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DH consumption in Lithuania

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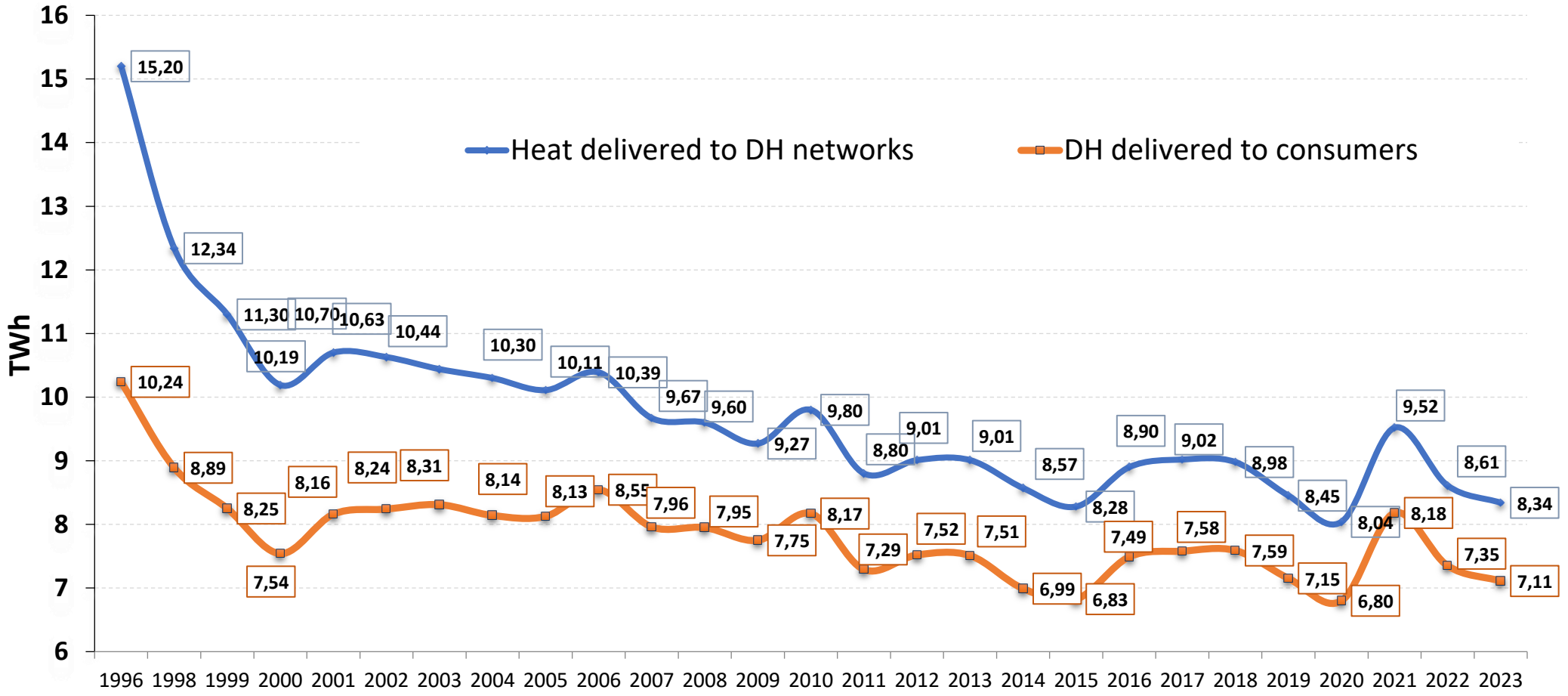
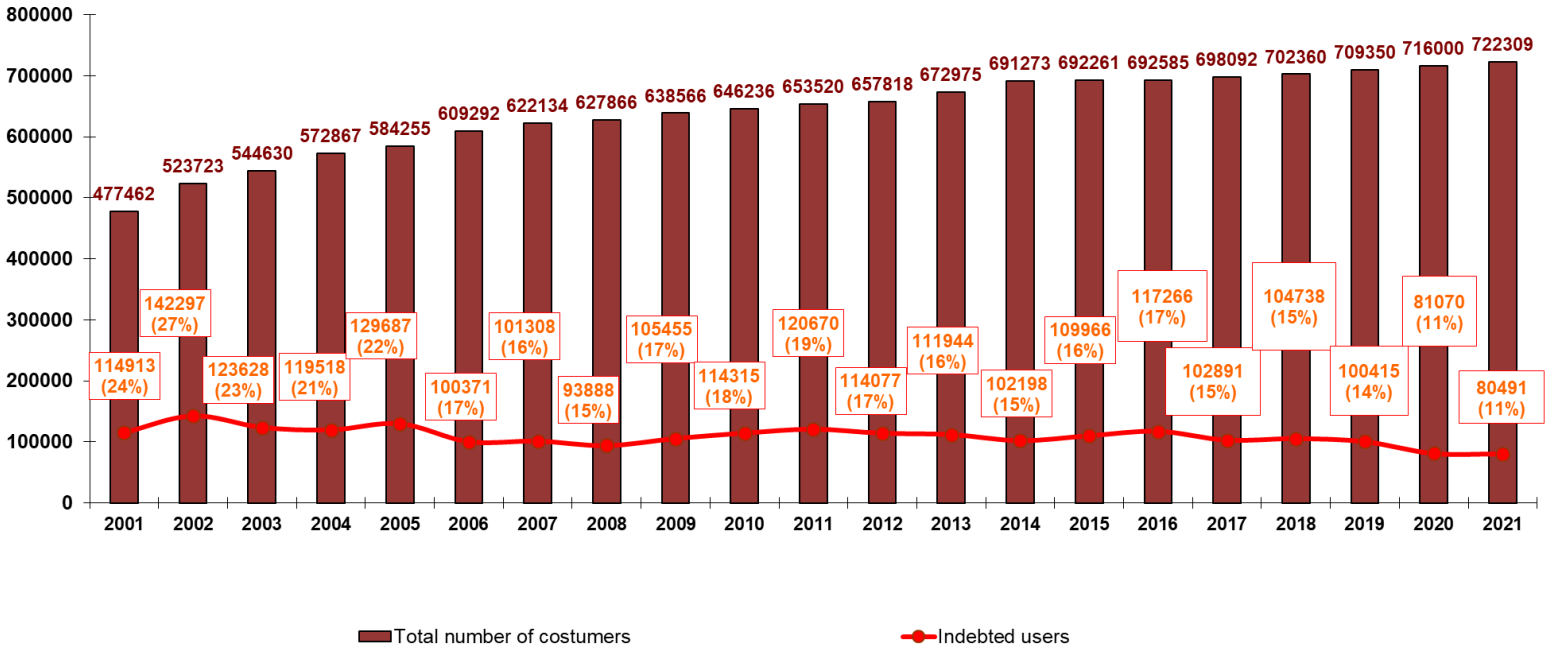
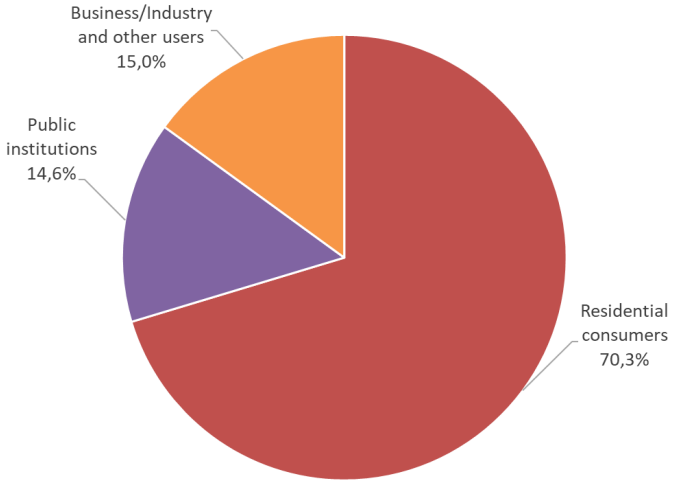
Average outdoor air temperature and monthly heat consumption during different heating seasons



