

Country Presentation: Solutions for incentivizing renewable heating and cooling

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Energy Regulatory Office of the Czech Republic



About the Energy Regulatory Authority CZ

[Energy Regulatory Office | eru.cz](http://eru.cz)

- Founded 1st January 2001, run by a five member board – the chairman is Mr. Jan Šefrámek
- Administrative authority responsible for regulation in the energy sector (Electricity, Gas, Heat), with a separate chapter of the state budget.
- Its task is to protect the legitimate interests of consumers in the energy sector and licensees.

Competences:

- Price controls
- Support for competition in the energy industries
- Supervision over markets in the energy industries
- Support for the use of renewable and secondary energy sources, combined heat and power generation, biomethane, decentralized energy production,
- Licensing of businesses in the energy sectors
- Supports the development of the internal market in electricity and gas within the European Union and the development of regional energy markets,

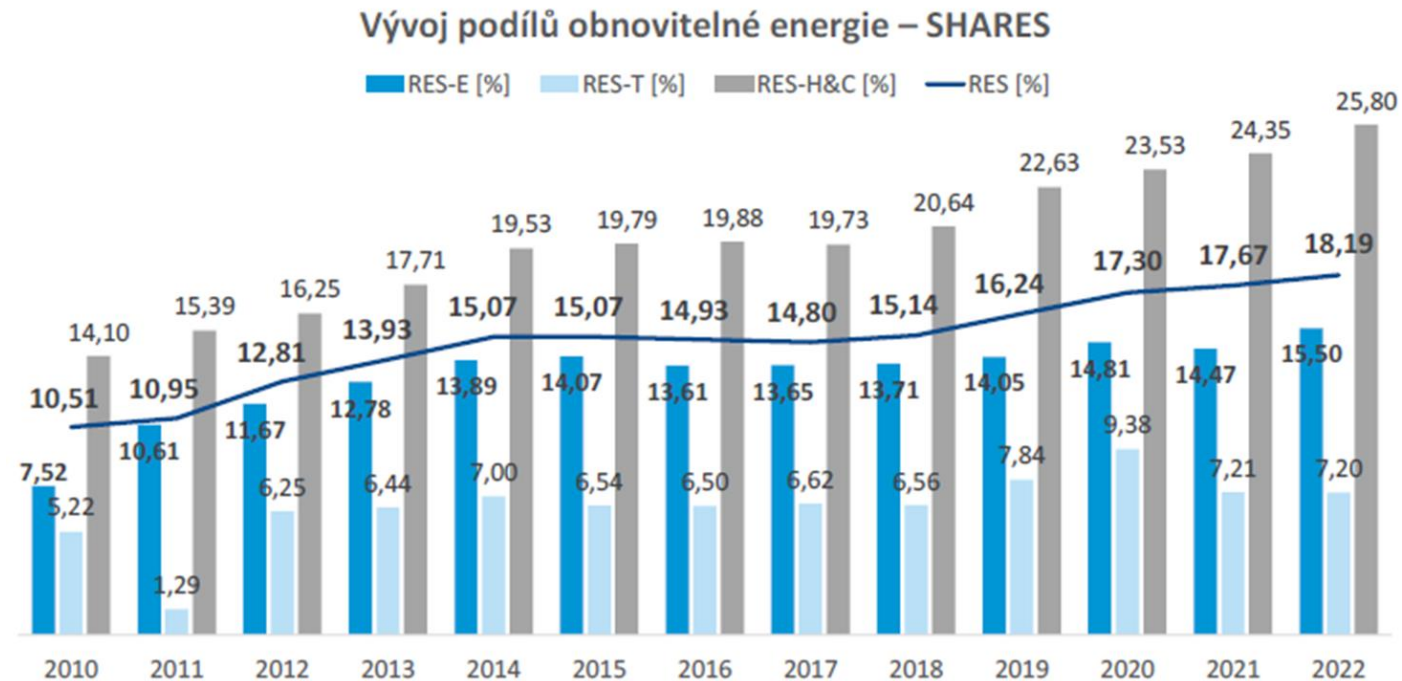
General overview for the Czech Republic H&C

