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The Finnish Heat Pump Association

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Peak year for heat pumps. Sales verged on 100,000 pumps. Milestone of one million pumps broken.

Heat pump sales increased by 30% and even more in euro terms. More than EUR 600 million was invested in the 98,000 heat pumps that were installed last year. At the same time, the milestone of one million installed heat pumps was broken. Heat pump investments already total approximately 6 billion. Heat pumps produce well over 10 TWh of energy per year in total, which corresponds to 15% of the heating of Finland's residential and service building stock. It is noteworthy that this huge investment in the environment and in fighting against climate change has been made primarily by house owners using their own money. The excellent profitability of heat pumps has certainly made consumers' decision-making easier.

According to Finnish Heat Pump Association SULPU ry statistics, 98,000 heat pumps were sold in 2019, an increase of over 30% compared to the previous year. The number of air-source heat pumps sold reached 79,000, ground-source heat pumps 9,000, air-to-water heat pumps 6,000, and exhaust-air heat pumps 4,000. Sales volumes of all heat pump types increased compared with the previous year. As the size of delivered heat pump systems grew significantly, sales within the sector – in euro terms – increased even more. Last year, the value of heat pump sales at consumer prices was more than EUR 600 million. The breakthrough of inverter-regulated ground-source heat pumps last year contributed to the growth in euro terms of ground-source heat pumps.Calculated at consumer prices, more than EUR 6 billion has already been invested in this major climate action, says Jussi Hirvonen, Executive Director of the Finnish Heat Pump Association SULPU ry.

About 70 to 80 % of single-family home builders opt for a heat pump solution. In most cases, they choose geothermal heat or exhaust-air heat pumps. Approximately 8,000 oil-fired boilers are replaced annually with geothermal heating systems or with air-to-water heat pumps. This replacement rate is still disappointingly low, even though the profitability of switching over to heat pump heating is excellent for a homeowner. The return on investment of this climate action is usually more than 10%. Oil is still puffing out of the chimneys of some 150,000 houses. In most cases, air-to-water heat pumps replace oil-fired and electric boiler systems or are used alongside them. Air-source heat pumps are mainly installed to save electricity in houses with direct electric heating as well as in holiday homes. It is also gratifying that a niche in the market has opened up for bigger air-to-air and air-to-water heat pumps in, e.g., industrial halls and service buildings.

Deployment of exhaust-air heat pumps in apartment buildings increased at a fast pace. Over thousand apartment buildings have already been fitted with a heat pump that recovers the heat of exhaust air. This reduces as much as 50% of the district heating or other energy consumption of the building. The potential of these solutions is truly considerable, in the range of 3 to 5 TWh/a. More than 30,000 apartment buildings release over 20-degree Celsius exhaust air into outdoor sub-zero temperatures through ventilation. A growing number of housing co-operations decided to switch completely from district heating to a heat-pump based solution.

The sector has seen the emergence of new business models. The heat pump heat-sales model, or the so called service model, means that the heat pump investment of a building is made by the seller who delivers the heat energy, and cooling, if desired. The customer is invoiced for the energy in the same way as for electricity or district heating. This service model became more common not only in service buildings and industrial sites but also in apartment buildings using exhaust air and geothermal heat. This is an easy and appealing model for decision-making in housing co-operations. No investment is required; it merely means sitting back and enjoying the reduction in energy costs and maintenance charges.

The profitability of heat pump investment is excellent. Strong arguments for heat pumps also include ease of use, low-maintenance, minimal need of space, and cooling features. The impact on the Finnish trade balance of fuel and electricity saved through heat pumps is in the region of one hundred million. The heat pump sector already employs between 3,000 and 5,000 persons. The reduction of CO2 emissions in Finland is also in the megaton range.

In the future, even more importance may be given to the fact that heat pumps are the perfect tool for demand response and for managing the grid's electricity demand. Heat pumps provide unique technology bridging heat and electricity. It has the ability to utilise as storage volumes of water, buildings, energy wells as well as bidirectional cooling/heating features. With heat pumps' thermal power linked to demand response, heat pumps would already be able to provide approximately 4,000 MW of thermal power. And last year about 500 MW more was generated. According to the principles of operation of a heat pump, controllable electric power provides approximately one third of the thermal power. The remaining two thirds is waste energy, or energy from the surrounding environment, recovered by this brilliant apparatus from around the building.

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