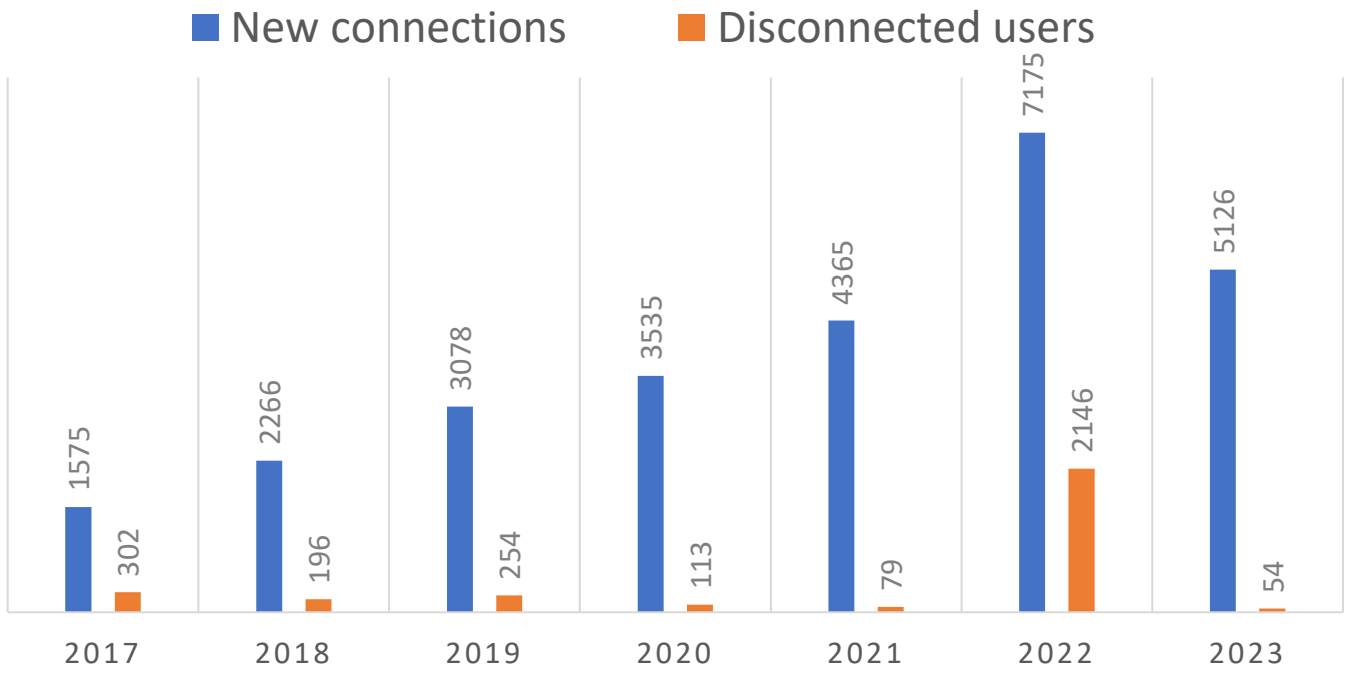
DH consumers





- Over the last decade, the total number of DH consumers has increased by more than 10%
- Relative number of consumers in debt for heating services has decreased: from 17% (2013) to 8% (2023)

DH development



Driving forces that favour DH expansion:

- Since 2021, A++ energy class requirements applied for newly constructed buildings (building must use a low-emission heat production system)
- Since 2019, heat supplied from (DH) networks has met these requirements.
- Amendments to the Environmental Protection Act and other related laws came into force in May 2024, prohibiting the burning of solid fossil fuels (coal, lignite, peat) in cities with populations of more than 50 000, as well as in resort towns, starting from 1 May 2026.

