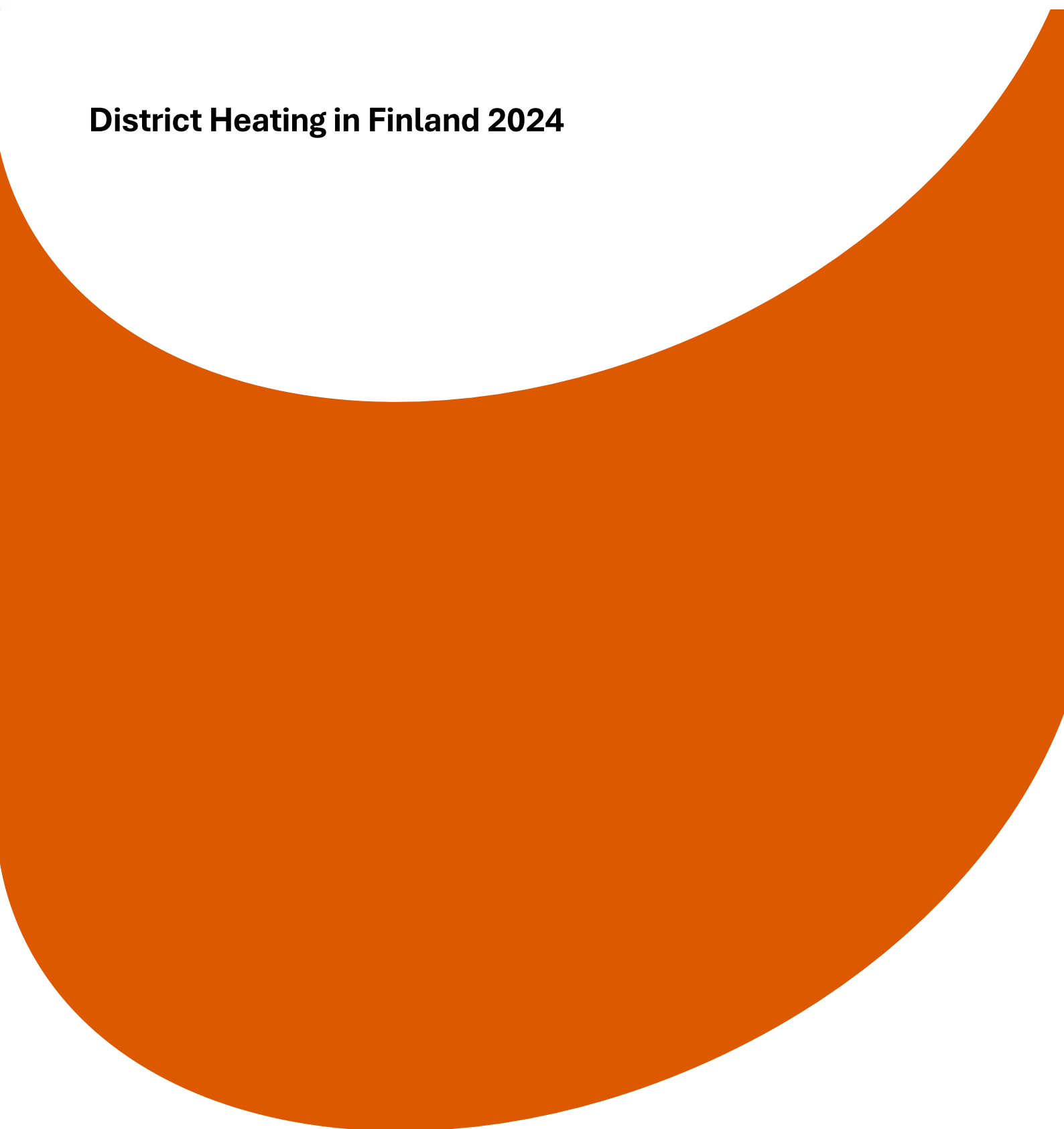


District Heating in Finland 2024



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1. District heating 2024

Finnish Energy compiles district heating statistics based on the data collected from the companies. The objective is to reliably and transparently describe the district heating operations in Finland as well as serve as a foundation towards sustainable advocacy. These annually published statistical tables contain detailed and comprehensive information of the district heating operations in Finland in 2024. The statistical tables are available as Excel files on the Finnish Energy's website: <https://energia.fi/en/statistics/statistics-on-district-heating/district-heating-and-cooling/>

1.1 General information

The district heating statistical tables contain information of those member companies of Finnish Energy who have responded to the statistical survey. Data has also been collected from those wholesale companies that deliver district heat to companies already answering the survey.

