Progress Report on Promotion and Use of Energy from Renewable Sources in the Czech Republic in accordance with Article 22 of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (years 2017 and 2018)

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years

***Table 1*: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources[1]**

	2017	2018
RES-H&C[2] (%)	**19.73%**	**20.65%**
RES-E[3] (%)	**13.65%**	**13.71%**
RES-T[4] (%)	**6.57%**	**6.52%**
Overall RES share[5] (%)	**14.80%**	**15.15%**
Of which from cooperation mechanism[6] (%)	**0.00%**	**0.00%**
Surplus for cooperation mechanism[7] (%)	**0.00%**	**0.00%**

***Table 1a:* Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)[8]**

	2017	2018
(A) Gross final consumption of RES for heating and cooling	2 851	2 912
(B) Gross final consumption of electricity from RES	813	817
(C) Gross final consumption of energy from RES in transport	356	353
(D) Gross total RES consumption[9]	4 020	4 083
(E) Transfer of RES to other Member States	0	0
(F) Transfer of RES from other Member States and 3rd countries	0	0
(G) RES consumption adjusted for target (D)-(E)+(F)	4 020	4 083

[1] Facilitates comparison with Table 3 and Table 4a of the NREAPs.
[2] Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Article 5(1) (b) and Article 5(4) of Directive 2009/28/EC) divided by gross final energy consumption for heating and cooling. The same methodology as in Table 3 of NREAPs applies.
[3] Share of renewable energy in electricity: gross final consumption of electricity from renewable sources in electricity generation (as defined in Article 5(1) (a) and Article 5(3) of Directive 2009/28/EC) divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.
[4] Share of renewable energy in transport: final consumption of energy from renewable sources in transport (see Article 5(1) (c) and Article 5(5) of Directive 2009/28/EC) divided by consumption in transport of the following: (1) petrol; (2) diesel; (3) biofuels used in road and rail transport and (4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.
[5] Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.
[6] In percentage point of overall RES share.
[7] In percentage point of overall RES share.
[8] Facilitates comparison with Table 4a of the NREAPs.
[9] In accordance with Article 5(1) of Directive 2009/28/EC, gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

***Table 1.b*: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in the Czech Republic to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in electricity[10]**

	2017		2018	
	MW	**GWh**	**MW**	**GWh**
Hydro[11]:	1 093	2 228	1 093	2 236
non pumped				
<1 MW	157	511	156	389
1MW–10 MW	183	551	184	487
>10 MW	753	807	753	754
pumped[1]*				
mixed[12]				
Geothermal	0	0	0	0
Solar:	2 070	2 193	2 075	2 359
photovoltaic	2 070	2 193	2 075	2 359
concentrated solar power				
Tide, wave, ocean				
Wind:	308	558	316	596
onshore	308	558	316	596
offshore				
Biomass[13]:	372	4 967	369	4 828
solid biomass	–	2 328	–	2 221
biogas	372	2 639	369	2 607
bioliquids				
TOTAL	3 842	9 946	3 853	10 019
of which in CHP	–	5 013	–	4 864

*1 According to the methodology specified in Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC and Commission Decision of 30 June 2009, establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC of the European Parliament and of the Council, pumped hydro power plants are not considered a renewable energy source

***Table 1c*: Total actual contribution (final energy consumption[14]) from each renewable energy technology in the Czech Republic to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in heating and cooling (ktoe)[15]**

	2017	**2018**
Geothermal (excluding low temperature geothermal heat in heat pump applications)	0	0
Solar	20	21
Biomass[16]:	2621	2656
solid biomass	2446	2486
biogas	176	170
bioliquids	0	0
Renewable energy from heat pumps:	147	173
- of which aerothermal	101	124
- of which geothermal	41	44
- of which hydrothermal	5	5
TOTAL	2788	2849
of which DH[17]	229	220
of which biomass in households[18]	1811	1883

[10] Facilitates comparison with Table 10a of the NREAPs.
[11] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.
[12] In accordance with new Eurostat methodology.
[13] Only consider those that meet the applicable sustainability criteria, see the last subparagraph of Article 5(1) of Directive 2009/28/EC.
[14] Direct use and district heat as defined in Article 5(1) of Directive 2009/28/EC.
[15] Facilitates comparison with Table 11 of the NREAPs.
[16] Only consider those that meet the applicable sustainability criteria, see the last subparagraph of Article 5(1) of Directive 2009/28/EC.
[17] District heating and/or cooling from total renewable heating and cooling consumption (RES- DH).

Table 1d: **Total actual contribution from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in the transport sector (ktoe)[19, 20]**

	2017	2018
Bioethanol/bio-ETBE	59	61
of which Biofuels[21] (Article 21(2))		
of which imported[22]		
Biodiesel	255	247
of which Biofuels[23] (Article 21(2))		
of which imported[24]		
Hydrogen from renewables	0	0
Renewable electricity	42	45
of which road transport	2	2
of which non-road transport	40	43
Others (as biogas, vegetable oils, etc.) – please specify	0	0
of which Biofuels[25](Article 21(2))		
TOTAL	356	353

2. Measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan *(Article 22(1)(a) of Directive 2009/28/EC)*

***Table 2*: Overview of all policies and measures**

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and/or activity***	Existing or planned****	Start and end dates of the measure
Act No 165/2012	Regulatory	Installed capacity,	Public administration, investors, planners	Existing/Completed	Amendment act approved in 2015 (Act No 131/2015): 13 May 2015 Effective date: 1. January 2016 Amendment act approved in 2016 (Act No 107/2016): 16 March 2016 Effective date: 6 April 2016
Act No 183/2006	Regulatory	Installed capacity,	Public administration, investors, planners	Existing/Completed	Amendment act approved in 2017: (Act No 255/2017) as amended 27 June 2017 Effective date: 1 January 2018

[18] From the total renewable heating and cooling consumption.
[19] For biofuels take into account only those compliant with the sustainability criteria, see the last subparagraph of Article 5(1).
[20] Facilitates comparison with Table 12 of the NREAPs.
[21] Biofuels included in Article 21(2) of Directive 2009/28/EC.
[22] From the whole amount of bioethanol/bio-ETBE.
[23] Biofuels included in Article 21(2) of Directive 2009/28/EC.
[24] From the whole amount of biodiesel.
[25] Biofuels included in Article 21(2) of Directive 2009/28/EC.