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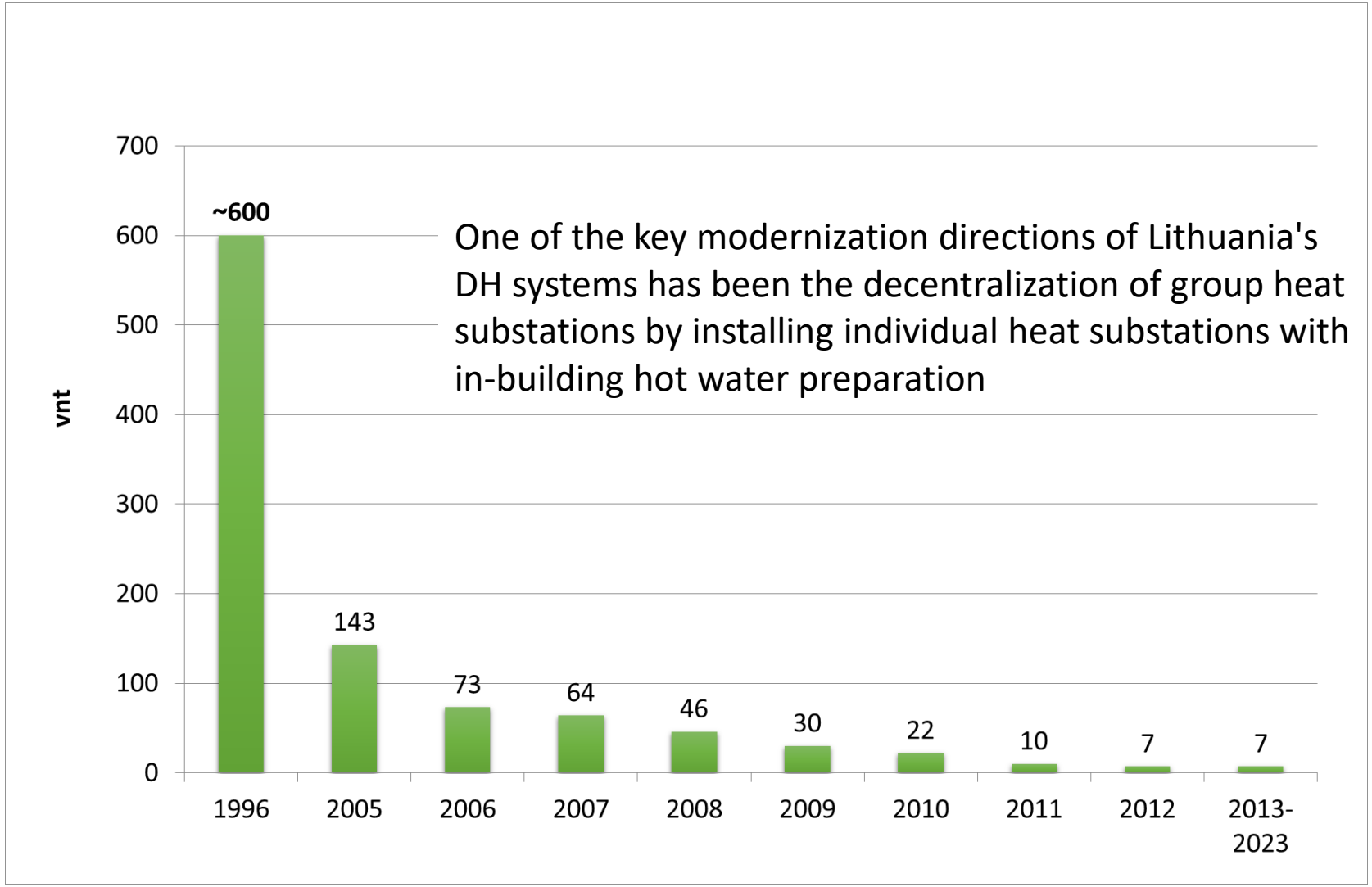
Group heat substations in operation 1996-2023



Average heat consumption and heating costs in buildings with different energy performance levels

	I Modern, newly constructed and fully renovated apartment buildings	II Medium efficiency, partially renovated buuildings	III A standard Soviet-era apartment house, uninsulated and equipped with old, inefficient internal heating and hot water systems.	IV An old, severely deteriorated, extremly low energy efficiency apartment building
				
Average heat consumption, kWh/m^2	~8	~14	~19	~32
Heat consumption in an average (60 m^2) apartment	~480	~840	~1140	~1920
Average heat price (2024), ct/kWh excl. VAT	~7	~7	~7	~7
Average heat cost ct/ m^{2}excl. VAT	~0.56	~0.98	~1.33	~2.24
Average heat bill for (60 m^2) apartmment	~33.6	~58.5	~79.8	~134.4

- Since 2005, only 4 200 apartment buildings have been renovated, accounting for about 11% of the total housing stock.
- Around 30 000 Soviet-type apartment buildings are still awaiting renovation, approximately 15 000 of which are connected to DH systems

Payments for heating vary depending on the building's energy condition, maintenance, heat regulation, and similar factors.

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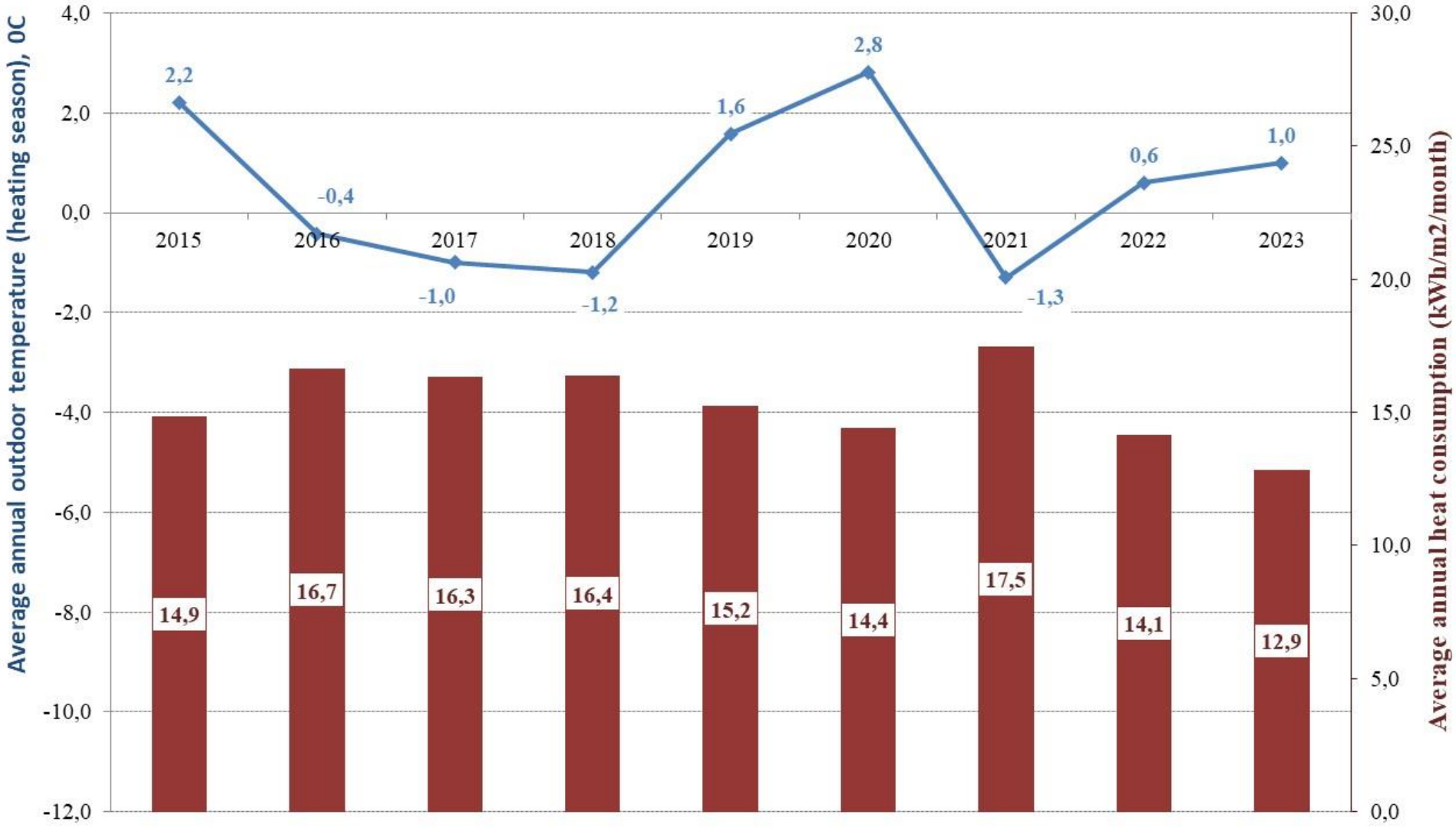