This publication contains statistics from 107 district heating companies and from 69 wholesale companies.

Table 1. General information on district heating year 2024

	Year 2024	Change compared to 2023
Total supply	36 000	-1,9 %
DH production by fuels	28 200	-5,1 %
Net production of electricity in CHP production	4 500	- 23,3 %
Fuel energy consumed	40 000	-7,4 %
Heat recovery, and heat produced by heat pumps and electric boilers	7 800	11,4%
DH consumption	32 700 GWh	-1,5 %
of which the share of dwelling houses	53,8 %	- 0,1 p.p.
Customers:		
❖ The contracted heat power	20 100 MW	+ 3,3 %
❖ Building volume	1060 milj. m ³	+ 1,4 %
❖ of which the share of dwelling houses	46,1 %	- 0,1 p.p.
Average selling price		
❖ Arithmetic value	96,26 €/MWh	+ 6,7 %
❖ Weighted by sales	104,33 €/MWh	+ 3,6 %
Total length of DH networks	16 700 km	+ 1,4 %

1.2 Municipalities with district heating

The district heating companies included in this publication distributed district heat in 178 municipalities.

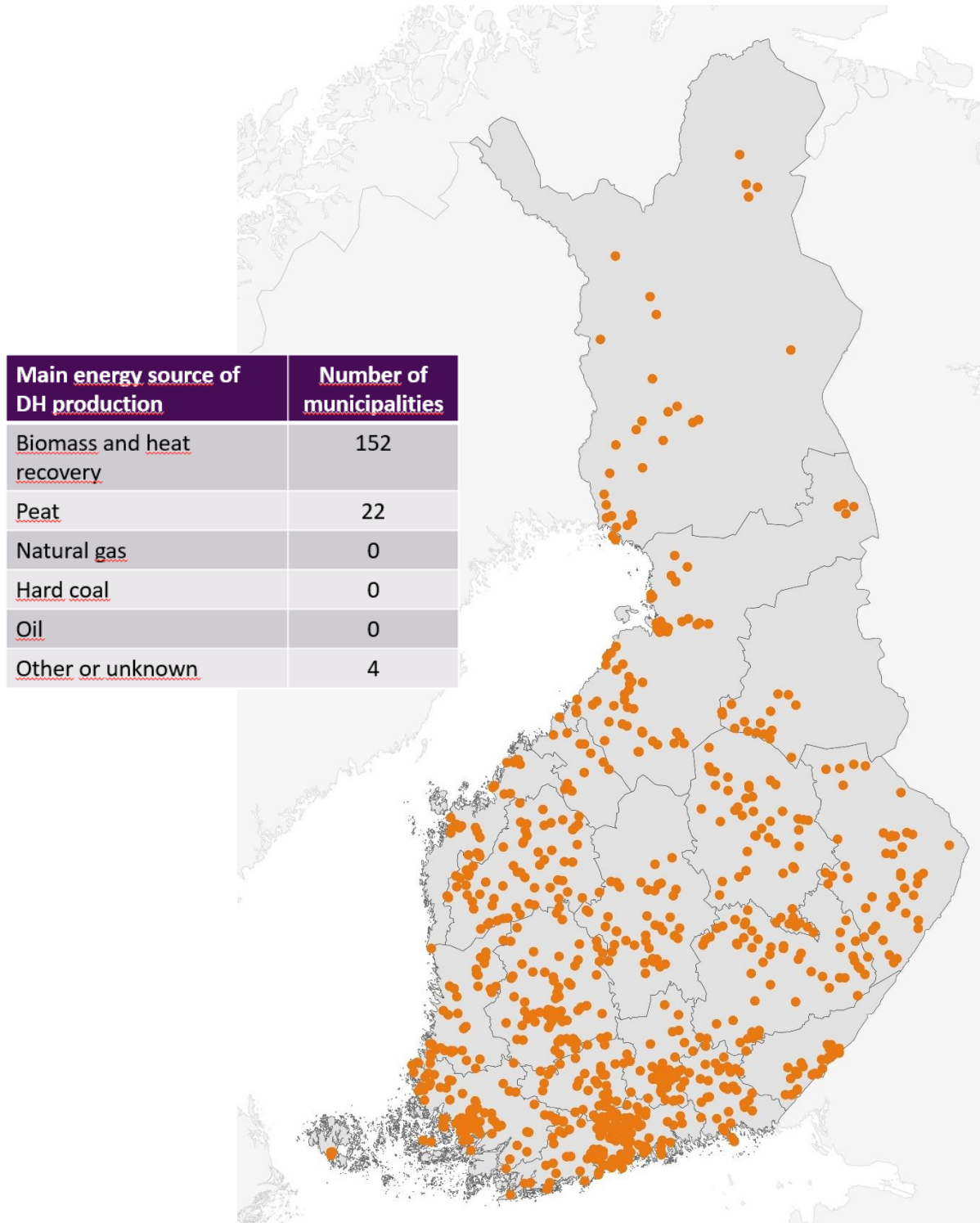


Figure 1 District heating production units at the end of 2024. The locations are within the right municipalities but do not present the exact locations.

1.3 District heating networks and production units

The length of the district heating network at the end of 2024 was 16 690 km. The length increased 230 km from the previous year. The development of the network length since 1970 is presented in Figure 2.

