

In Finland another peak year for heat pumps. More than 100,000 pumps were sold.

Despite the previous year's already high sales figures and the coronavirus pandemic, heat pump sales continued to grow. Over EUR 600 million was invested in the more than 100,000 heat pumps that were installed last year. EUR 6 billion has been invested primarily by house owners in Finland's more than one million heat pumps – thus making this a major climate action. Every year, these heat pumps produce about one extra TWh of clean, combustion-free heating and cooling energy. In total, heat pumps produce approximately 12 TWh of energy per year. This corresponds to more than 15 % of the heating of Finland's residential and service building stock. State aid granted for the replacement of oil heating drove sales especially of air-to-water heat pumps last year.

Annual sales threshold of 100,000 was exceeded. Sales of air-to-water heat pumps grew by 25 %.

According to Finnish Heat Pump Association (SULPU ry) statistics, 102,000 heat pumps were sold in 2020, an increase of 4 % over the previous year. The number of air-source heat pumps sold was just over 80,000, ground-source heat pumps 9,000, air-to-water heat pumps 8,000, and exhaust-air heat pumps 3,500. Aid granted to replace oil heating drove sales especially of air-to-water heat pumps. Sales increased by 25 %. Sales of ground source heat pumps showed a slight decrease of 4 %, but as the size of delivered heat pump systems grew significantly, sales in euro within the sector increased – says Jussi Hirvonen, Executive Director of the Finnish Heat Pump Association SULPU.

Hundreds of apartment buildings are switching from district heating to heat pump sourced heating and cooling

Ground-source and exhaust-air heat pumps and their combinations are rapidly becoming more widespread in apartment buildings. They usually replace district heating. Approximately 500 apartment buildings have already been fitted with heat pumps that recover the heat of exhaust air. This reduces as much as 50 % of the building's district heating or other energy consumption. A growing number of housing companies have decided to install ground-source heat in conjunction with an exhaust-air heat pump and to switch completely from district heating to a heat-pump based heating and cooling solution.

The rush to deploy large heat pumps is about to begin

The heating and cooling of shopping centres, service buildings and logistics centres is increasingly managed through a MW-level heat pump installed in each property. For district and block heating and cooling, dozens of heat pump projects are currently underway. The use of waste heat from industrial sites, data centres and cooling always requires heat pump technology. And this technology is advancing. Heat pump performance characteristics and reached temperature levels are improving, so more applications are continuously being discovered to replace fossil fuels, combustion and, often, electricity.

Heat pumps play a key role in electricity demand response

The fact that heat pumps are the perfect tool for demand response and for managing the grid's electricity demand will be important in the future. A heat pump provides a unique bridging technology between heat and electricity. This technology has the ability to use volumes of water, buildings, energy wells as well as bidirectional cooling/heating features as storage. With heat pumps' thermal power linked to demand response, heat pumps would already be able to provide approximately 5,000 MW of thermal power and, last year, about 500 MW more was generated.

As much as about 1,500 to 2,000 MW of controllable electric power would already be available through the current heat pump stock.

An untapped potential of EUR 3 billion just in oil heating and exhaust air from apartment buildings

There is certainly potential for heat pumps. In Finland, about 120,000 to 150,000 houses are oil heated. Every two hours, 30,000 apartment blocks release a houseful of 23-degree exhaust air outdoors, all year round. If, for instance, 100,000 users of oil heating are encouraged to switch to clean heating and exhaust-air heat pumps are deployed to recover the waste heat from exhaust air in 10,000 apartment blocks, this would mean fast-track viable investments that provide local employment to the value of approximately EUR 3 billion. With political will, this investment could realistically be carried out in 5 years, with the help of a reasonably light 'carrot-and-stick' approach and financial instruments. Most of this 'carrot money' will return to the state in VAT and other taxes, employment, economic resurgence as well as exports. In just these two examples, we are talking about approx. 5 TWh of emission- and combustion-free production per year and a cut in emissions of several million tonnes of CO₂-eq.

For further information, please contact The Finnish Heat Pump Association SULPU ry, www.sulpu.fi, Executive Director Jussi Hirvonen, tel. +358 50 500 2751, jussi.hirvonen@sulpu.fi.

Sales statistics and charts are attached and available via the link provided