- Gross final consumption of H&C
 - RES H&C
- RES H&C shares CR in 2023

507 194 TJ

113 510 TJ

cca 27%

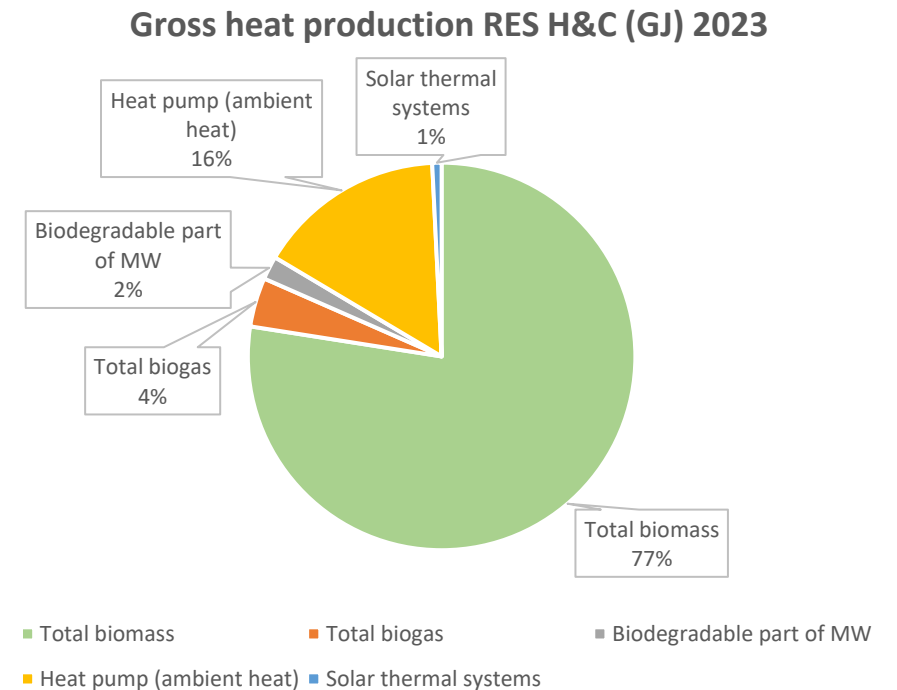


Source: Czech authorities

Overview for the Czech Republic RES Heat

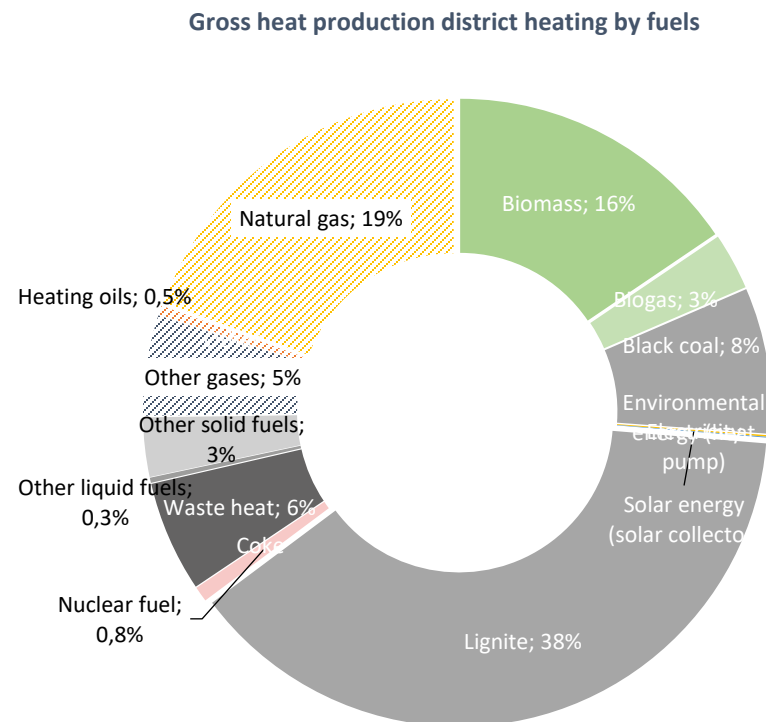
Gross heat production RES H&C (GJ) 2023	TJ	TJ	TJ	Share of heat from RES (%)
Total biomass	86 510, 880			76,21%
Non-household biomass		26 138,33		23,03%
<i>Fuel wood</i>			264, 253	0,23%
<i>Wood chips, etc.</i>			14 462, 488	12,74%
<i>Cellulose leachate</i>			10 084, 956	8,88%
<i>Non-agglomerated plant materials</i>			485, 483	0,43%
<i>Briquettes and pellets</i>			841, 146	0,74%
<i>Other biomass</i>			0	0,00%
<i>Liquid biofuels</i>			0	0,00%
Household biomass		60 372, 555	60 372, 555	53,19%
Total biogas	4 579, 586	4 579, 586		4,03%
<i>Municipal sewage treatment plant</i>			536, 290	0,47%
<i>Industrial sewage treatment plant</i>			217, 046	0,19%
<i>Biogas stations</i>			3 721,77	3,28%
<i>Landfill gas</i>			104,486	0,09%
Biodegradable part of MW	2 180, 963	2 180, 963	2 180,96	1,92%
Heat pump (ambient heat)	19 371, 186	19 371, 186	19 371, 186	17,07%
Solar thermal systems	868, 360	868, 360	868, 360	0,77%
Total	113 510, 975	113 510, 975	113 510, 977	100,00%