					1. April 2015
Act No 184/2006	Regulatory	Installed capacity	Public administration, investors, planners	Existing/Completed	Amendment act approved in 2018: (Act No 169/2018): 18 July 2018 Effective date: 31 August 2018
Act No 416/2009	Regulatory	Installed capacity	Public administration, investors, planners	Existing/Completed	Amendment act approved in 2018: (Act No 169/2018): 18 July 2018 Effective date: 31 August 2018
MIT – state programme	Slight, Financial	Installed capacity, energy produced, reduction in consumption	Public administration, investors, planners	Existing	Valid for 2015 and 2016
MIT – building authority Other	Regulatory	Installed capacity, energy produced	Public administration	Existing/Completed	Application of amendment act 277/2019 (Act No 183/2006) Effective date: 31 December 2019
Price decisions of the ERA	Regulatory, Financial	Installed capacity	Public administration, investors	Existing, planned	Valid for 2015 and 2016
Green Light to Savings Programme / New Green Light to Savings Programme	Financial	Reduction in consumption, increased installed capacity of electricity- and heat-producing installations, and increased production of electricity and heat	Investors	Existing	Valid for 2015 (Green Light to Savings Programme) and 2016 (New Green Light to Savings Programme)
Act No 201/2012, on air protection, as amended.	Regulatory	Use of biofuel in transport Biofuel certification for sustainability criteria	Public administration Producers, biofuel importers and sellers, fuel suppliers	Existing/Completed	Amendment act approved in 2015 (Act No 382/2015): 10 December 2015 Effective date: 1. January 2016 Amendment act approved in 2016 (Act No 369/2016): 19 October 2016 Effective date: 1. January 2017
Act No 383/2012, on conditions of trading with greenhouse gas emission allowances, as amended	Regulatory	EU ETS has a general positive impact on the development of certain kinds of OZE, e.g., co-generation of	Public administration Operators of installations in EU ETS	Existing/Completed	Amendment act approved: 22 October 2014 Effective date: 1 January 2015

		biomass			

* Indicate if the measure is (above all) regulatory, financial or 'soft' (e.g. an information campaign).
**Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?
***Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc.? Or what is the targeted activity/sector: biofuel production, energy use of animal manure, etc.)?
**** Does this measure replace or complement measures contained in Table 5 of the NREAP?

2.a. Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of energy from renewable sources *(Article 22(1)(e) of Directive 2009/28/EC)*.

Administrative and permit procedures are mainly governed by the following legislation:

- **Act No 183/2006 on land-use planning and building regulations (the Building Act)**

a) Implementing Decree No 590/2002 on the technical requirements for waterworks
b) Communication No 544/2006 publishing, in accordance with Section 117(2) of Act No 50/1976 on land-use planning and building regulations (the Building Act, as amended), a list of regional and municipal authorities that constitute building authorities as at 1 November 2006
c) Implementing Decree No 498/2006 on authorised inspectors
d) Implementing Decree No 499/2006 on building documentation
e) Implementing Decree No 500/2006 on land-use analytical documents, land-use planning documents and planning-activity recording methods
f) Implementing Decree No 501/2006 on general land-use requirements
g) Implementing Decree No 503/2006 on the more detailed framing of land-use decisions, land-use measures and building regulations
h) Implementing Decree no 146/2008 on the scope and content of project documentation relating to transport constructions
i) Implementing Decree No 268/2009 on technical requirements relating to buildings
j) Implementing Decree No 398/2009 on general technical requirements concerning the barrier-free use of buildings
k) Implementing Decree No 239/2017 on the technical requirements for buildings fulfilling the function of woodland
l) Implementing Decree No 225/2002 on the detailed specification of buildings in water-management reclamation areas and parts thereof, and on the nature and extent of care for them

At the end of 2019 the Ministry for Regional Development in cooperation with the Czech Chamber of Commerce drew up for submission under the interdepartmental comments procedure a recodification of building law designed to significantly speed up and simplify the preparation and implementation of building projects. From the point of view of the permit procedure, the purpose of recodification is to simplify, speed up and streamline administrative processes relating to building permits. Hence the administrative procedures for building permits should be reduced to a single decision replacing all the partial decisions issued by building authorities (land-use permits and building permits) and the decisions issued by other administrative bodies and authorities concerned in accordance with the applicable legislation.

The linking of administrative proceedings and, consequently, of administrative decisions should be abolished. In the case of all line constructions, a special regulation (types of construction, powers and responsibilities, procedural matters, etc.) is expected in the forthcoming new Line Constructions Act No 416/2009. A single decision will be issued by a single building authority, which will conduct the permit procedure and issue a decision. The decision will be issued on the basis of simpler building documentation with newly determined content and scope. The parties to the procedure and the authorities and general public concerned will make their views on the project known as soon as possible. The question of expropriation will be dealt with in a new manner. In this connection the topic of expropriation will be reviewed, i.e. what rights and what matters can be affected by the expropriation procedure. The purposes of expropriation will likewise be reviewed in special laws. The recodification will also address changes in judicial review (speeding up and enhancing the review in the administrative courts, restricting or abolishing the schedule of suspensive effects in construction-related cases, reducing misuse of appeals to the Supreme Administrative Court for redress, substantive specialisation of administrative judges, and wider options or obligations relating to court decision-making. A unification of offices and agendas at central level is proposed within the framework of institutional changes. This amendment also proposes a change in the model of the performance of state administration, the separation of building authorities from the combined model and the creation of a supreme building authority and land-use planning authority. Hence the recodification should lead to the construction of a new two-cell system consisting of the Supreme Building Authority (at the central level) and the Regional Building Authorities based in individual regions and remote offices based in municipalities with extended powers (at the basic level). The interdepartmental comment procedure on the proposal for the recodification of building law will be completed by March 2020, and the draft act will then be discussed in the Chamber of Deputies of the Czech Republic. The Act is expected to come into effect gradually from 2021 until June 2023.

Along with the recodification of the Public Building Act, a number of other acts and implementing regulations will be amended.

