

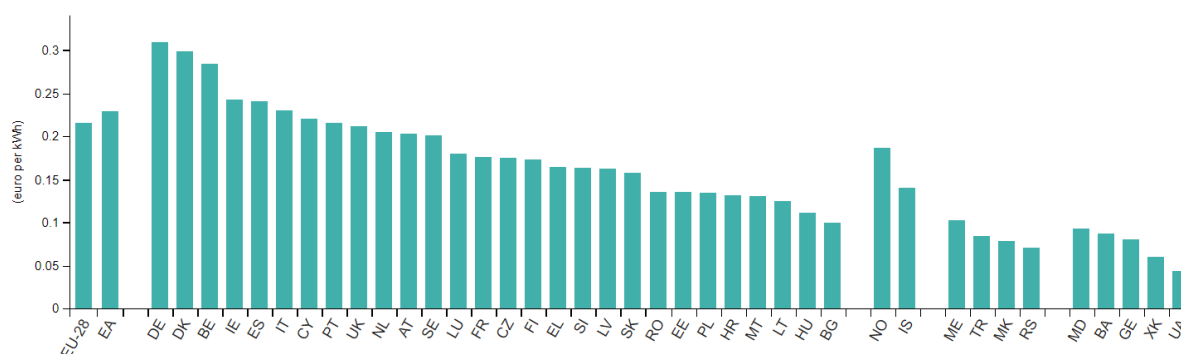
SBBA Heating Market Report 2021

Electricity production, consumption and prices

In 2019, the Swedish final energy consumption amounted to 369 TWh (Industry 142 TWh, Housing and services 144 TWh, and transports 83 TWh). During the last 40 years, the supply of biomass in the Swedish energy system has tripled. During the same time the supply of crude oil and oil products has decreased with approximately 50 %.

In 2019, electricity production was 166 TWh. It was distributed between nuclear power (39 %), hydropower (39 %), wind power (12 %) and solar power (0,4 %). The remaining 10 % were combustion-based production, which mainly takes place in CHP plants and in industry. The major part of the electricity consumption is found in the housing and services sector (72 TWh) followed by the industry sector (48 TWh). The electricity consumption within the transport sector is approximately 3 TWh. However, the electricity consumption in this sector is expected to increase rapidly due to the ongoing electrification.

Today, there are six remaining nuclear reactors in Sweden, located in three powerplants; Forsmark (3), Oskarshamn (1) and Ringhals (2). In Oskarshamn two of three reactors were shut down in 2017 and in Ringhals two of four reactors were shut down in 2019 and 2020. Historically, the electricity prices have been relatively low in Sweden due to good access to hydro- and nuclear power. However, the Swedish electrical system is part of the Nordic system with connections to Denmark, Finland, Norway, Lithuania, Poland and Germany. As a member of the internal market for electricity, the Swedish electricity prices have gradually adapted to the outside world. The electricity prices are now in the mid-range of the EU-28.



Electricity prices in Europe 2019, taxes included. (Source: Eurostat – www.ec.europa.eu/eurostat)

Total energy consumption for heating and hot water in dwellings and non-residential buildings 2020

- The total energy consumption for heating and hot water in dwellings and non-residential buildings in 2020 amounted to 73,8 TWh. The uptake of energy from heat pumps is not included in the official Swedish statistics.
- 29,1 TWh, or approximately 39 % of the energy, was used in single-family houses. Apartment buildings and non-residential buildings accounted for 35 % and 26 % respectively.
- District heating is the dominating heating form for dwellings and non-residential buildings in Sweden. In 2020 district heating accounted for 43,1 TWh which corresponds to approximately 58 % of the total energy consumption in dwellings and non-residential buildings. Almost 53 % of the district heating was used in apartment buildings while 35 % was used in non-residential buildings. In single-family houses, district heating accounted for roughly 12 %.

- The district heating market consists of several companies, often operating at a local level in natural monopolies; end users in district heating networks are usually not able to choose their heat supplier. On the other hand, there is competition between district heating and other products and services in the heating market. Because of this, the pricing of district heating is normally set against the prices for alternatives (e.g. heat pumps, biomass boilers).
- Electricity is the second most common heating form in Sweden. In 2020, electricity accounted for 20,1 TWh in dwellings and non-residential buildings. As much as 73 % of this electricity was used in single-family houses. 17 % was used in non-residential buildings and 10 % in apartment buildings.
- The total energy consumption for heating and hot water in dwellings and non-residential buildings has decreased during the last decades. As an example – between 2002 and 2020, the total energy consumption in this area has decreased from 89,2 to 73,8 TWh which corresponds to roughly 17 %. A part of the explanation is probably the large number of heat pumps installed during the same period, as the uptake of energy from heat pumps is not included in the official statistics.