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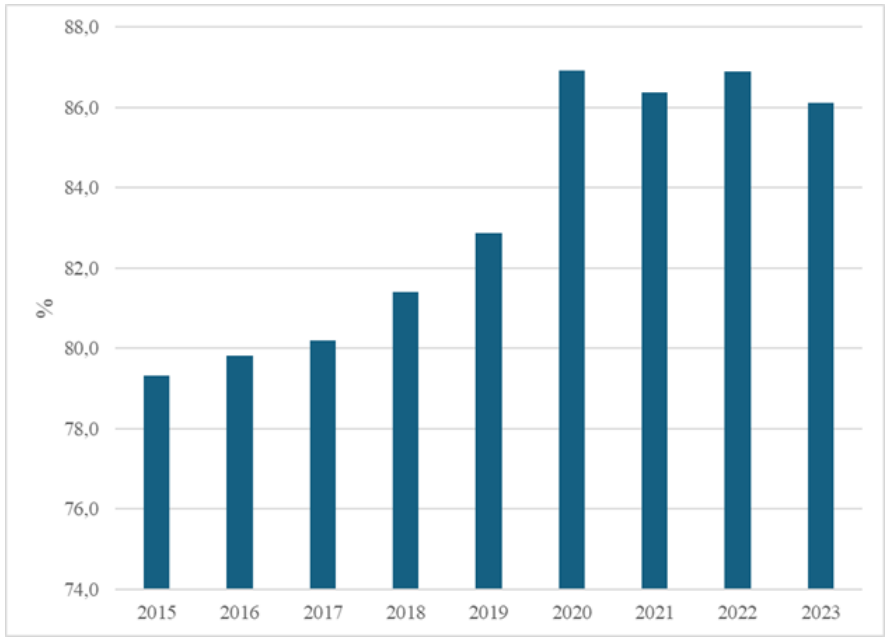
Heating control feature in apartment buildings

Share of heat substations with individual automatic heating control in residential buildings

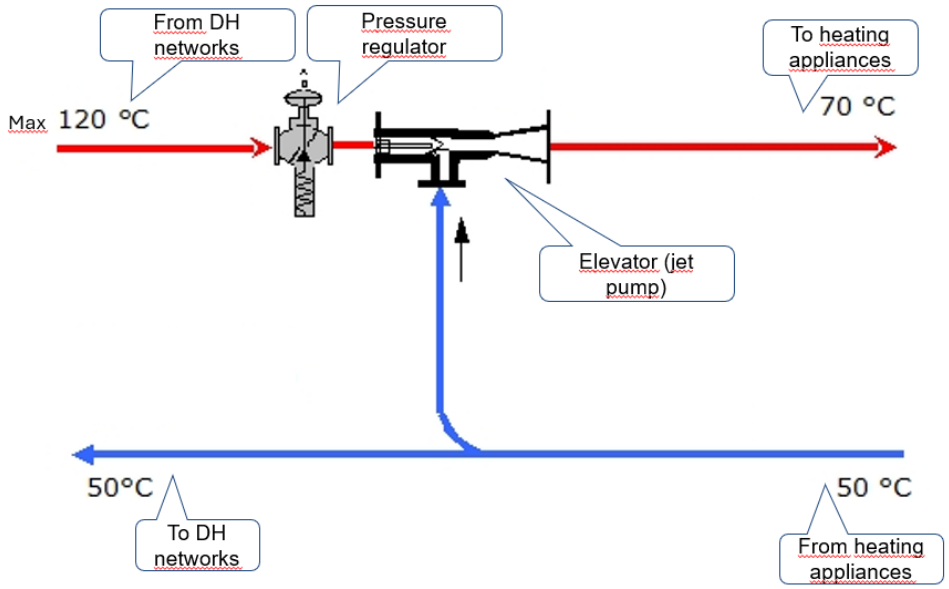


- Up to 2010, heat substations were considered part of the DH technological infrastructure and were owned by DH operators. After amendments to the Heat Law substations were reclassified as an “inseparable part” of the building’s private property.
- Consequently, modernization and digitalization of heat substations have practically stopped due to the passivity and low level of organization among apartment owners.
- Currently 13% of buildings still have outdated, non-automated heat substations that cannot efficiently respond to outdoor temperature fluctuations.

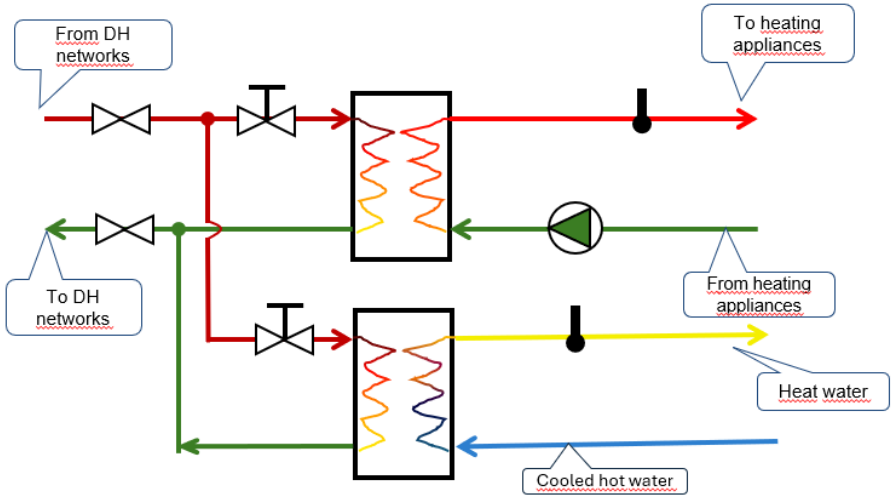
In 2022, Mandatory Requirements for Heating and Hot Water Supply Systems in Apartment Buildings were adopted: all non-compliant systems in multifamily apartment buildings must be modernized by July, 2026:

- buildings must be equipped with automatic heat substations that allow regulation of heat consumption based on outdoor temperature
- metering devices must be installed (main heat meter, domestic water meter before heat exchanger, hot water meters in apartments)
- equipments must ensure uniform indoor temperature throughout all heated spaces in the building