Source: Czech authorities



District heating systems - heat production by fuels

Heat production district heating gross TJ	264 595,3
Biomass	41 598,8
Biogas	7 990,6
Black coal	20 014,6
Electricity	229,2
Environmental energy (heat pump)	126,5
Solar energy (solar collector)	1,0
Lignite	101 266,5
Nuclear fuel	2 130,1
Coke	0,0
Waste heat	15 672,4
Other liquid fuels	676,0
Other solid fuels	8 353,5
Other gases	14 147,6
Other	0,0
Heating oils	1 171,1
Natural gas	51 217,3



Most of the heat for 2023 was produced from lignite (38%), followed by natural gas (19%) and biomass (16%).

Incentivizing RES H&C - investment grants

- **HEAT Program – Modernization of District Heating Systems**

- This program supports projects aimed at utilizing renewable energy sources (RES) and low-carbon technologies for heating. It includes measures such as fuel base transformation and modernization of heat distribution networks. Until 2030, up to CZK 87 billion from emissions allowance sales is allocated for heat suppliers.

(mzp.cz)

- **RES+ Program – New Renewable Energy Sources in the Energy Sector**

- This program supports the construction of new non-fuel renewable energy sources, such as photovoltaic power plants, wind farms, and small hydropower plants. Eligible recipients include licensed energy businesses, energy communities, regions, municipalities, and individuals.