Amendments will also be made to Act No 416/2009 on the accelerated construction of transport, water, energy and electronic communication infrastructure, Act No 184/2006 on the removal or restriction of ownership of land or building (the Expropriation Act), Act No 458/2000 on conditions of engaging in business and exercising state administration in the energy sector and amending certain acts (the Energy Act), Act No 634/2004 on administrative fees, Act No 406/2000 on energy management. Further, amendments will be made to Implementing Decree No 500/2006 on land-use analytical documents, land-use documentation, and method of registration of land-use activities, Implementing Decree No 503/2006 on detailed regulation of zoning decision-making, zoning measures and building regulations, and Decree No 499/2006 on building documentation.

- **Act No 184/2006 on the withdrawal or restriction of title to land or buildings (the Expropriation Act)**

- **Act No 458/2000 on conditions of engaging in business and exercising state administration in the energy sector and amending certain acts (the Energy Act)**

a) Implementing Decree No 8/2016 on details of business licensing in energy sectors

b) Implementing Decree No 387/2012 on state authorisation for the construction of an electricity-producing installation
c) Implementing Decree No 16/2016 on conditions for connection to the electricity network

- **Act No 634/2004 on administrative fees**

- **Act No 406/2000 on energy management, as amended**

a) Implementing Decree No 78/2013 on energy performance of buildings, as amended
b) Implementing Decree No 441/2012 on determining the minimum efficiency of the use of energy in electricity and heat generation
c) Implementing Decree No 480/2012 on energy audit and energy assessment, as amended
d) Implementing Decree No 194/2013 on furnace and heat line inspections
e) Implementing Decree No 4/2020 on energy specialists
f) Implementing Decree No 193/2007 laying down particulars of the efficiency of the use of energy in heat distribution and internal heat and cooling distribution
g) Implementing Decree No 194/2007 laying down rules for heating and hot water supply, measuring indicators of heat consumed in heating and in the production of hot water, and requirements as to the fitting of internal heat equipment in buildings with devices regulating and registering heat supply, as amended.

- **Act No 100/2001, on environmental impact assessment, and amending certain related acts (the Act on Environmental Impact Assessment), as amended**

Regulates environmental impact assessment (including, for example, impact on animals and plants, on ecosystems, on soil, mineral environment, water, air, climate and landscape, natural resources, tangible assets and cultural monuments, etc.) and on public health, and steps to be taken by natural persons, legal entities, administrative authorities, and regional self-governing units (municipalities and regions) in the course of such assessment. Assesses impact on public health and environmental impact specified by special legal regulations and on their mutual effects and correlations.

Other related regulations, e.g.:

- Act No 114/1992 on the protection of nature and the countryside, as amended;
- Act No 289/1995 on forests and amending and supplementing certain acts, as amended (the Forest Act);
- Act No 334/1992 on protecting the agricultural land fund, as amended;
- Act No 254/2001 on water and amending certain acts, as amended (the Water Act);
- Act No 20/1987 on state heritage care, as amended and other
- regulations and development policy documents of local and regional self-governing authorities, in particular:
    - ✓ principles of regional development of a region;
    - ✓ territorial energy concept of regions

- **Act No 369/2016, amending Act No 201/2012, on air protection;**

The Act modified the obligations in reducing greenhouse gas emissions from fuel supplied. Pursuant to the amendment to the Act, fuel suppliers must achieve at least a 3.5% reduction in greenhouse gas emissions from the fuel they supply by comparison with the baseline value in 2017.

2.b. Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for the bearing and sharing of costs related to grid connections and grid reinforcements *(Article 22(1)(e) of Directive 2009/28/EC.*

Connecting and operating electricity production installations:

In the case of steps to ensure the transmission and distribution of electricity produced from renewable sources, and to improve the framework or rules for the bearing and sharing of the costs of connection to the distribution system, and for enhancing the distribution system, the rules applicable in 2015 and 2016 were set by the following legislation:

- Act No 458/2000 on conditions of engaging in business and exercising state administration in the energy sector and amending certain acts (the Energy Act)
- Act No 165/2012 on supported sources of energy and amending certain acts
- from 1 2. 2016 Decree No 16/2016 on conditions for connection to the electricity network

In connection with the amendments to Act No 458/2000, which allowed, under certain conditions, customers to operate plants with an installed capacity of up to 10 kW without the need to obtain a licence, the Decree No 16/2016 has implemented a process of simplified connection of these plants. If the conditions set out in the Decree are met, the customer does not have to apply for connection in the standard way (only the existing connection agreement is changed) and the distribution system operator cannot refuse to connect such a power plant (power-generating facility).

Investments in the development of the distribution and transmission systems:

a) Implemented and planned investments in the transmission and distribution networks in the Czech Republic

In the Czech Republic, the largest investors and operators of transmission and distribution networks are ČEPS, a.s. (transmission system operator) and E.ON Distribuce, a.s., ČEZ Distribuce, a.s. and PREdistribuce, a.s. (regional distribution system operators). Each of these companies publishes on its website information on the financial costs invested in transmission and distribution networks and also publishes its future plans in this area. The attached table provides a summary of investment costs in 2017 and 2018.

Total investments implemented and planned by distribution system operators and the transmission system operator

	Investment costs expended [CZK thousand]	
Company name	2017	2018
ČEPS, a.s.	3 632 400	3 054 000
E.ON Distribuce, a.s.	4 041 743	5 011 820
ČEZ Distribuce, a.s.	9 593 000	10 694 000
PREdistribuce, a.s.	1 585 900	1 691 600

In accordance with Czech legislation, ČEPS, a.s. prepares a ten-year plan for the development of the transmission system, including an investment plan.

The distribution companies publish the information on the expected development of the distribution system for at least 5 years on their websites on the basis of the requirement laid down in Section 25 of Act No 458/2000.

b) Selected completed and planned projects

As has already been stated, detailed information on projects in the distribution and transmission networks which have been the subject of past investment is available to the public on the websites of each of the companies. Nevertheless, for more detailed information, the attached tables contain a summary of some of the completed and planned projects.

ČEPS, a.s.