Old and modern heat substations in apartment buildings

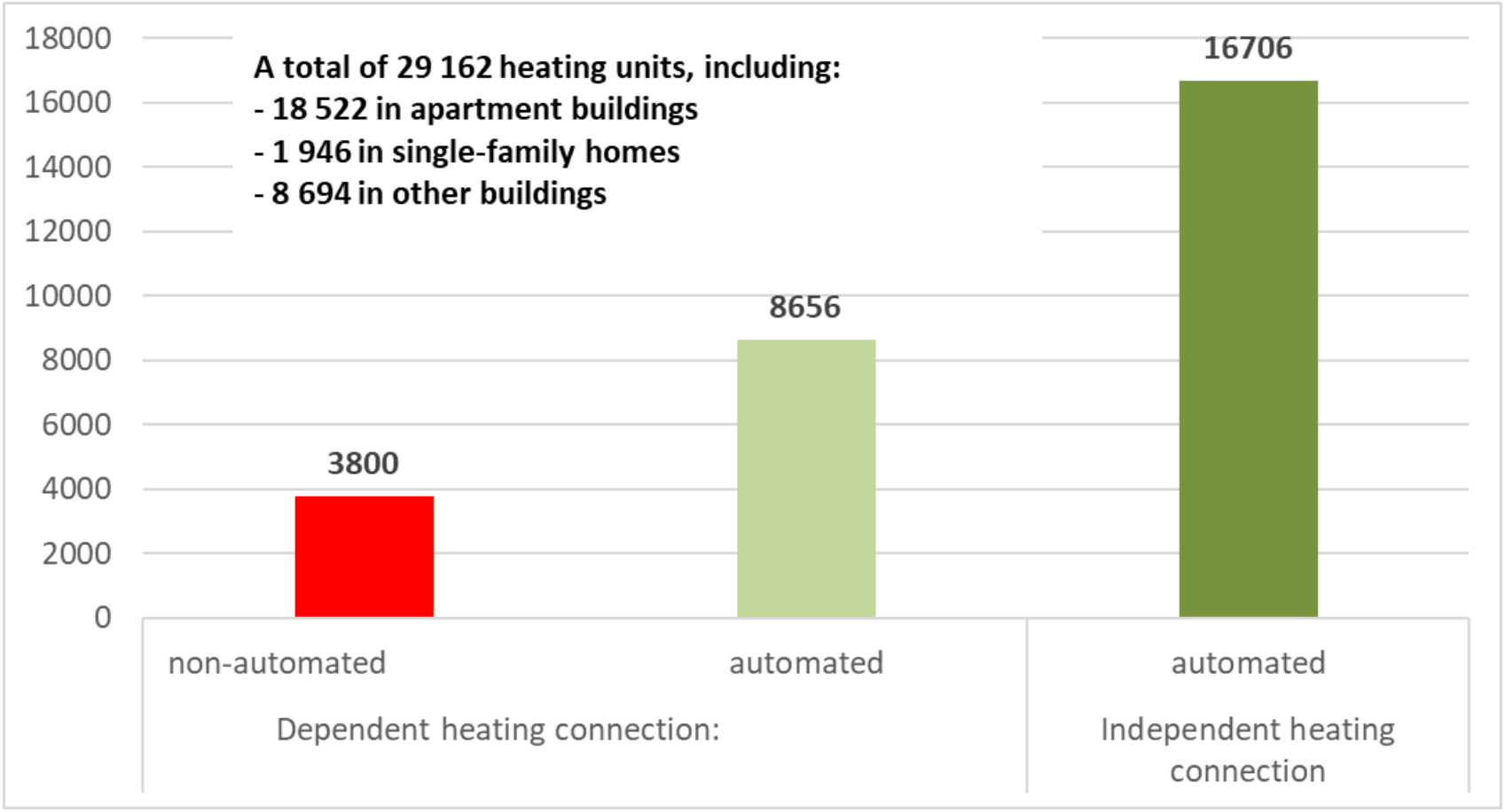


The heat substation of dependent heating connection: without hot water production

