

# European Heat Pump Market and Statistics Report 2015

## Executive Summary



**T**he number of heat pump units sold in the European heat pump market increased by 3.5% in 2014. A total of 796 746 units were sold in the 21 European countries covered by this year's EHPA report.

Assuming a useful life of 20 years, the heat pump stock at the end of 2014 exceeds 7.51 million units (see table 1-1).

	SUM EU-11	SUM EU-21	TOTAL STOCK
2005	446 037		1 015 607
2006	504 428		1 525 401
2007	568 131		2 114 519
2008	770 538		2 918 976
2009	686 076		3 644 998
2010	671 392	800 388	4 437 530
2011	666 873	808 591	5 237 003
2012	621 818	750 436	5 979 042
2013	635 273	769 879	6 741 251
2014	659 911	796 746	7 517 019

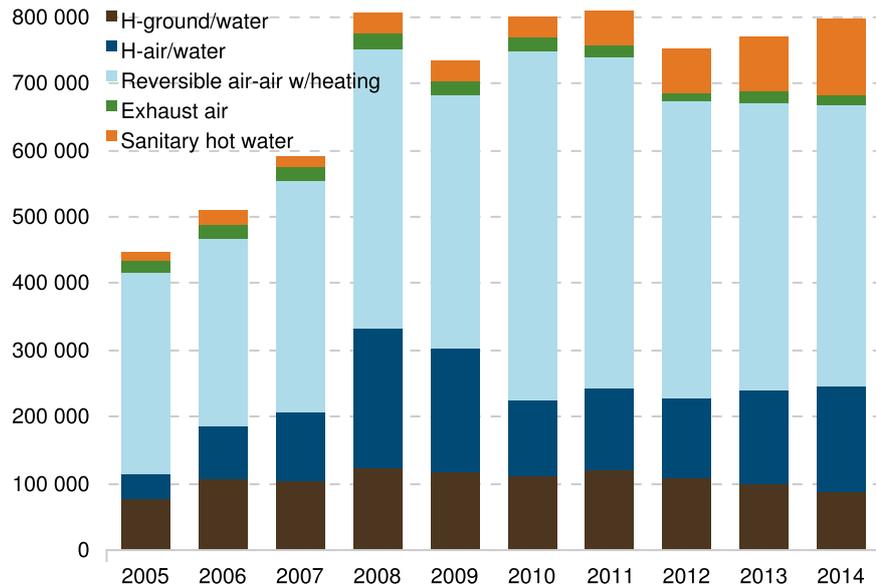
Table 1-1: Heat pumps in Europe – sales and stock, 2005–2014

The heat pump market continues to be governed by three major trends:

1. **Air** is and will remain the dominant energy source for heat pumps (note that cooling-only units are not counted in the report, see Annex II).
2. **Sanitary hot water heat pumps** are the fastest growing heat pump segment across Europe. This category is the only one showing double-digit growth. Sanitary hot water units combine a heat pump and a hot water storage tank. They are either sold as stand alone units with the heat pump and the tank in one casing or as systems combining a heat pump and a separate tank.
3. **Larger heat pumps** for commercial, industrial and district heating applications are increasingly popular. They quite often use geothermal or hydrothermal energy. However also here, air is an energy source used by a number of installations. Air, water and ground can either carry renewable energy or waste heat from processes. In the later case, this type of heat pump improves energy efficiency, but does not use a renewable source.

Compared to 2013 a total of 8 markets have reported a loss, however this was overcompensated by growth in particular in the larger markets like France, Finland and Spain. The group of top-10 markets by sales volume was led by France, followed by Italy and Sweden, with annual sales greater than 100 000 units in France and Italy. Germany, Finland, Norway and Spain exceed 50 000 sold units per year.

Figure 1-1: Development of heat pump sales in Europe 2005–2014, by category



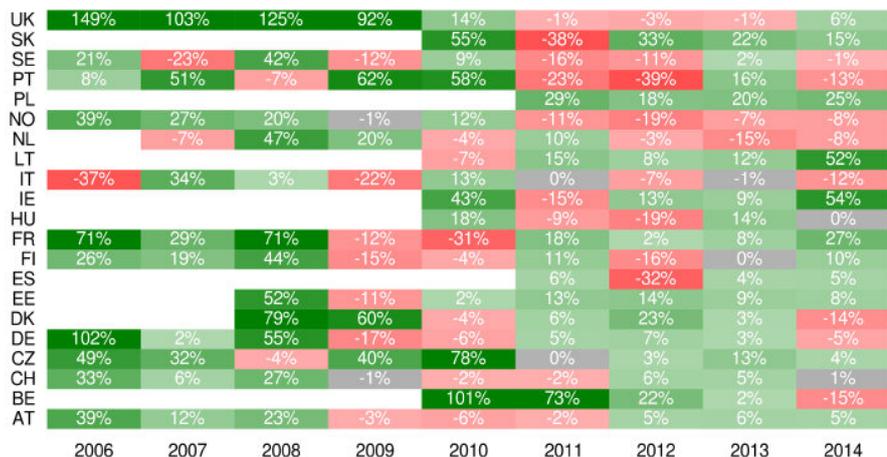
In relative terms, Ireland (+53.5%) and Lithuania (+52.1%) experienced by far the strongest growth, followed by France (+27.1%) and Poland (+24.6%), all showing more than 20% growth. These 4 top growth countries enjoy a positive development over the last two years, the French, Polish, Lithuanian and Estonian markets can look back at 4 years of growth now.