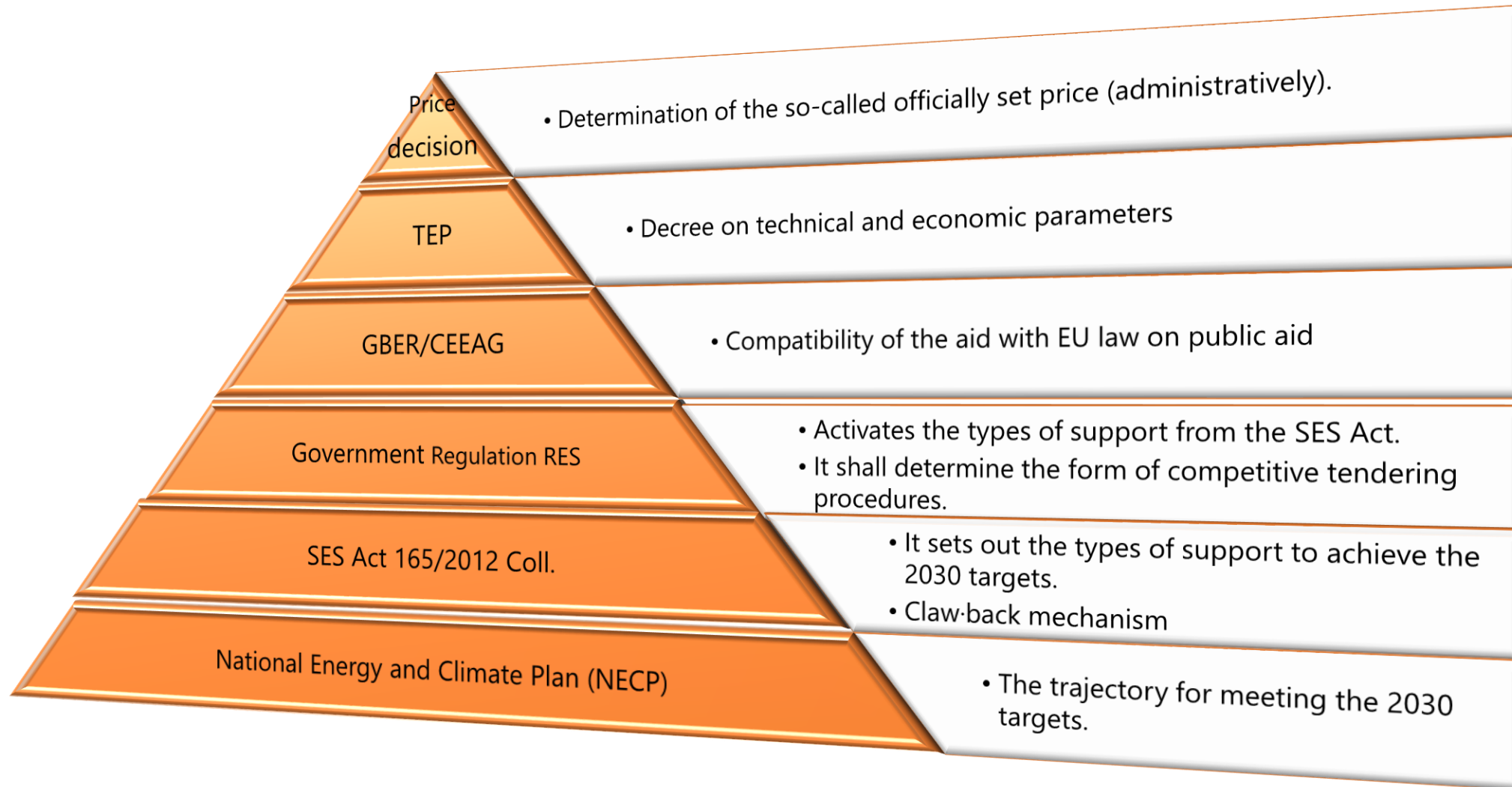
(sfzp.cz)

- **ENERG Program – Energy Efficiency and Consumption Reduction**

- This program focuses on measures to improve energy efficiency and reduce greenhouse gas emissions in industry, business, public buildings, and the residential sector. It supports energy efficiency improvements and emissions reductions in industrial production facilities within the EU ETS system.

(sfzp.cz)