ČEPS projects are designed to ensure the readiness of the transmission system to connect new generation capacities within the deadlines agreed between investors and the transmission system operator, to strengthen the 400/110 kV transformer power between the TS and DS, covering both the increase in consumption and the change of structure of the sources connected to DS (replacement of larger conventional high-utilisation sources with distributed low-usage and fluctuating generation and elimination of bottlenecks in order to promote international trade in electricity). Many of ČEPS's forthcoming development investment projects are part of the CCE ENTSO-E and are included in the TYNDP, which is subject to assessment in accordance with established criteria. TYNDP aims not only to prepare the conditions for meeting the Union's climate objectives, but also to define the necessary transmission infrastructure to achieve these objectives.

Completed projects				
Project name	Location	Emission power	Completion	Investment costs [CZK thousand]
New TR 400/110 kV Vernéřov	Vernéřov	350 MVA	2017	731 510
Construction of phase transformers in the Hradec substation	Hradec u Kadaně	2x1700 MVA	2017	1 600 400
Upgrading the Hradec Králové substation to 50 kA	Hradec u Kadaně		2017	69 800
Modernisation of the 400/110 kV transformer station Čechy Střed	Čechy Střed		2017	1 538 950
Modernisation of the 400/110 kV transformer	Otrokovice		2017	548 870

Completed projects				
Project name	Location	Emission power	Completion	Investment costs [CZK thousand]
station Otrokovice				
Replacement of the 400/110 kV transformer station Horní Životice	Horní Životice	Replacement of 250 MVA for 350 MVA	2017	135 303
Replacement of the 400/110 kV transformer station Chrást	Chrást	Replacement of 330 MVA for 350 MVA	2017	128 700
Modernisation of the 400/110 kV transformer station Chodov	Chodov		2018	379 900
Replacement of the 400/110 kV transformer station Sokolnice	Sokolnice	Replacement of 200 MVA for 350 MVA	2018	329 900
Modernisation of the V404 line Nošovice – Varín	Nošovice – Varín	1424 MVA	2018	278 080
Renewal of the V203 mast structures Opočínek - Sokolnice	Opočínek - Sokolnice		2018	173 100

ČEZ Distribuce, a. s.

Completed projects				
Project name	Location	Power/voltage level	Completion	Investment costs [CZK thousand]
Fifejdy – construction of new R 110/22 kV	Fifejdy	VHV/HV transformation	2016 – 2017	205 928
Vd_vvn110kV,V1141-42,Tuněchod.-Hlinsko	Havlíčkův Brod region	Outdoor VHV line	2015 – 2017	174 662
Staré Místo,TR110/35kV–rek.R110,R35,eko	Staré Místo	VHV/HV transformation	2015 – 2017	133 249
Čechy Střed - Český Brod, refurbishment of	Český Brod region	Outdoor VHV line	2016 – 2017	131 627
TR Kostelec – new 110/22kV TR	Ostrov u Stříbra	VHV/HV transformation	2016 – 2017	123 717
VHV line_strengthening of the Výškov-Most J line	Most region	Outdoor VHV line	2016 – 2017	117 920
2x110kV line Jindřichov – Drmoul	Cheb region	Outdoor VHV line	2017 – 2018	214 660
TR Vernéřov_inlet of the new T 401 ČEPS	Vernéřov	TS/VHV substations	2017 – 2018	182 665

TR Lichoceves – new 110/22 kV TR	Praha-západ	VHV/HV transformation	2016 – 2018	126 061
TR Vrchlabí-V1111/1113,-st.244,rek.+KZL	Vrchlabí	Outdoor VHV line	2016 – 2018	108 811
TR Lišany, Tuchlovice – 110 kV switchover	Louny region	Outdoor VHV line	2018 – 2018	93 061

E.ON Distribuce, a. s.

Completed projects			
Project name	Location	Completion	Investment costs [CZK thousand]
110 kV V 573 line	R Rychlov – R Otrokovice	2017	121 900
Refurbishment of 110 kV V1319/1320 lines	R Mirovice - R Blatná	2017	136 600
Refurbishment of R 110/22 kV	R Telč	2017	93 500
Refurbishment of 110 kV V509 lines	Žďár – Bystřice /Perštejnem	2018	190 400
Refurbishment of R 22 kV	Brno	2018	77 000
110 kV V 519 line	R Bučovice - Vyškov	2018	124 210

PRE Distribuce, a. s.

Completed projects			
Project name	Location	Completion	Investment costs[CZK thousand]
New TR Karlín	Karlín	2008 – 2018	939 500
New TR Uhříněves	Uhříněves	2009 – 2017	628 300
Renovation of TR Pražačka	Libeň	2017 – 2022	160 600
110 kV line cable laying	Malešice – Michle	2017 – 2021	283 900

Regulatory framework:

In regulating the price of related electricity services, the Energy Regulatory Office (hereinafter the 'ERO') proceeds in a transparent and predictable manner in accordance with pricing principles so that the regulated prices cover the economically justifiable costs to ensure reliable, safe and efficient performance of the licensed activity, depreciation and a reasonable profit ensuring the return on the investments into the facilities used for the licensed activity and the eligible costs of energy efficiency improvement during the construction and

operation of the transmission and distribution systems (see Section 17(11) and (12) and Section 19a of Act No 458/2000, the Energy Act). This creates adequate incentives for the transmission system operator (TSO) and for distribution system operators (DSOs) to invest.

The TSO and DSOs are obliged to ensure safe, reliable and efficient operation, renewal and development of the system (see Section 24(1)(a) *et seq* as regards the TSO's obligations, and also Section 25(1)(a) *et seq* as regards the DSOs' obligations) in connection with the obligation to give preference to connecting producers of renewable energy in accordance with Section 7(1) of Act No 165/2012 on supported energy sources.

Subsequently, those obligations, in conjunction with the ERO's powers to supervise the fulfilment of TSO's and DSOs' obligations (see Section 17(7)(f) and Section 18 of the Energy Act), ensure that the TSO and DSOs are obliged to take into account the development of electricity generation from renewable sources when developing their systems.