Growth in mature markets like France, Norway and Switzerland must be attributed at least partly to the renovation segment. This is a positive sign, as it also means that technology and business models to address this sector are developed and can be used in other countries that will inevitably follow this evolution. After all the growth potential for heat pumps lies in the renovation sector.

Overall, the industry is optimistic for a continued market growth and more markets returning to growth in 2015 due to a positive legal environment.

Looking in more detail at the Scandinavian countries reveals a significant growth perspective. If all countries had the same market penetration as Sweden, the annual sales number of heat pumps in Europe would be 5 times today... resulting in 4.9 million units sold per year and a stock of 36.9 million units in 2020 and 85.9 million in 2030.

Figure 1-2: Development of heat pumps sales in 21 European countries – growth heat map



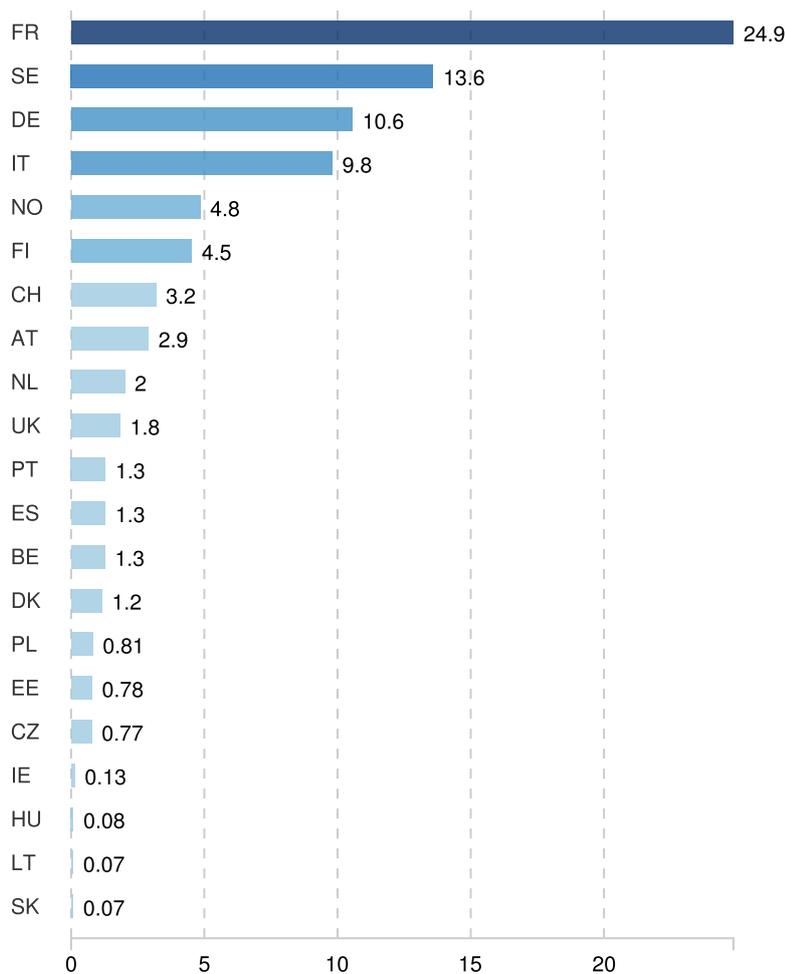


Figure 1-3: RES from 2014 heat pump stock, by country (in TWh)

For policy makers, this is good news as it provides a huge potential to reduce Europe's energy demand for heating, cooling and hot water production.

In 2014, a total heat pump capacity of over 6.6 GW was installed producing approx. 13 TWh of useful energy, integrating 8.15 TWh of renewables in heating and cooling and avoiding 2.09 Mt of CO<sub>2</sub>-equivalent emissions. An additional 4.7 TWh of primary energy was saved resulting in a reduced final energy demand of 10.42 TWh. In order to produce the 2014 sales volume and to maintain the installed stock, a total of 43 465 man years of employment were necessary. Obviously real **employment** related to the heat pump market is larger.