Heat pumps

In 2020, there were roughly two million single-family houses in Sweden. The number of dwellings with any kind of heat pump amounted to approximately 1 215 000. 95 % of the heat pumps are found in single-family houses, and the total number of heat pumps installed in 2020 amounted to 1 460 000. The heat pumps installed consist of 576 000 air/air (39 %), 522 000 liquid/air (36 %) and 363 000 air/water or exhaust air (25 %). Depending on the technology, heat pumps might be used in combination with other forms of heating. In Sweden, it is also quite common to have more than one heat pump installed in the same building. Sales of heat pumps have increased steadily since the early 1980s and in 2020 approximately 50 000 heat pumps were installed in Sweden (air/air heat pumps not included).

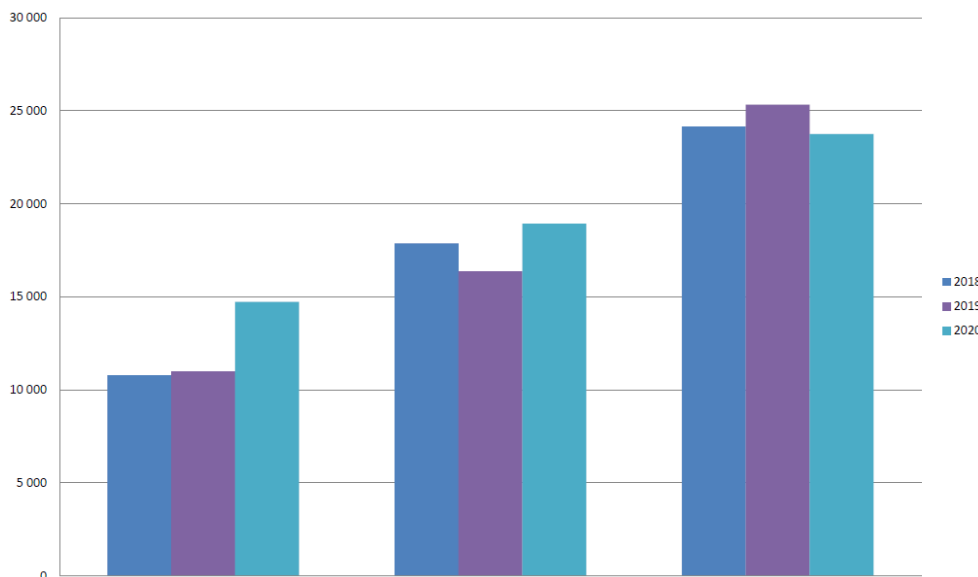


Figure: Sales of heat pumps in Sweden 2018-2020. From left: air/water, exhaust air, liquid/water. (Source: Svenska kyl&värmepumpföreningen 2021)

Biofuel consumption in dwellings and non-residential buildings 2020

Biofuel contributed with 8906 GWh for heating and hot water in dwellings and non-residential buildings in 2020. 94 % of this energy was used in single-family houses. 5 % was used in non-residential buildings and roughly 1 % in apartment buildings. Since 2009, when there was a peak for biofuel as heating form (13,9 TWh), the consumption has gradually decreased to approximately 8,9 TWh in 2020. During a short period before 2009, the Swedish Government introduced a state aid for the installation of small-scale biofuel heaters, which probably explain a part of the large consumption in 2009. In 2020, there were approximately 235 000 wood logs boilers and 132 000 wooden pellets boilers installed. Beside these boilers there were roughly 790 000 fireplaces consisting of different kind of space heaters, normally used in combination with heat pumps.

Natural gas and biogas

Gas boilers are not as used as in most other EU countries. An important reason is the relatively limited development of the gas grid. On the other hand, the share of consumption of green gas is rather high. In 2019, the Swedish biogas consumption amounted to approximately 4 TWh, to be compared with the natural consumption of just over 10 TWh in the same year. In 2020 the total consumption of natural- and biogas for heating and hot water in dwellings and non-residential buildings amounted to approximately 0,7 TWh.