As regards the power to regulate and, as the case may be, control investments within the meaning of Article 16(1) of the Renewable Energy Directive, Member States have a general obligation to ensure that the regulatory authorities appointed by them have the power to monitor the TSO's investment plans and to assess them in their annual report in accordance with Article 37(1)(g) of Directive 2009/72/EC concerning common rules for the internal market in electricity. As regards the TSO, the ERO is empowered to approve the TSO's ten-year investment plans (see Article 17(7)(i) of the Energy Act) and thus encroach on these plans. With regard to the DSOs, or more specifically the resources enabling them to be fulfilled, this obligation is met mainly through the ERA having the authority to exercise supervision in the energy sector (see Section 17(7)(f) in conjunction with Section 18 of the Energy Act). For any breaches found it may impose fines and corrective measures, which may lead to the withdrawal of their licence.

The established regulatory framework in the Czech Republic fully supports investment in networks. In accordance with Section 19a(1) of the Energy Act, the ERO regulates prices in such a way that the regulated prices cover economically eligible costs to ensure reliable, safe and effective performance of licensed activity, depreciation and reasonable profit ensuring return on investments made in facilities serving the licensed activities and eligible costs for improving energy efficiency during the construction and operation of the transmission system and distribution systems.

3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan*(Article 22(1)(b) of Directive 2009/28/EC)*.

A) Support for electricity generation from RES in the Czech Republic

Operational support (purchase prices and green bonuses)

Operational support in the Czech Republic is legally enshrined in Act No 165/2012 on supported energy sources, which implemented Directive No 2009/28/EC on the promotion of the generation of energy from renewable sources. Investment support for energy from RES or the support for the construction of energy production facilities using RES is represented by

subsidy programmes financed from the state budget (Green Light to Savings, EFFECT) and operational programmes financed from EU structural funds (OPEIC, OPEnv, SPR, IROP).

Operational support is possible for the electricity sector by means of a feed-in tariff or green bonus. The feed-in tariff is the price to which the manufacturer is entitled, regardless of the current market price. The green bonus is paid for the producer's own consumption or as a 'contribution' to the market price at which the producer sold the energy produced. These schemes cannot be combined; a producer must select a system under which it will produce, with purchase price support being available only to selected production units, in order to give priority to support in the form of green bonuses.

The payment of the support for electricity in the form of the feed-in tariff is ensured in such a way that the obligatorily buyer (state-appointed electricity trader, or until such trader is selected, the supplier of last resort for the territory) pays a fixed feed-in tariff to the producer of electricity from RES and the market operator (state-established company through which all the financial flows related to the support are realised) pays to the obligatory buyer the difference between the purchase price and the hourly (market) price of electricity.

The feed-in tariffs were calculated taking into account Section 4 of Act No 165/2012 and are designed to guarantee a 15-year return on investment during the lifetime of the types of electricity generating facilities in question. Over the lifetime of the source, purchase prices are increased by 2% per year, in accordance with the law (with the exception of production installations using biogas, biomass, and bioliquid).

In the case of a green bonus, the market price of electricity is paid to the electricity producer by the electricity trader and the green bonus is paid to the producer by the market operator. The support for the heat sector is paid in such a way that the regulated heat price is paid to the supplier by its customer and the green bonus is paid by the market operator. The Energy Regulatory Authority sets the value of green bonuses in such manner as to take account of the value of the market price of electricity for each type of renewable energy source. Under this system, a producer may sell his electricity output to any customer or electricity trader at the market price, gaining a green bonus in addition. The bonus scheme also permits the use of generated electricity for one's own use and the application of a green bonus against this use. Compared to purchase prices, they are advantaged, because their value reflects the increased level of risk associated with selling the electricity produced on the market.

<u>Operational support financing:</u>

The costs of supporting electricity and operational support for heat are paid through the market operator from the funds that are generated by:

- the revenue from payments of the distribution system service price component and the transmission system service price component for the support of electricity;
- the revenue from payments for failure to meet the minimum efficiency of energy use in the combustion of brown coal in accordance with Section 6(5); of the Act on Energy Management;
- subsidies from the state budget and
- proceeds from the auctioning of allowances in accordance with the Act on Conditions of Trading with Greenhouse Gas Emission Allowances realised through the Ministry's chapter.

In 2015, Act No 406/2000, on energy management was amended by Act No 103/2015. The amendment to Act No 406/2000 has omitted, effective from 1 July 2015, the provisions of Section 6 concerning the requirements for minimum efficiency or reconstructed power generators and thermal energy sources. Hence it is no longer possible to rely on this source for funding the support (referred to in Section 28(1)(b) of Act No 165/2012).

According to the Ministry of Finance, the proceeds from the auctioning of allowances in accordance with the Act on Conditions of Trading with Greenhouse Gas Emission Allowances, implemented through a chapter of the Ministry of Industry and Trade, are already part of the financial means for subsidies from the state budget.

The Government decides by regulation on the means of the state budget assigned to provide a subsidy for the payment of the price component of the distribution system service and the price component of the transmission system service in support of electricity, to cover the operational heat support by 30 September of the calendar year preceding the calendar year for which the ERO determines the price component of the distribution system service and the price component of the transmission system service in support of electricity. The state budget funds for the provision of the subsidy shall be determined on the basis of the funds referred to in the previous paragraph, so that they together cover the total anticipated financial means for the support of electricity and operational support for heat.

In order to cover the costs of supporting solar power plants put into operation in the period from 1 January 2009 to 31 December 2010, a levy was introduced for the period 2011– 2013, which the power plants must pay to compensate for the disproportionate amount of their support. Since 2014, this levy has been paid only by solar power plants put into operation in 2010 for the entire period of providing operational support.

The amount of feed-in tariffs and green bonuses for each type of renewable energy source are stated in Price Decision of the Energy Regulatory Authority laying down the support for supported energy sources.

In 2015 there was another amendment to Act No 165/2012 together with Act No 458/2000 (the Energy Act) by Act No 131/2015 amending Act No 458/2000 on conditions of engaging in business and exercising state administration in the energy sector and amending certain acts (the Energy Act), effective from 1 2016. The amendment to the Act on Supported Energy Sources brings, in addition to stricter controls on the payments of subsidies and the extension of the ERO's powers, a change in the collection of fees for renewables, which will henceforth be collected according to the size of the offtake point (or the size of the main circuit breaker for households).

Pursuant to this Act, operational support for heat was also introduced, which applies to useful heat from heat generating plants located in the Czech Republic, with an installed electrical capacity of up to 500 kW and using biogas generated by more than 70% from livestock manure and by-products of animal products or biodegradable waste.

