

The Heat Pump Industry Back on Track towards Growth in Finland

After a few years' decline that was caused by a slump in construction, the economy, the general mood as well as by cheap oil, heat-pump sales have taken a turn for the better again. Last year, more than 60 000 heat pumps were sold. Consumers invested 350 million in heat pumps. The amount of energy that heat pumps extracted from around houses rose to 0,6 TWh per year. Heat pumps became a more popular heating and cooling choice for bigger buildings. The total number of heat pumps that have been installed in Finland will exceed the 800 000 limit any day now.

According to Finnish Heat Pump Association statistics, the annual sales of ground-source heat pumps unfortunately fell by 8% to a total of 8500. A general all-time low in construction and renovations, the low price of oil as well a growth in air-to-water heat-pump sales had the biggest impact on ground-source heat-pump fittings. Nevertheless, more than half, i.e. 3000, of the new 6000 single-family houses that were built in 2016 were fitted with geothermal heat. The remaining 5500 ground-source heat pumps replaced oil and electric heating, and also district heating to some extent now – says Executive Director Jussi Hirvonen from the Finnish Heat Pump Association SULPU.

However, the sales statistics of 2016 showed growth. The decline in geothermal heat was offset by the more than 30% sales increase of air-to-water heat pumps to a total of 3500 pumps, as well as the 20% sales increase of exhaust-air heat pumps to a total of 2200 pumps. The air-to-water heat pumps have mainly been fitted during renovations to either replace oil or electric heating, or as an addition. Exhaust-air heat pumps are mainly fitted in new single-family houses. These huge growth figures are proof of the developments in the performance of heat pumps, the excellence of system deliveries, and the change in the market structure as well as of the increase in supply. The high air-source heat pumps sales figure of 45 000 has remained approximately the same. The heat-pump sales in Euros are increased through the increase in the popularity of heat pumps.

With the sales of 60 000 heat pumps last year, we are competing for first position in Europe when numbers of households are compared to Norway and Estonia. We overtook Sweden already a few years ago. The sales figures per household of Central European countries such as Germany and France were no more than a tenth of the Finnish figures.

Last year, Finns invested 350 million Euros in heat pumps. The reason for this success can be found in the profitability of heat pumps. The return on the investment is excellent, most often more than 10% per year. And this profitability is still improving. The price of oil has gone up by almost 50% towards the end of 2016. This will, without doubt, have an impact in future on the investment willingness of 20 000 oil heaters. Its easy and carefree use, its little need for space and its cooling feature are also aspects that speak strongly in favour of a heat pump. The impact of saved fuel and electricity that heat pumps have had on the Finnish trade balance is already in the region of one hundred million. The heat-pump industry offers 2000 people employment. Furthermore, the reduction in CO₂ emissions is in the region of a megaton, with the 800 000 heat pumps in Finland gathering more than 6 TWh/a of local energy from around buildings from the ground, the ground rock or from the air. The 60 000 heat pumps alone that were installed in 2016 increased the use of renewable energy in the heating of houses by 0,6-0,8 TWh. For the sake of comparison, wind power production last year was approximately 3 TWh, and the power supply from one Loviisa nuclear power-plant unit was 5 TWh/a.

Furthermore, the number of heat pumps that were fitted in larger facilities, such as apartment buildings, service buildings, and industrial buildings, grew to more than 1000, which was good news. Exhaust-air heat pumps in apartment buildings are rapidly become more common. As many as a few hundred apartment buildings were fitted with a heat pump that gathers exhaust-air heat, which helps reduce as much as 50% of a building's district-heat, or other energy, consumption. The potential of these solutions is truly

enormous. More than 30 000 apartment buildings release over 20-degree Celsius exhaust air into outdoor sub-zero temperatures through ventilation. Increasingly many apartment buildings are being fitted with a heat-pump based solution that entirely replaces district heating.

The heat-pump industry is, again, on a path towards growth. Nevertheless, we have only started on the road to success. 200 000 oil-fired boilers, 10 000 hydronic heating systems and 500 000 electric heating systems are waiting for a heat-pump investment decision to be made, even though it would be sensible to make that decision right now. Indeed, more than 70% of single-family house builders already opted for some type of a heat pump. Once single-family house construction returns to its normal levels, heat-pump sales will automatically be impacted. Bigger buildings, the increase in the need for cooling features, throwing a challenge to district heating, all create huge possibilities for the market. This will also include challenges to the knowledge and skills, the planning, and the training within the industry, as well as to the quality and growth control of products and fittings within each respective heat-pump company. I believe that surprisingly soon we will be seeing heat-pump sales figures that have doubled – envisions Jussi Hirvonen.

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