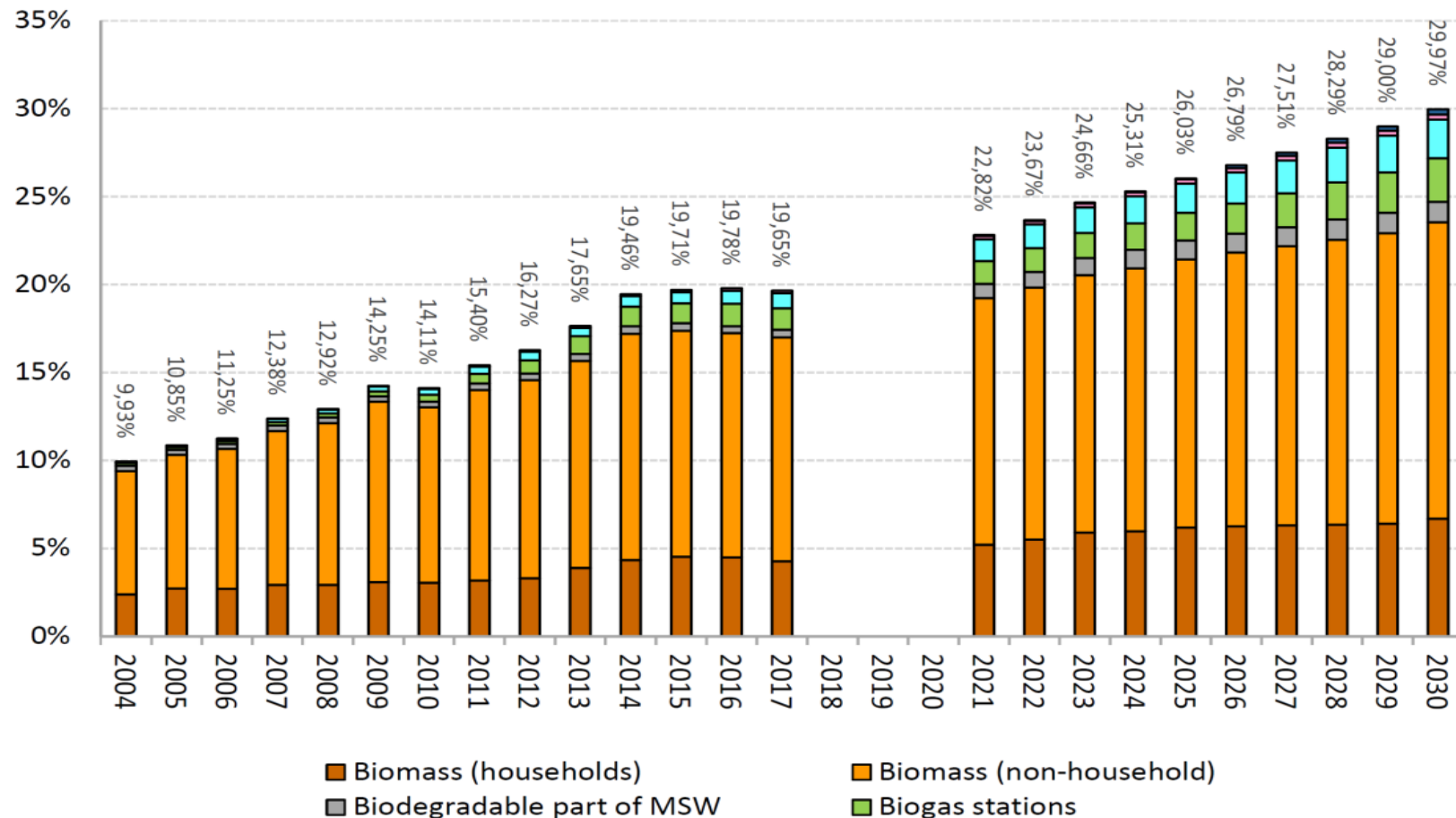
Incentivizing RES H&C - operating support



National Energy and Climate Plan (NECP)

[NCEP](#)

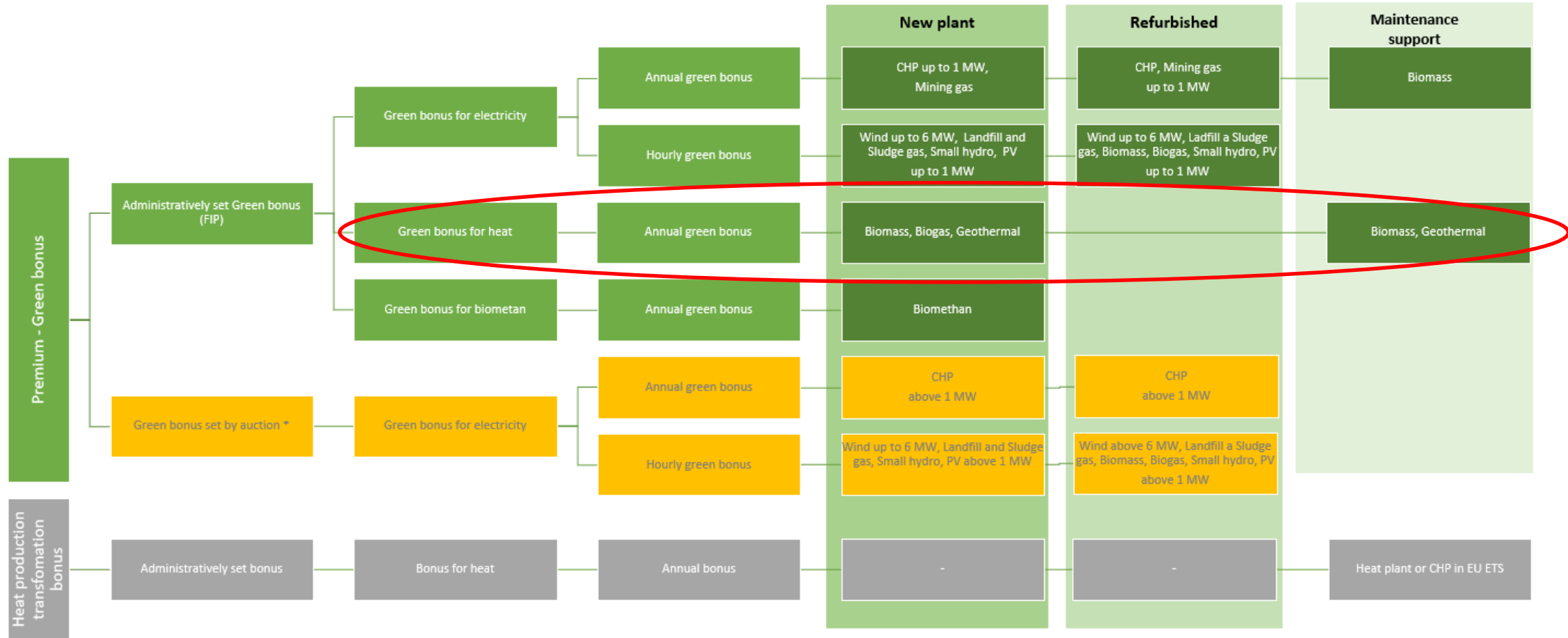
Contribution of individual sources to the share of RES in the heating and cooling sector (in %)