The amendment to the Energy Act further reduced the administrative requirements for connection and operation of small sources up to 10 kW, intended primarily for own consumption; in accordance with the amended Section 3(3), no electricity generation licence is required for power-generating facilities with a capacity of less than 10 kW, even if the

facility is connected to a transmission or distribution system. These power-generating facilities must meet the following criteria:

- It must be a facility intended for the customer's own consumption with the output of up to 10 kW.
- The facility must be connected to the distribution system on the basis of a contract with the distribution system operator, i.e. the conditions for connecting electricity generating plants set by existing regulations must be met.
- An unlicensed power-generating facility may not be connected together at one offtake point with a licensed facility receiving a subsidy (owners of small power plants from 2006-2013, who receive the green bonus, thus cannot set up another plant on their property without a licence).

The plant can supply overflows to the system in a quantity that is not yet limited. However, the customer cannot receive the market price as a remuneration for the supplied electricity because it would then be a business for which a licence is required.

In 2017 and 2018, several European Commission proceedings were concluded with the Czech Republic on the compatibility of operational support introduced by Act No 165/2012 with the EU internal market and EU state aid rules in the environment and energy sectors. The European Commission decided that the support was compatible with the above rules by the following decisions:

- SA.38701 (2004/NN) of 19 December 2017 – Czech Republic – Promotion of electricity production from CHP and heat from renewable sources of energy
- SA.45768 (2016/N) of 7 March 2017 – Czech Republic – Promotion of electricity from high-efficiency combined heat and power generation

Investment support

(A) *Investment support* from subsidy programmes for promoting electricity generation from renewable sources:

a) <u>State programmes</u>

- State programme for promoting energy savings and use of renewable energy sources *(Ministry of Industry and Trade)*
- Green Light to Savings and New Green Light to Savings *(Ministry of the Environment)*
- Programme for furnace replacements under the Operational Programme Environment OPEnv 2014-2020, SC 2.1 *(Ministry of the Environment and selected regions)*

b) <u>Operational programmes</u>

Operational Programme Enterprise and Innovation for Competitiveness OPEIC (Ministry of Industry and Trade) 2014-2020, *Priority axis 3, Renewable energy sources programme,* 5 calls of the currently supported activity in the 5th call were announced:

a) construction of wind power plants;
b) installation of thermic solar systems;

c) transferring heat from existing electricity generating plants – biogas plants using biogas in a biogas plant to produce electricity and heat using heat distribution equipment to the point of consumption; transferring biogas from existing biogas plants via a biogas pipeline to a remote cogeneration unit using biogas from an existing biogas plant for the purpose of utilising the useful heat supplied to the heat distribution system of the heat supply system;

d) construction and refurbishment of sources of cogeneration of electricity and heat from biomass and heat transfer to the heat exchanger station;

e) construction and refurbishment and modernisation of small hydro power plants (up to 10 MWe of installed capacity).

- Operational Programme Environment *(Ministry of the Environment)*

Other types of support (*Tax exemption, reduction, or refund):*

a) Exemption from electricity tax for electricity from renewable sources in based on Act No 261/2007, on stabilisation of public budgets, as amended.

Until the end of 2015, all environmentally friendly electricity had been exempted. This concerns the electricity from solar energy, wind energy or geothermal energy, and electricity produced in hydroelectric power plants, from biomass or biomass products, from methane emissions from discontinued coal mines or from fuel cells.

With effect from 1 January 2016, the exemption for environmentally friendly electricity has been substantially reduced as it was a non-systemic tax measure. However, in order to maximise the efficiency of tax collection, it was necessary to keep the option of exempting small producers/consumers of environmentally friendly electricity (typically single-family houses with solar panels). Thus, the exemption only applies to environmentally friendly electricity produced in electricity generating facilities with an installed capacity of up to and including 30 kW, if it is consumed at the same offtake point at which it was produced.

b) Real estate tax exemption (in accordance with the Real Estate Tax Act):

- ✓ Lands forming a single functional unit with a taxable building or a taxable unit under the conditions set out in Section 4(1)(h) of Act No 338/1992, on real estate tax, as amended, serving for the purpose of improving the environment in the Czech Republic, e.g. operation of wind electricity generation plants
- ✓ Section 9(1) Section 7(1) of Act No 338/1992, as amended, exempts from unit or buildings tax, inter alia, taxed buildings or taxed units used, for example, by electricity or heat producing installations using biogas energy, if the energy obtained is supplied to the network or other consumers. Furthermore, buildings or units are exempt from the tax following a change of heating system which transferred from solid fuels to a system using RES, for a period of five years.

B) Support for heating and cooling from RES in the Czech Republic

Given that a heat supply system exists in nearly all larger towns and cities in the Czech Republic, and that the share of supply from heat supply systems accounts for more than 50% of total heat consumption in the Czech Republic, the existing scope of heat supply

infrastructure can be considered, in principle, sufficient, in terms of the possibility of attaining the target for the utilisation of renewable sources of energy for 2020. In existing systems, it will be necessary to focus primarily on their refurbishment and increased efficiency (reduction of losses in distribution). New heat supply systems may be established primarily in smaller settlements, where a suitable renewable source of energy is available (in particular biomass or biogas) in a sufficient volume. No central plans are produced in the Czech Republic for future support for the development of heat supply infrastructure.

In 2016, the heating and cooling sector contributed to the total, approximately 15% share of RES in gross final consumption by two thirds (specifically 10.6%). For this reason, closer attention needs to be paid to promoting heat from RES. One of the reasons for the high contribution to the overall share is the relatively high efficiency of conversion of energy from primary energy sources, especially in heat production or in cogeneration of electricity and heat compared to the mono-generation of electricity from these renewable sources with possible heat production.