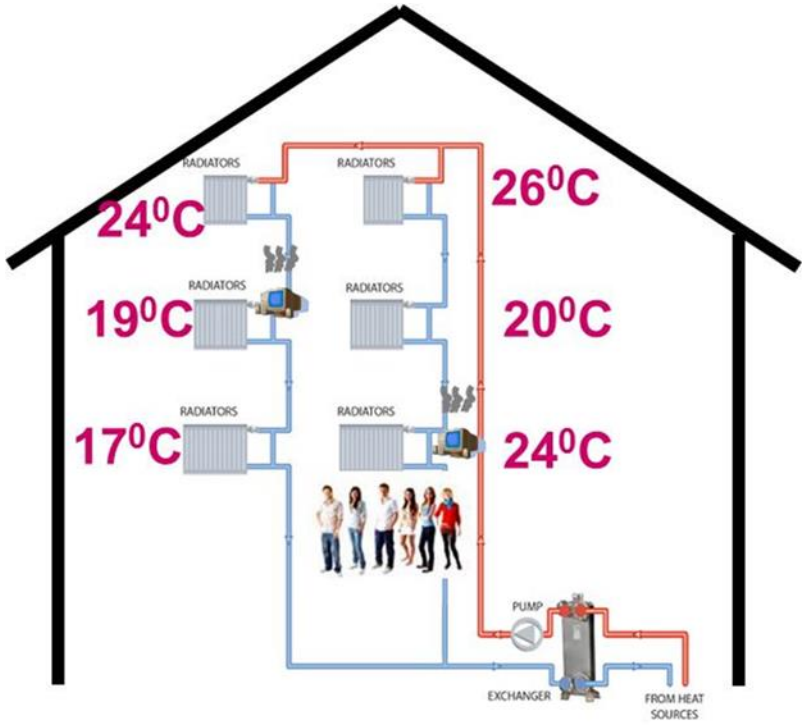


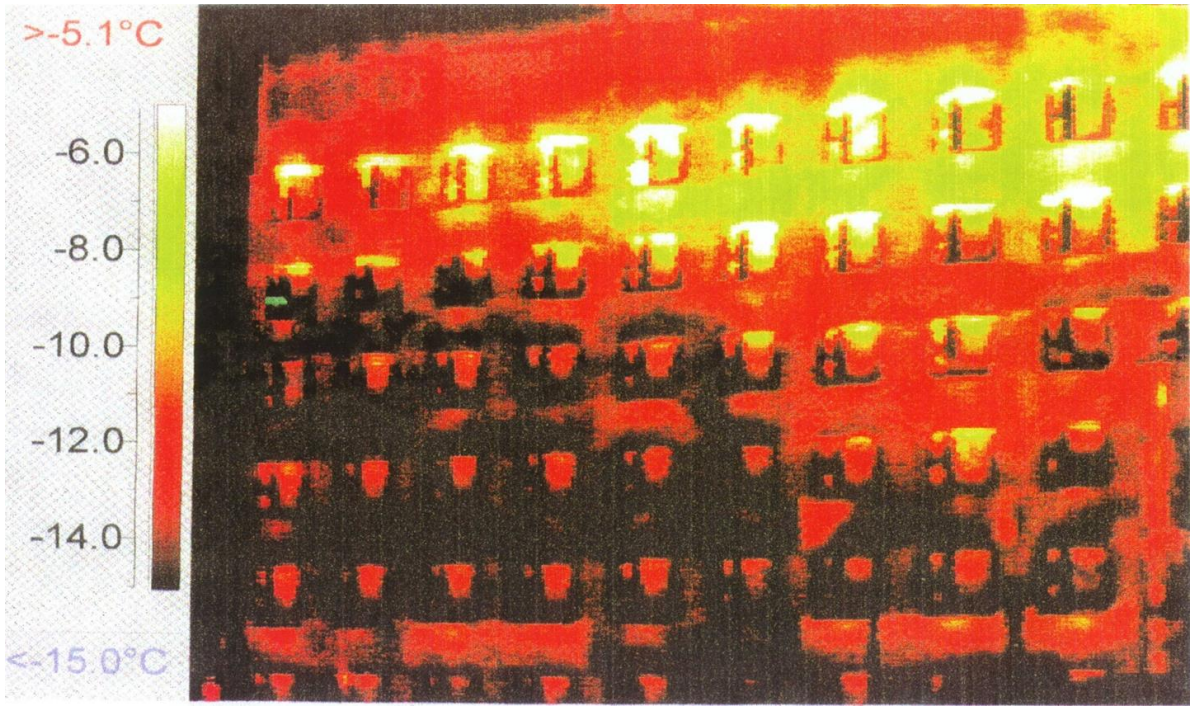
The heat substation of independent heating connection (automated) : with hot water heat exchanger

Individual heating substations in residential buildings



Some flats are overheated, in others too cold,
even though everyone pays the same!



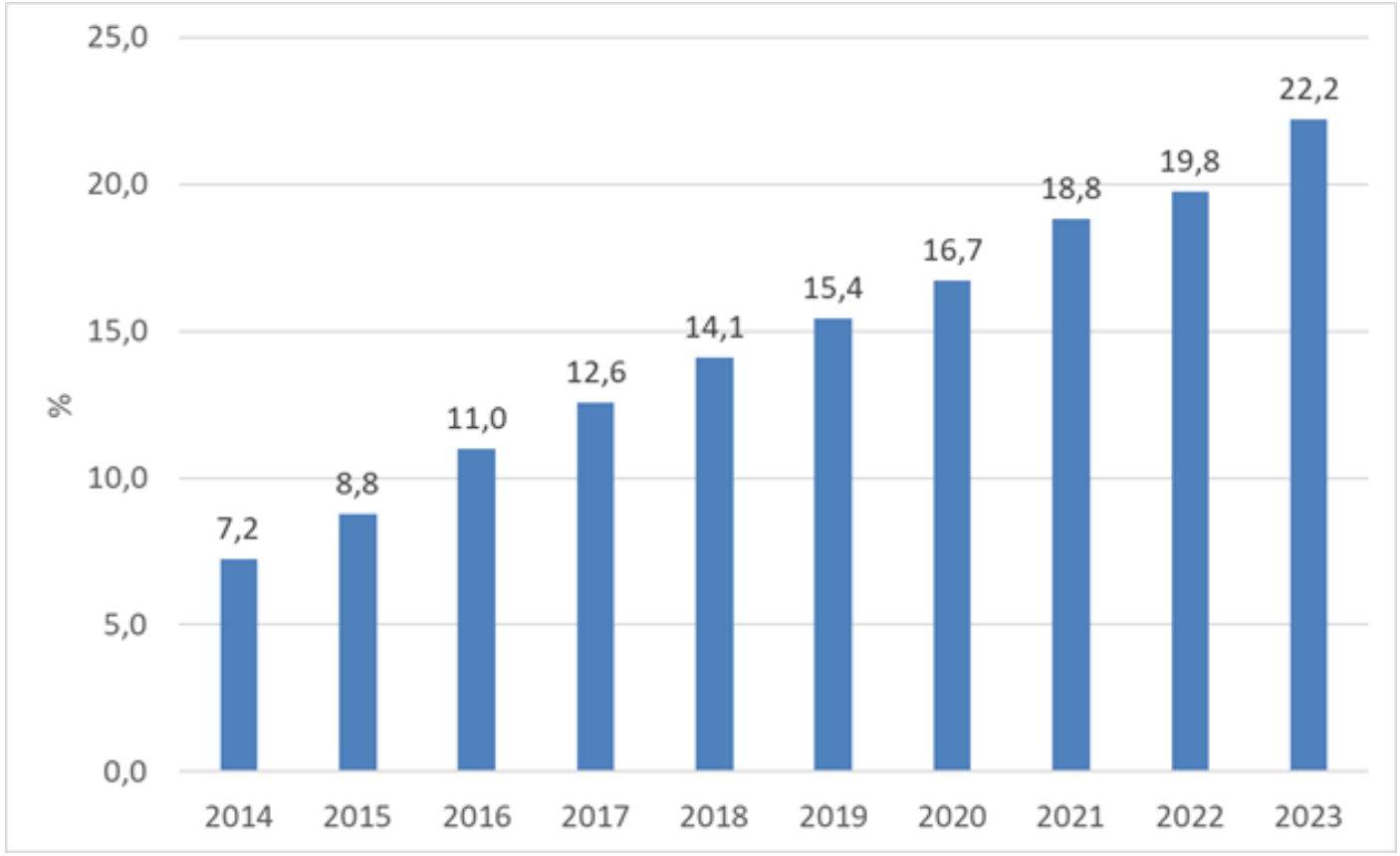


State aid

No.	Measure	Measure to achieve minimum energy efficiency	Measure to achieve high energy efficiency
1.	Installation of an independent-type heat substation for space heating and domestic hot water preparation;	+	+
2.	Balancing of the heating system;	+	+
3.	Balancing of the domestic hot water system	+	+
4.	Installation of thermostatic valves on indoor heating devices in the building;	+	+
5.	Installation of individual heat metering for each flat owner (heat meters or heat cost allocators);	+	+
6.	Installation of domestic hot water metering for each flat;	+	+
7.	Implementation of smart metering and remote data reading systems;	+	+
8.	Installation of energy-efficient pumps for heating and domestic hot water systems	-	+
9.	Replacement of heating devices with more efficient ones	-	+
10.	Installation of reflective panels behind heating devices	-	+

- Comprehensive modernization of apartment buildings
- Separate support scheme (introduced in 2019) for upgrading internal heating and hot water systems in old apartments. This program enables residents to replace outdated elevator-type heat substations with modern automated ones and renovate internal heating systems.