Source: Czech authorities

New schemes of operating support since 1.1.2022* set by SES Act**

* Starting support in a given scenario **Act on the Supported Energy Sources (SES) [165/2012 Coll.](#)



Government Regulation

- Activates the types of support from the SES Act and total supported capacity (MWt).
 - For the period 2022 - 2024 No. [189/2022](#) Coll.
 - For the period 2025 - 2027 No. 459/2024 Coll.

Example for 2025:

Support for heat production plants 2025	Installed thermal output of heat production	Form of aid	Total supported capacity (MWt)	Amount of heat from a renewable source delivered to the heat distribution system of the heat supply system in case of co-firing (GJ)
Heating plants-biomass	Above 200 kWt	Green bonus	20	
Heating plant (CHP)-biomass	Above 200 kWt	Green bonus	170	
Maintenance support for heat-biomass			without any limits	6 000 000
Maintenance support for heat generated by geothermal energy			0	

Compatibility with EU law – State aid

CEEAG

- State Aid [SA. 104685 \(2022/N\)](#) – Czechia **Support for heat from renewable energy sources** with an output **above 500 kW**
 - RES heat production plants using biomass energy with an installed thermal capacity above 500 kW put into operation from 1 January 2023 to 31 December 2025.
- State Aid for **Maintenance heat support** for RES heat production plants using biomass **above 1 MWt**
 - in an ongoing phase

GBER – according to Article 43

- **New RES heat production plants** using **biomass** energy with an installed thermal capacity **above 200 kW and up to 500 kW** put into operation from 1 January 2022.
- New RES heat production plants using geothermal energy with an installed thermal capacity above 200 kW and up to 1 MW or up to 6 MW in the case of renewable energy communities, put into operation as from 1 January 2022.
- **RES heat production plants** using **biomass** energy and geothermal energy **for maintenance heat support** with an installed thermal capacity above 200 kW and up to 1 MW or up to 6 MW in the case of a renewable energy community.

Operating support for heat (SES Act)

- § 24 (2) *In the case of a heat production plant put into operation as of 1 January 2022, the operational heat aid **may only apply to heat from** a heat production plant from renewable sources **located in the territory of the Czech Republic burning biomass or using geothermal energy with a rated thermal output exceeding 200 kW**, where **the supported heat** is the heat **delivered** from this heat production plant **to the heat distribution equipment of the heat energy supply system**.*
- § 26 (1) *The **green heat bonus is set in CZK/GJ** and is granted only in an annual regime.*

Calculation of operational support (SES Act)

§ 25a

- (1) The Authority shall set the maintenance heat support so as to compensate for the **difference between**
 - (a) the specific **operating costs** of using biomass for **biomass-fired heat generators** or for **heat or electricity generators co-firing a renewable source and a non-renewable source**, and the specific operating costs of **using solid fossil fuels**,
 - (b) the specific operating costs and the market price of electricity and the price of heat for heat production plants using geothermal energy.