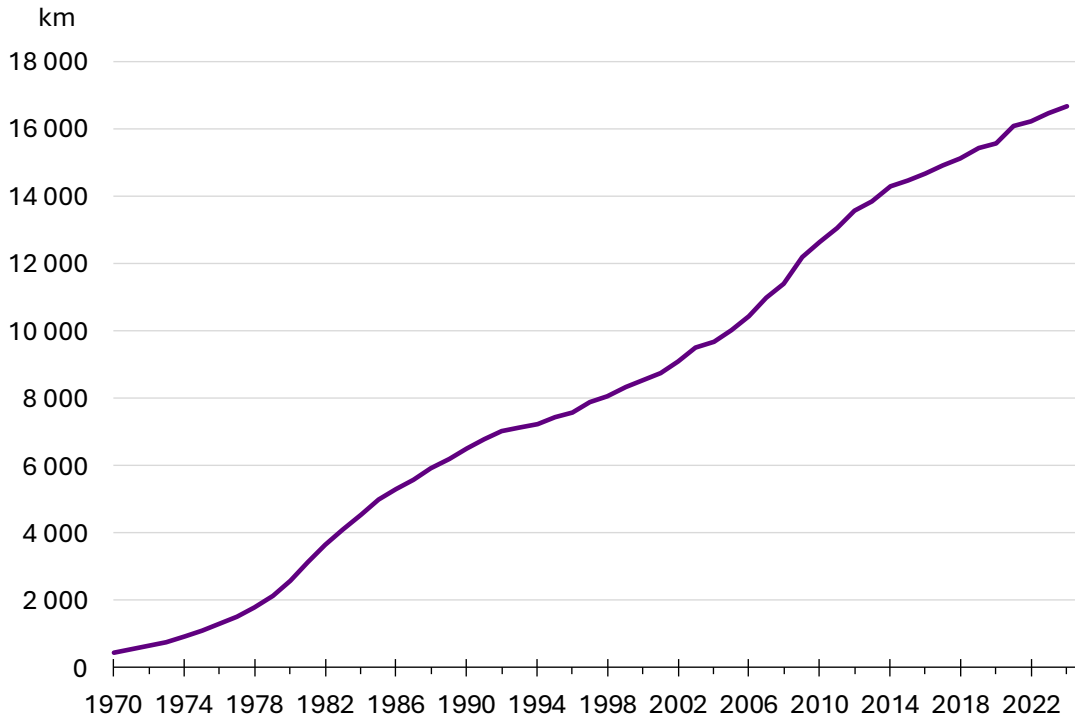


Figure 2. Total length of the DH networks

There were 107 power plants with a district heating capacity of 8 400 MW. Power output of these CHP plants totaled 5 200 MW. Moreover, there were 881 stationary heating plants as well as 55 separate heat recovery or heat pump units. The aggregated heat capacity of the above-mentioned was 14 400 MW. The companies also had 268 transportable heating plants with an overall capacity of 980 MW.

1.4 District heat production and fuel energy

The total supply of the district heat was 36 000 GWh of which 28 200 GWh was produced with fuels and 7 800 GWh was produced with heat recovery, heat pumps and electric boilers. Heat recovery and the heat production of the heat pumps and electric boilers have increased by 103 % over the past five years. 37,5 % of the total supply was produced in CHP plants or comparable cogeneration heat from gas turbines, gas engines or diesel engines. The amount of electricity produced in the CHP plants was 4 500 GWh.

In total, 41 600 GWh of fuels and electricity used in electric boilers were used to produce district heat and CHP electricity, of which 18 900 GWh was used for separate DH production.

The percentage distribution of the fuels used in 2024 is presented below in Figure 3. The energy sources of the district heat supply in 2023 and 2024 are presented in Figure 4.

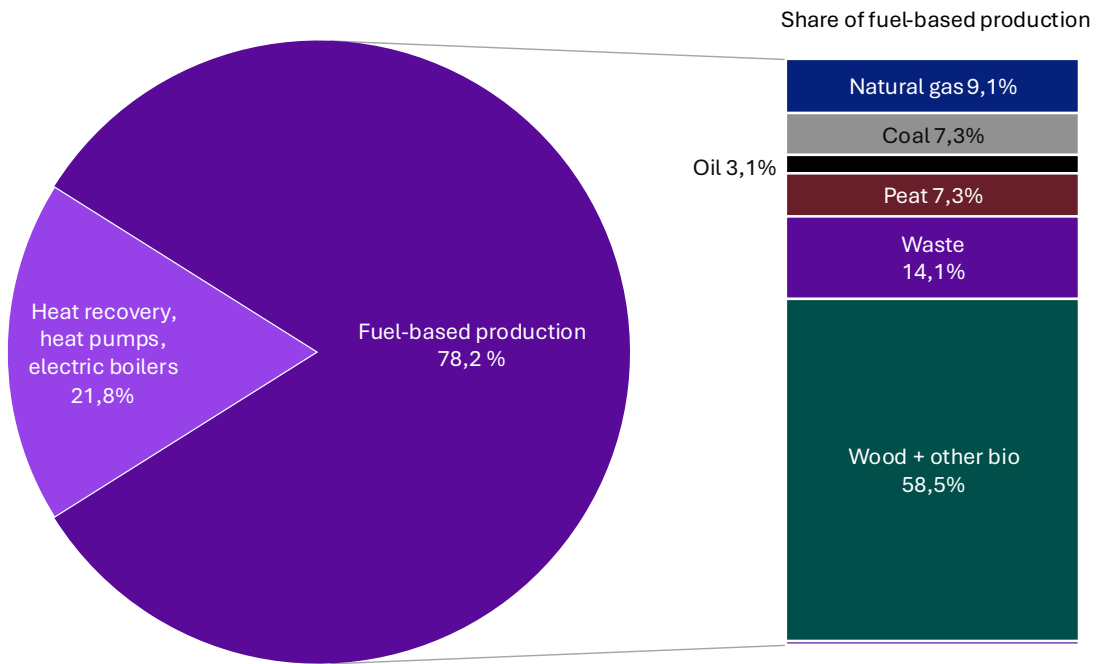


Figure 3. Fuels used to produce district heat and CHP electricity in year 2024.

