Energy Efficiency potentials in the heating and industry sector

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STIEBEL ELTRON GROUP

› In the fields of domestic technology and renewables, we are an international market and technological leader

› Our technical proficiency, quality, innovation, reliability and customer oriented service set us apart from the rest

› The company is owned by Frank Stiebel and the Stiebel Family Trust (created by Dr. Ulrich Stiebel), each of whom holds 50 % equity

422 Mio. € (preliminary) turnover in 2014
3,000 employees worldwide
2,000 in Germany, thereof
1,500 in Holzminden
5 production facilities
24 subsidiaries
120 sales companies
STIEBEL ELTRON
Product range

> Customized solutions with
30,000 system types

ERNEUERBARE ENERGIEN | RENEWABLES

KLIMA | AIR CONDITIONING

VARMWASSER | HOT WATER

RAUMREIZUNG | CENTRAL HEATING

Energy efficiency potentials in the heating and industry sector | EHPA & ZVEI | Brussels | 21.1.2015
How many heat pumps do you own?
Heat pumps contribute to energy efficiency in all areas

- Heating
- Cooling
- Hot water

- For cold, average, warm climates

- Residential
- Commercial
- Industrial applications

- Alone or in combination (hybrid)
EU climate and energy framework: 2020 vs 2030

Energy efficiency targets out of reach?

<table>
<thead>
<tr>
<th>2020 Targets</th>
<th>Energy efficiency</th>
<th>Share of renewable energy</th>
<th>Greenhouse gas emission reduction</th>
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<tbody>
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<td>Share in 2011: 12.7%</td>
<td>~16-20%</td>
<td>&gt;27%</td>
<td>40%</td>
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Source: European Commission, DG Energy
The European heating market in a nutshell

- Number of residential buildings in 2011:
  - Approx. 89 million single-family houses
  - Approx. 45 million multi-family houses
- Heat generator market 2013: approx. 6,7 million units (Source: BRG Consult)
- Heat pump stock 2013: 6,1 mill. Units
- Heat pump sales 2013: 771 151 units
- HP share in the heat generator market: 11,5%
Security of supply

- EU energy imports 2012: 545 mill. € 4.2% of the EU GDP
- EU imports 97 Mtoe Russian gas; 83 Mtoe available as thermal heat
- Heat pumps can reduce Europe’s import dependency. 54 million additional heat pumps by 2030 can replace gas imports
  - 60 Mtoe of renewable energy
  - 37 Mtoe of primary energy savings
  - 181 Mt of GHG emission reduction

Energy efficiency potentials in the heating and industry sector | EHPA & ZVEI | Brussels | 21.1.2015
Electricity will increasingly power the world's economies in the 21st century, rivalling oil as the dominant energy carrier.

Actively managing this transformation is the only way to ensure we meet global energy security and climate goals economically.

Increased electrification of buildings through the deployment of heat pumps as part of a comprehensive approach to improving buildings energy efficiency can significantly displace natural gas demand.
How much primary energy does it need for 100 units of useful heat?

PEF = 2.5

A+++ | 62
A++ | 73
A+ | 90
A | 106
B | 116
C | 127
D | 180

55 °C  35 °C

A+++  A++  A+  A  B  C  D

ground water air

YZ dB kW kW

2019 811/2013
Use the full benefit of heat pump technology towards the energy targets by

- swift implementation of **existing legislation**
- consistent support of **heating and cooling**
- incentives, subsidies and taxation in line with EU climate and **energy targets** for all technologies, including thermally and electrically driven heat pumps
- Fix the price-energy ratio issue
- framework conditions that **encourage load based, flexible electricity tariffs** to stimulate the use of heat pumps in smart grids and use heat pump systems as thermal batteries
- realizing a **greener electricity** mix without putting all related cost on the users of electricity
Future cities can be heat pump cities