Smart metering



Share of apartment buildings with heat meters or allocators in flats

- EU Energy Efficiency Directive: since 2020, member states have been required to install remote-reading meters and allocators in all newly constructed buildings.
- By 2027, DH suppliers will be obliged to install individual heat meters or allocators in consumer apartments (or other premises) if there are technical capabilities for individual regulation and if it is economically feasible.
- 30 000 heat meters are installed at the heat substations in buildings, about 60% of which are equipped with remote data reading systems.

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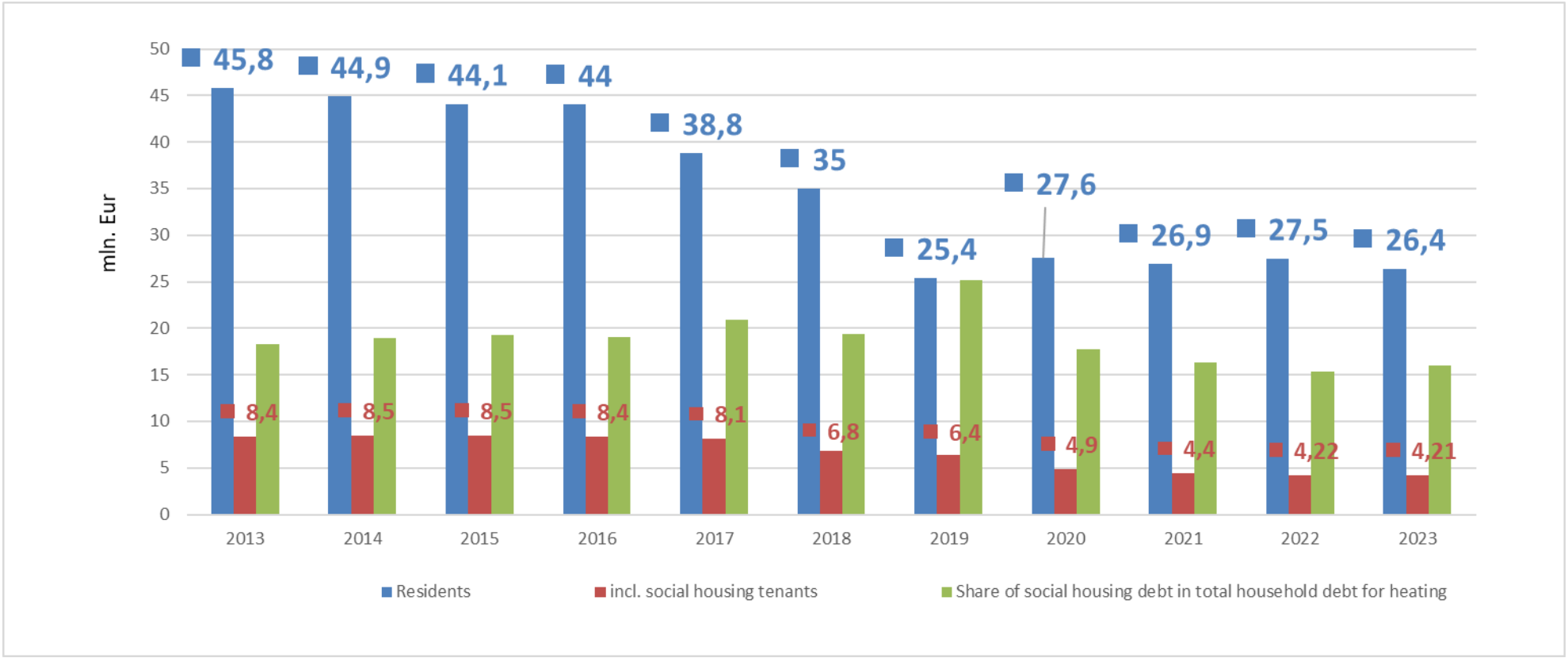
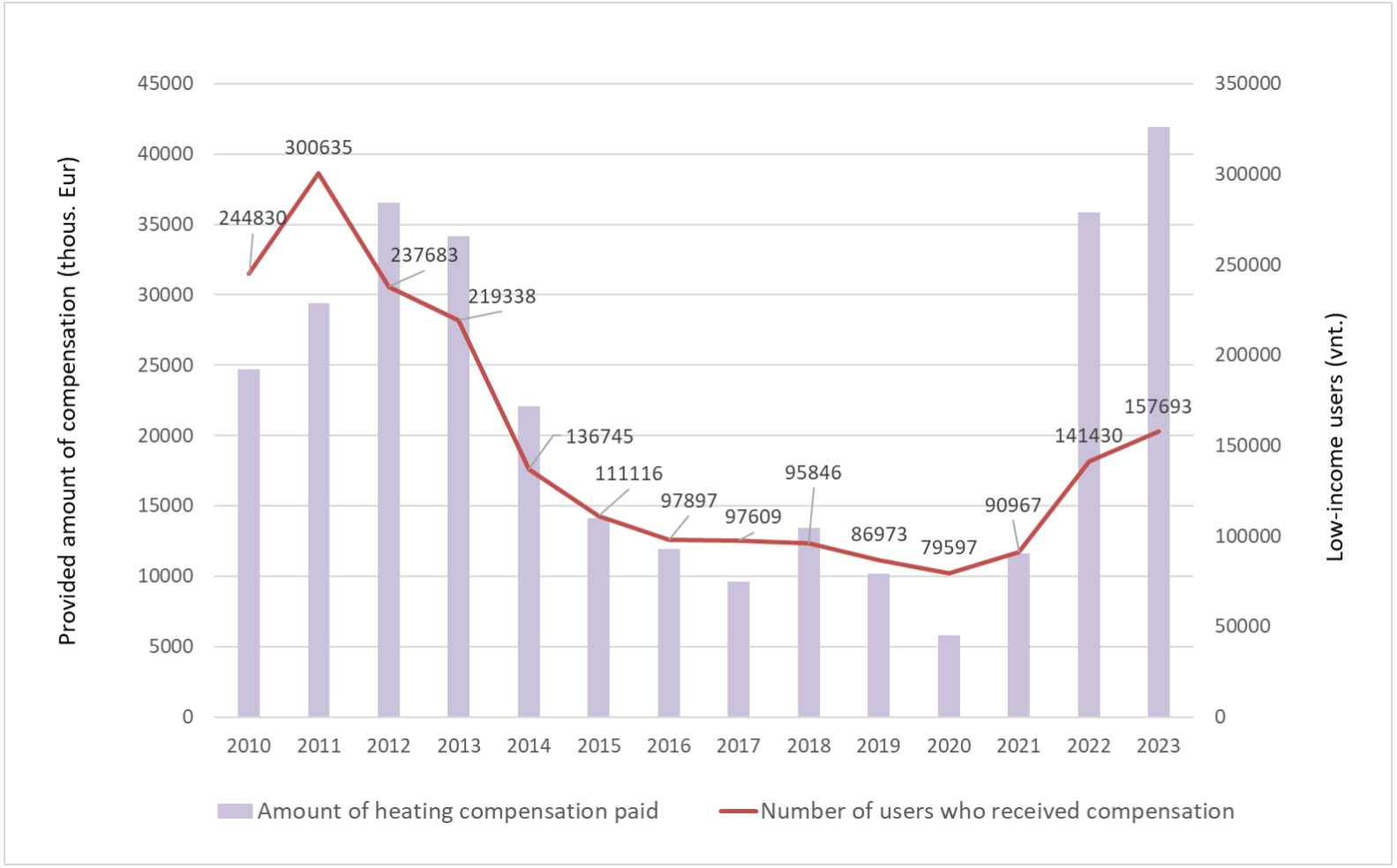
Consumer debts