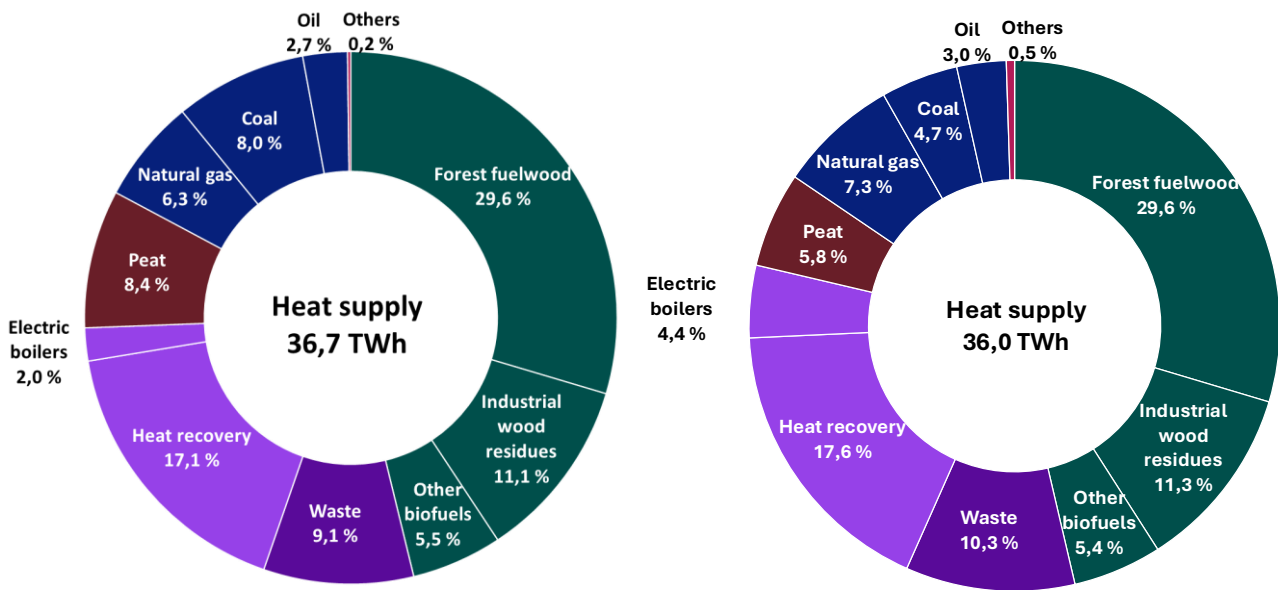


Figure 4. Energy sources of district heating supply in 2023 (left) and in 2024 (right)

1.5 Emissions

The specific emissions of district heating were 73 gCO₂/kWh which is 22 % less than in 2023. The fuels used in combined heat and power production have been allocated to district heat according to the benefit allocation method.