Operational support

In support of heat from RES, the following operational supports or relative matters are introduced:

- operational support for heat from RES using biomass and geothermal energy combustion, statutory green bonus in the amount of 50 CZK/GJ with regular annual 2% increase in accordance with Section 24(3) of Act No 165/2012,
- operating support for useful heat from RES using biogas 70% of which is generated from manure and livestock production by-products or from biodegradable waste intended for the construction of heat generation plants in accordance with Section 24(4) of Act No 165/2012,
- obligation to buy heat from RES from the holder of a licence for thermal energy distribution and to connect a RES heat generation plant to a district heating system in accordance with Section 27(1) Section 7(1) of Act No 165/2012
- draw up and regularly update an overview of all efficient thermal energy supply systems in the Czech Republic in accordance with Section 25(5) of Act No 165/2012

Investment support

This concerns mainly the investment support for construction of facilities generating heat from RES and their refurbishment (reconstruction from non-RES to RES) from subsidy programmes (both national and EU – EFFECT, OPEIC, RDP, OPEnv).

Furthermore, this also concerns the installation of heat generating facilities (biomass boilers, solar collectors, heat pumps) realised by the owners and builders of new or refurbished buildings to meet the energy performance requirements of buildings. It is the setting of parameters and indicators of energy performance of buildings in accordance with Act No 406/2000, on energy management and Decree No 78/2013, on the energy performance of buildings.

Use of renewable sources of energy in heat supply systems is currently supported through the following support regimes: - Investment support – operational programmes and state programmes

✓ Investment support – Operational programmes and State programmes State programmes

- State programme for promoting energy savings and use of renewable energy sources *(Ministry of Industry and Trade)*
- Green Light to Savings and New Green Light to Savings *(Ministry of the Environment)*
- Boiler Replacement Scheme within the Operational Programme Environment 2014–2020, SO 2.1 *(Ministry of the Environment and selected regions)*

✓ Operational programmes

- Operational programme Enterprise and Innovation for Competitiveness (Ministry of Industry and Trade) 2014-2020
  Under Priority Axis 3, namely the Renewable Energy Sources Programme, 5 calls have already been announced and the following activities are currently supported:
  a) installation of electric and gas heat pumps;
  b) transferring heat from existing electricity generating plants – biogas plants using biogas in a biogas plant to produce electricity and heat using heat distribution equipment to the point of consumption; transferring biogas from existing biogas plants via a biogas pipeline to a remote cogeneration unit using biogas from an existing biogas plant for the purpose of utilising the useful heat supplied to the heat distribution system of the heat supply system;
  c) construction and refurbishment of sources of cogeneration of electricity and heat from biomass and heat transfer to the heat exchanger station;
  d) construction and reconstruction of heat sources from biomass and heat transfer to the heat exchanger station, including

- Operational Programme Environment OPEnv *(Ministry of the Environment)*

✓ European Agricultural Fund for Rural Development

- The Rural Development Programme RDP 2014 – 2020 *(Ministry of Agriculture)*

  Within Priority Axis 5C, namely operation 6.4.3 Investments for the support of energy from renewable sources, project (a) Construction and modernisation of plants for the production of shaped biofuels (within the 4th round of applications, 2017), or operation 6.4.1 Investments in non-agricultural activities, project (c) Construction and modernisation of shaped biofuel production facilities (under the 6th round of applications, 2018), the following activities were supported:

  a) new construction or building renewal (conversion, modernisation, static security) of a plant for the production of shaped biofuels (building material, construction work, demolition work, distribution, connections of basic technical infrastructure in relation to operational accessories, technical equipment of buildings);
  b) technology for the production of shaped biofuels (technology for storage, reception, transport and sorting of biomass, biomass disintegration

technology, biomass drying technology, biomass mixing and treatment technology, pressing technology, product preparation and shipping technology, electrical installation), operations management technology including the purchase of computer technology necessary in connection with the project – hardware, software

✓ Real estate tax exemption:

a. Sources of geothermal energy, including heat pumps
b. Solar collectors and sources of energy from biomass

(C) Costs for operational support from RES in the Czech Republic

***Table 3*: Actual costs of support of electricity from SRES**

Actual costs of support of electricity from SRES	2015 [CZK million]	2016 [CZK million]	2017 [CZK million]	2018 [CZK million]
Small hydro stations	1 927	2 057	2 541	1 837
Photovoltaic stations	26 804	25 911	27 002	29 203
Wind farms	1 215	1 100	1 332	1 273
Geothermal sources	0	0	0	0
Biogas stations	7 694	7 897	8 163	7 735
Biomass	3 458	3 787	4 115	3 641
Total RES	**41 098**	**40 752**	**43 154**	**43 689**

3.1 Provide information on how the supported electricity is distributed among final energy consumers for the purposes of Article 3(6) of Directive 2003/54/EC *(Article 22(1)(e) of Directive 2009/28/EC)*.

Information on how the supported electricity is distributed among final consumers for the purposes of Article 3(9) Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing

Directive 2003/54/EC are provided in accordance with Act No 458/2000, on conditions of engaging in business and exercising state administration in the energy sector and amending certain acts (the Energy Act) and Decree No 70/2016, on invoicing of supplies and services in the energy sectors, on invoices to the final consumer.

4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material *(Article 22(1)(c) of Directive 2009/28/EC)*.

Since 2018, the amendment to Act No 201/2012 on air protection has introduced preferential treatment for biofuels made from used cooking oils, fats from carcass disposal plants and advanced biofuels, i.e. biofuels made from raw materials listed in Part A of Annex IX to Directive 2009/28/EC. Suppliers of petrol or diesel can count these biofuels towards their mandatory minimum biofuel target twice.

5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system *(Article 22(1)(d) of Directive 2009/28/EC)*.

Guarantees of origin are issued in the Czech Republic in accordance with Act No 165/2012 on supported energy sources and the relevant Implementing Decree No 403/2015. Guarantees concerning the origin of renewable energy for electricity from RES are issued in the Czech Republic as required under the original Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market and subsequently Directive 2009/28/EC. Furthermore, guarantees concerning the origin of energy from high-efficiency cogeneration are issued in the Czech Republic as required under Directive 2012/27/EU on energy efficiency.

Guarantees of origin in the Czech Republic are issued by the organisation responsible, which is the market operator (OTE, a.s.). Guarantees of origin issued by a market operator were used mainly to provide proof to the final consumer of the share or quantity of energy from renewable sources in the electricity supplier's energy mix.

Data stated in a producer's request for the issue of guarantees of origin are validated in the market operator's secure system. The period and amount of electricity for which guarantees of origin are requested are also compared in a secure manner with the database of subsidies paid by the market operator and operators with an obligation to purchase.