§ 26a

- (1) The Authority shall set the amount of the green heat bonus for heat generators pursuant to section 24 so that **the sum of the discounted cash flows over the lifetime** of the heat generator **is equal to zero when supporting heat produced** in heat generators put into operation from 1 January 2022, **provided that the technical and economic parameters are met and taking into account the expected revenues from the sale of electricity and heat**. The technical and economic parameters and the amount of the discount rate shall be laid down in implementing legislation.
- (2) The Authority shall adjust the amount of the **green bonus** for heat **on a year-to-year basis, based on the monitoring of the cost of fuel acquisition and the market price of electricity and the price of heat and their changes**.

Financing of operating aids (SES Act)

- § 28 (1) *The costs of electricity support, **operational heat support**, transitional transformation heat support and biomethane support shall be paid through the market operator from the funds generated by*
 - (a) *revenues from payments of the distribution system service price component and the transmission system service price component for electricity support,*
 - (b) *revenues from payments where a higher hourly price than the feed-in price, the reference feed-in price or the reference auction price is achieved or where a higher expected annual average hourly price than the reference auction price is achieved in the case of high-efficiency cogeneration,*
 - (c) *financial security funds,*
 - (d) ***subsidies from State budget funds** as referred to in paragraph 3,e) proceeds from auctioning of allowances pursuant to the Act on greenhouse gas emission allowance trading conditions implemented through the Ministry's chapter,*
 - (f) *the positive difference between the expected market price of electricity from a low-carbon generating plant on organised markets and the strike price pursuant to Section 9(3) of the Act on Measures for the Transition of the Czech Republic to a Low-Carbon Energy Sector,*
 - (f) *the proceeds from the price of guarantees of origin and the value **of guarantees of origin**, which is part of the price for the transfer of advanced biomethane pursuant to § 45a and the offered guarantees of origin pursuant to § 45c*

Decree on technical and economic parameters

- Decree No. [371/2024](#) Coll., on technical-economic parameters for the determination of reference purchase prices and green bonuses and to implement certain other provisions of the Act on Supported Energy Sources.
- Example for heat generation biomass plant from TEP decree effective for 2025

Production plants	Status	Lifetime	Time of annual use of installed capacity		Investment cost per unit		Fuel costs	
			h/year	kWh _t /kW _t	Kč/kW _t	Kč/kW _t	Category	Kč/GJ
Biomass CHP above 200 kWt	new	20 years	3 000	kWh _t /kW _t	36 500	Kč/kW _t	Biomass category	Kč/GJ
Biomass above 200 kWt	new	20 years	3 000	kWh _t /kW _t	21 900	Kč/kW _t	1, 2 – 210 MW – 0	Kč/GJ

Price decision

Example for heat generation biomass plant from a pricing decision effective for 2025

[Energetický regulační věstník 15/2024 | eru.cz](http://energeticky.regulační.věstník.15/2024|eru.cz)

	Supported energy type	Commissioning date of the plant		Installed capacity of the plant		Category of biomass and process of use	Green bonus
				[kW _t]			[Kč/GJ]
		from	up to	from	up to (including)		
a	b	c	d	e	f	g	
10001	Heat generation plant - biomass CHP plant*	01.01.2024	31.12.2024	200	-	O1	194
10051		01.01.2024	31.12.2024			O2	194
10101		01.01.2024	31.12.2024			O3	0
10151		01.01.2024	31.12.2024			KO**	0
10002		01.01.2025	31.12.2025			O1	247
10052	01.01.2025	31.12.2025	200	-	O2	247	
10102	01.01.2025	31.12.2025			O3	0	
10152	01.01.2025	31.12.2025			KO**	0	
10201	01.01.2024	31.12.2024			200	-	O1
10251	01.01.2024	31.12.2024	O2	46			
10301	01.01.2024	31.12.2024	O3	0			
10351	01.01.2024	31.12.2024	KO*	0			
10202	01.01.2025	31.12.2025	200	-	O1	69	
10252	01.01.2025	31.12.2025			O2	69	
10302	01.01.2025	31.12.2025			O3	0	
10352	01.01.2025	31.12.2025			KO**	0	



THANK YOU FOR YOUR ATTENTION!

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