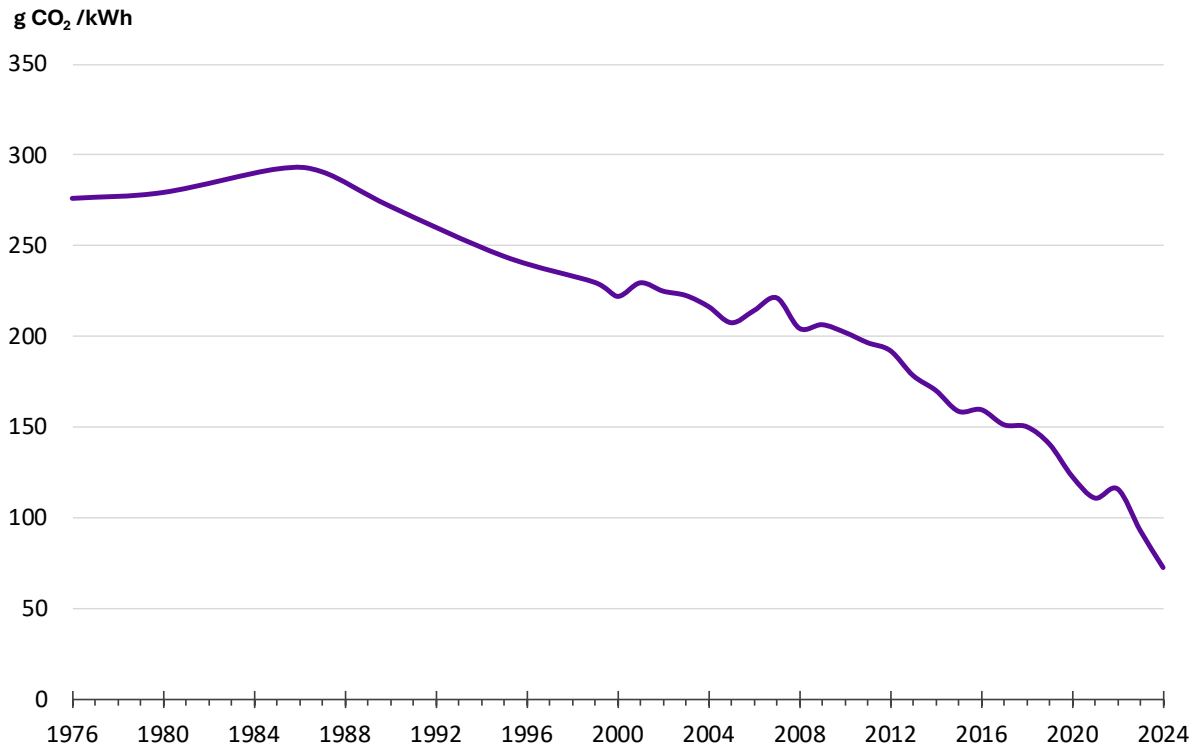


Figure 5. Specific emissions of district heating production (Sources: Statistics Finland, Finnish Energy)

1.6 Customers

At the end of 2024, the connected heat load of customers was 20 100 MW (+ 3,3 %). The number of customers by sector was distributed as follows: residential buildings 80 %, industry 4 % and other customers 16 %.

The heat delivery to the customers was 32 700 GWh in 2024 which was 1,5 % less than in 2023. Temperature corrected heat consumption increased by 0,6 %. The measured heat consumption as well as the temperature corrected heat consumption is presented below in Figure 6. The heat consumption was divided among sectors as follows: residential buildings 54 %, industry 9 % and other customers 37 %.