- In 2023, about 8% of heat consumers had unpaid bills, especially in social housing. This makes it difficult for DH companies to recover costs and increases heating prices.
- Energy poverty is a significant barrier as well



Compensation of payments for heating and hot water for low-income families



- applied since 2003
-Municipal authorities are responsible for the distribution of such funds

- 9% VAT rate (instead of 21%) is applied to thermal energy supplied for heating and hot water preparation in residential premises. Due to the energy crisis, the government temporarily approved a 0% VAT rate for domestic users from January 2022 to April 2024. The VAT reduction was compensated from the State budget.

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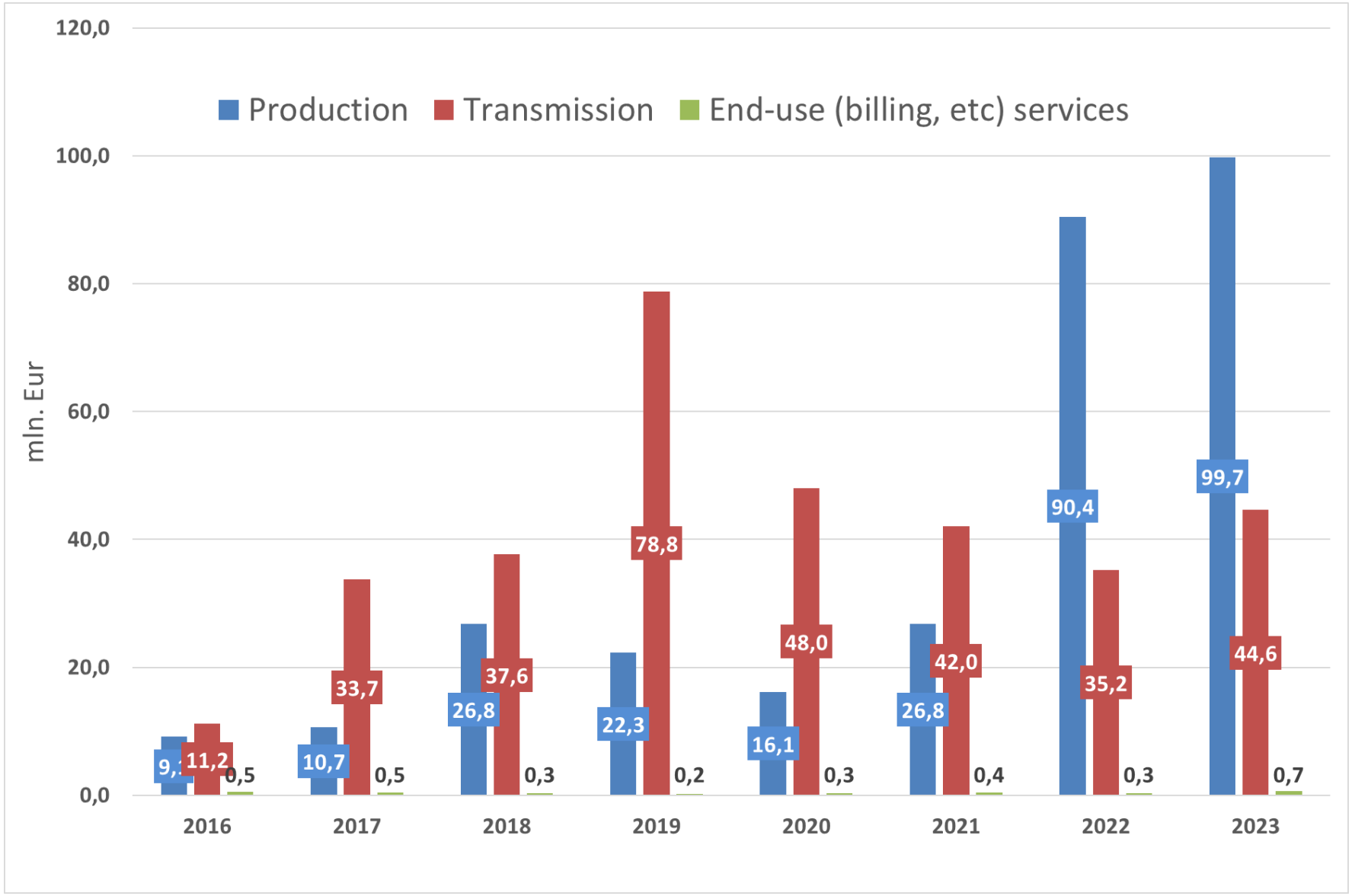
Investments in the DH sector



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State aid for DH upgrade (EU funds) (2004-2019)

TOTAL:

~ 363 mln. Eur support (2004 – 2027 m.)

2004-2006 EU Structural funds

- ~ **15** mln. eur

2007-2013 m. EU funds

128 mln. eur

- **67** mln. eur DH network modernisation
- **60** mln. eur biomass boiler plants and bio CHP
- **1** mln. eur efficiency (economaizers)

2014-2020 m. EU funds

118 mln. Eur

- **98** mln. Eur DH network modernisation
- **14** mln. Eur biomass boilers
- **6** mln. Eur small scale bioCHP

2021 – 2027 m. EU funds

102 mln. eur

- **13,5** mln. Eur modernisation of DH supply networks for low temperature 4G mode)
- **13,5** mln. Eur digitalisation (inlet heat meters with remote data reading function)
- **9,5** mln. Eur high-efficiency biomass boilers
- **26** mln. Eur small scale bioCHP
- **32** mln. Eur (solar plants, heat pumps, heat storage and waste heat technologies)

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Thank you for attention...