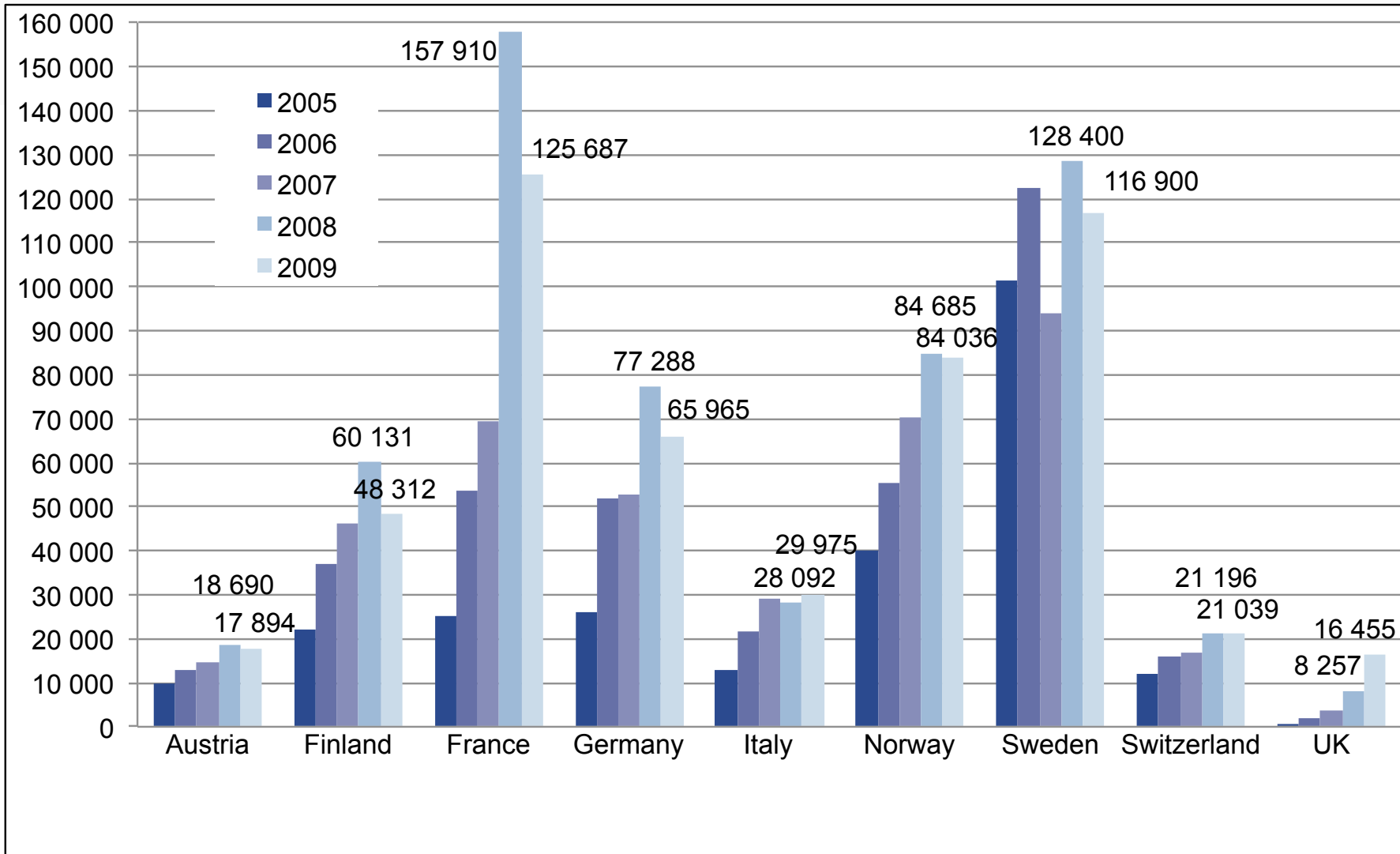
Pro & contra incentive schemes

- ⊕ **Publicity**
- ⊕ **Official focus on market**
- ⊕ **Reduced investment cost**
- ⊕ **Triggers activity of stakeholders**
- ⊕ **Increasing demand**
- ⊕ **Efforts towards standardization**
- ⊕ **“me too” investment**
- ⊖ **Stress on the market**
- ⊖ **Lack of certified personnel**
- ⊖ **Supply issues, issue of “on” - “off” -demand**

Requirements to good incentive schemes

- **Transparency**
 - Type of support / applicable technology
 - Duration (start and end) of program
 - If financial: amount of money available
 - Requirements
- **Support of quality, yet simple administration**
- **Long term existence instead of budget based**
- **Appropriate amount (not too large/not too small)
sufficient impact on investment cost ratio and total cost
of ownership**
- **Technology neutral**

European Heat Pump Market Statistics 2005-2009



source: EHPA European Heat Pump Statistics – outlook 2010

The European Heat Pump Association History

EHPA was established in the year 2000 as a European Economic Interest Group to promote awareness and proper deployment of heat pump technology in the European market place for residential, commercial and industrial applications. EHPA aims to provide technical and economic input to European, national and local authorities in legislative, regulatory and energy efficiency matters.

EHPA coordinates the **Quality label for heat pumps** as well as the **EUCERT** training and certification scheme for installers and compiles the annual European heat pump statistics.

All activities are aimed at overcoming market barriers and dissemination of information in order to speed up market development of heat pumps for heating, cooling and hot water production.

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European Heat Pump Association (EHPA) »products«

- EHPA **quality label for heat pumps in AT, BE, CH, DE, FI, FR, SE incl. the quality label database**
 - Based on measurements according to EN 14511 in accredited labs
 - Additional requirements: 10 years spare part guarantee, existing service network, installation manual in local language
- European **education and certification program** for heat pump installers (EUCERT) in AT, BE, DE, SE, FI, FR, UK, CZ, IT (planned) including the database on certified installers
- European Market outlook (**Heat Pump Statistics**)
- Annual European Heat Pump Forum
- EHPA.ORG website