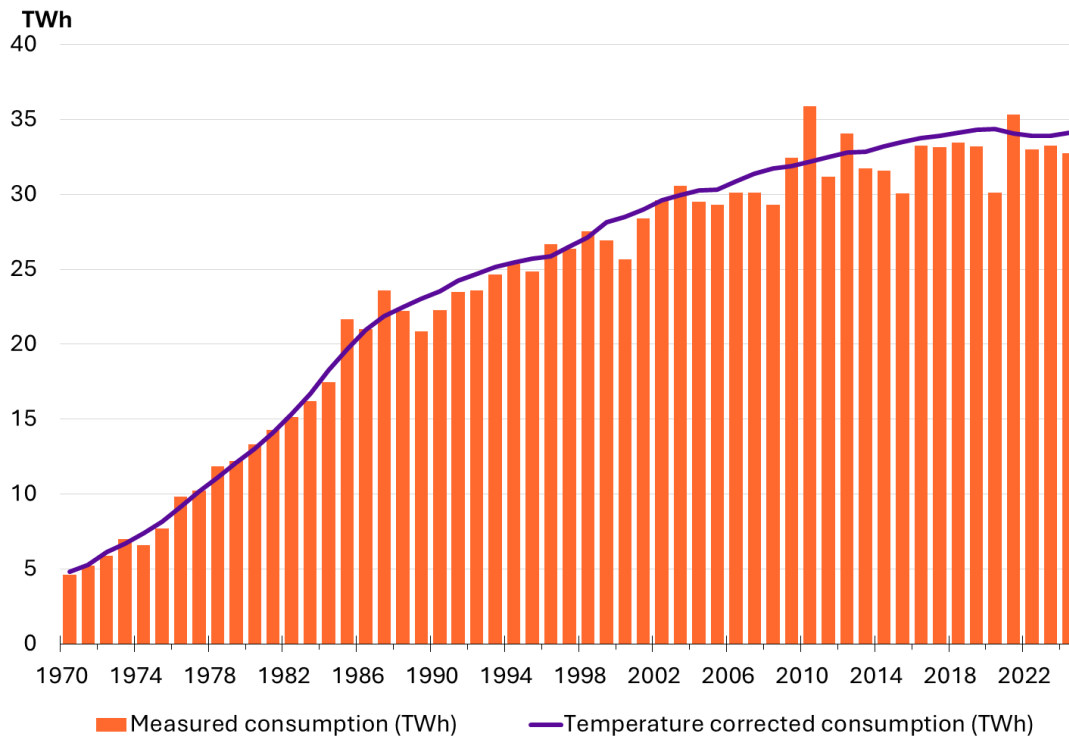


Figure 6. Measured DH consumption and temperature corrected consumption

The building volume of the customers was 1060 million m³ of which the share of residential buildings was 46 %, industry 13 % and other customers 41 %. The number of inhabitants living in the buildings heated by district heating was 3,0 million. The share of inhabitants living in buildings heated by district heat in each municipality is presented in the statistical Excel files in table 8.

1.7 Heat sales and sales proceeds

The heat sales to customers in 2024 was 32 700 GWh. The arithmetical average price for heat sales was 102,68 €/MWh. The average price weighted by the heat sales of each district heating company was 104,33 €/MWh. The arithmetical average price increased by 6,7 % and the weighted price increased by 3,6 % compared to the previous year. The share of district heating companies according to the average heat sales price (incl. VAT 24-25,5 % in 2024) is presented in Figure 7.