In **aggregated terms**, a total of more than 7.5 million heat pump units were installed since 1995. This amounts to an installed thermal capacity of 66.3 GW.

All installed heat pumps produce 133.4 TWh of useful energy, **85.8 TWh of which being renewable**. Their use saved **109.3 TWh of final** and **51.7 TWh of primary energy**. The heat pumps stock helped to **avoid 22.1 Mt of CO<sub>2</sub> emissions**.

Figure 1-3 shows the split of renewable energy production from heat pumps on a country level. France is the country that produces the most renewable energy, followed by Sweden.

The heat pump stock in 2014 (heat pumps sold in the past twenty years) contributed to **22.1 Mt of greenhouse gas emission savings (see figure 1-4)**. The distribution of emission savings per country is very similar to that of renewable energy production, since both calculations are directly linked to the number of units installed.

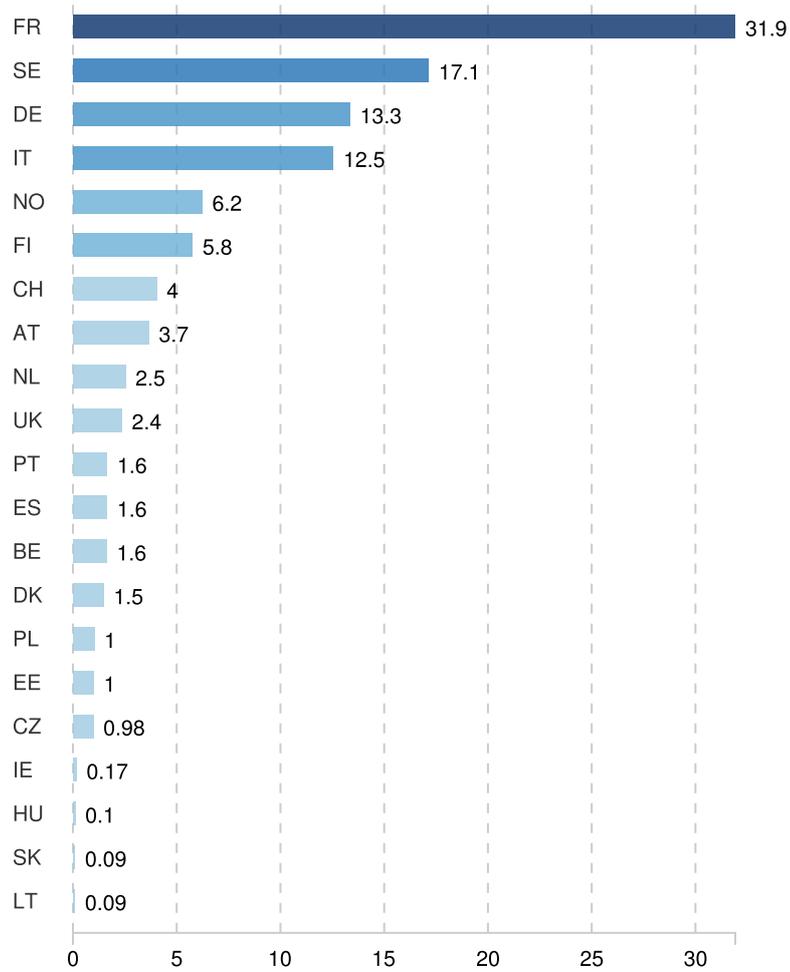


Figure 1-4: Greenhouse gas emissions saved by 2013 heat pump stock, by country (in Mt)

In summary, heat pump markets are growing slightly. In light of the total heating market, this growth is insufficient to achieve the aim for decarbonisation of heating and cooling by 2050. It needs brave governmental decision makers to address the elephant in the room: a distorted price mechanism that favours the use of fossil fuels and fossil fuel technology. Heat pump emissions are covered under ETS due to the fact that electricity production (electricity being the auxiliary energy source used in more than 99% of all heat pumps sold) is covered. At the same time the environmental damage of fossil fuel use is left for society to pay for. A perceived cheap way of heating is actually paid for via other budgets, namely by health and environmental protection services.

The heat pump industry re-iterates its call on decision makers in the European Commission and the Member States to address this issue.

The heating and cooling strategy currently under development could be a good vehicle to do so. In any case, it should make heat pumps a cornerstone.

Clearly, today's business as usual will not be enough to unearth the technology's potential, instead significant government intervention is necessary to shape the sustainable energy supply in all Member States of the European Union.