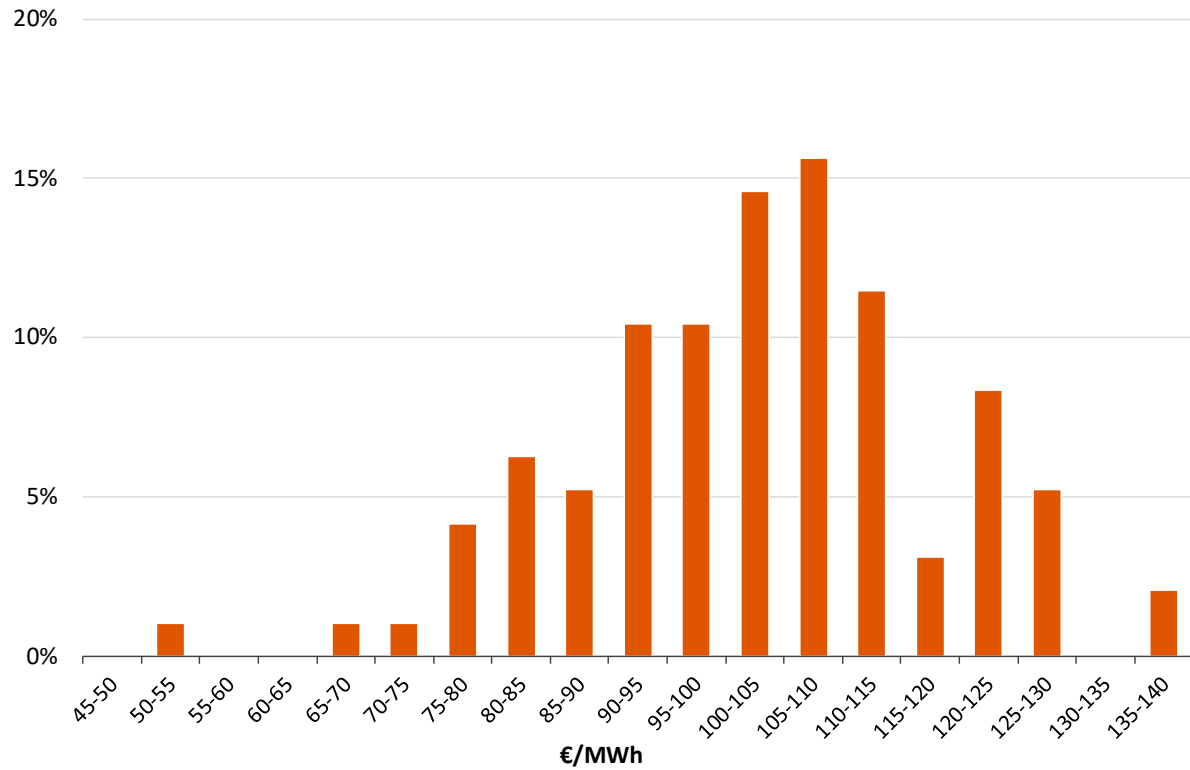


Figure 7. The share of district heating companies according to the average heat sales price (incl. VAT 24-25,5 %)

1.8 Specific heat consumption and heating degree day

The specific heat consumption in district heated buildings in 2024 was 34,1 kWh/m³ or 107,5 kWh/m². This value includes also heating of the hot tap water. Temperature corrected specific heat consumption increased by 0,6 % compared to the previous year and it has decreased by 20 % since 2000. (Figure 8).

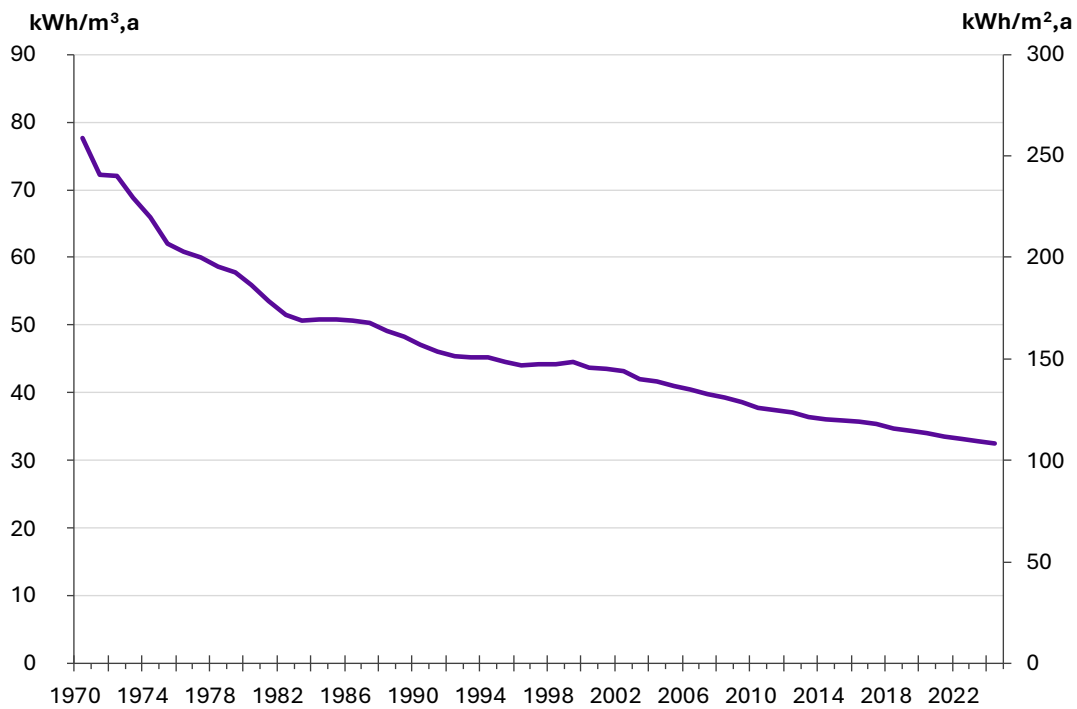


Figure 8. Specific heat consumption in district heated buildings

Year 2024 was slightly warmer than the normal period of 1991...2020. The heating degree days (describing the heating requirement) for 2024 were 6 % lower than the average during the years 1991...2020.



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