The prices for guarantees of origin charged by the market operator in 2017 and 2018 were determined by means of ERO Price Decisions No 3/2016 of 23 September 2016 and No 4/2017 of 26 September 2017; they were determined as follows:

- price for issuing a guarantee of origin – 0.95 CZK/MWh;
- price for transfer of a guarantee of origin within the Czech Republic – 0.20 CZK/MWh;

- price for transfer of a guarantee of origin issued in another Member State – 0.20 CZK/MWh;
- price for keeping an account in the register of guarantees of origin – 100 CZK/month.

6. Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes *(Article 22(1)(g) of Directive 2009/28/EC)*.

*It is suggested that **tables 4 and 4a** are used to provide more detailed information on the biomass supply.*

***Table 4*: Biomass supply for energy use**

	Amount of domestic raw material (*)		**Primary energy in domestic raw material (ktoe)**		**Amount of imported raw material from EU (*)**		**Primary energy in amount of imported raw material from EU (ktoe)**		**Amount of imported raw material from non-EU countries (*)**		**Primary energy in amount of imported raw material from non EU (ktoe)**	
	2017	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.)**	5 768	5 975	1 791	1 855	6	6	2	2	5	6	2	2
Indirect supply of wood biomass (residues and co-products from wood industry, etc.)**	3 944	4 005	1 053	1 082	849	718	235	200	25	10	7	3
Energy crops (grasses, etc.) and short rotation trees (please specify)	415	371	152	133	0	0	0	0	0	0	0	0
Agricultural by-products / processed residues and fishery by-products **	5 323	5 289	541	538	0	0	0	0	0	0	0	0
Biomass from waste (municipal, industrial, etc.) ** **	4 282	4 199	158	153	0	0	0	0	0	0	0	0
Other (please specify)	0	0	0	0	0	0	0	0	0	0	0	0
Biomass supply for transport:												
Common arable crops for biofuels (please specify main types)	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.	N.a.
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)	0	0	0	0	0	0	0	0	0	0	0	0
Others (please specify)	0	0	0	0	0	0	0	0	0	0	0	0

Amount of raw material, if possible, in m^3 for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste.

** The definition of this biomass category should be understood in line with Table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final, establishing a template for the National Renewable Energy Action Plans under Directive 2009/28/EC. .

Table 4a. **Current domestic agricultural land use for production of crops dedicated to energy production (ha)**

Land use	Area (*ha*)	
	2017	**2018**
1. Land used for common arable crops (wheat, sugar beet, etc.) and oilseeds (rapeseed, sunflower, etc.). (Please specify main types.) *1	**159 904** (canola, sugar beet, maize)	**123 662** (canola, sugar beet, maize)
2. Land used for short rotation trees (willows, poplars). (Please specify main types.)	**2 850** (mainly poplars, source LPIS)	**2 738** (mainly poplars, source LPIS)
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, *Miscanthus*), sorghum. (Please specify main types.)	**Not monitored**	**Not monitored**

*1 This is not land used, but a reverse estimate of land area needed to produce biofuels; Source: Research Institute of Agricultural Engineering

Note: for short rotation trees this is information on the areas included in the LPIS system as an SRT culture. The area for other cultivated energy crops is not monitored as a separate culture.

7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources? Please provide, where available, references to relevant documentation on these impacts in the Czech Republic *(Article 22(1)(h) of Directive 2009/28/EC)*.

When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.

As a result of the use of biomass purposefully grown for energy use, there was no impact on the increase in agricultural commodity prices.

Over the last 2 years, there has been no significant change in land use for cultivating raw materials for the production of traditional biofuels. The main raw materials for the production of biofuels in 2017 and 2018 were canola, sugar beet, maize (see Tab. 4a).

An important aspect in the consideration of the impact that biomass used for energy purposes in the Czech Republic has on prices and land use is also the fact that the Czech Republic has available sufficient arable land to secure 100% food self-sufficiency, as well as to meet its 10% RES target in transport, without there being competition for the use of arable land for these different purposes (see the Biomass Action Plan for 2012-2020, approved by the government on 12 September 2012).

8. Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material *(Article 22(1)(i) of Directive 2009/28/EC)*.

***Table 5*: Production and consumption in accordance with Article 21(2) (Ktoe)**

Biofuels in accordance with Article 21(2)[26]	2017*	2018*
Production – FAME from waste food and animal fats *)	-	-
Consumption – FAME from waste food and animal fats	-	-
Total production of biofuels in accordance with 21(2) 21(2)	-	-
Total consumption of biofuels in accordance with 21(2) 21(2)	-	-
% share of fuels in accordance with Article 21(2) in total RES-T	-	-

*) Article 21 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC was repealed by
Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources

9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality, and soil quality within the Czech Republic in the preceding 2 years. Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within the Czech Republic (*Article 22(1)(j) of Directive 2009/28/EC)*.

The conditions which a farmer must fulfil for growing biofuel feedstock are no different from those for growing foodstuffs, namely compliance with good agricultural and environmental conditions (GAEC). Compliance with these conditions is checked and is linked to the payment of subsidies. Non-compliance would entail the risk of a financial penalty for the farmer. For this reason, no impact is expected during the cultivation period.

The area of agricultural land on which biomass specifically grown for non-food use is produced is declared every year by the farmers in the Single Application of the State Agricultural Intervention Fund.

The impact of agricultural production on biodiversity, water, soil, air, and other aspects of the environment are routinely monitored in the Czech Republic and are evaluated using a set of relevant indicators. The values of selected indicators are presented to the government and made public through the annual Report on the State of Agriculture, Report on the Environment, and the Sustainable Development Report for the Czech Republic. In the 2017 – 2018 monitoring period, the value of most of the agricultural environmental impact indicators remained at approximately the same level.

In comparison with 2017, the consumption of mineral fertilisers decreased by 11.1% to 122.9 kg of net nutrients per ha in 2018. The consumption of livestock manure has stagnated since 2014, in 2018 70.0 kg per hectare of livestock and organic manure was consumed. The consumption of lime materials improving the production capacity of soils reached the highest value since 2000 – a total of 340.0 thousand tons of calcium mass was consumed in 2018. Compared to 2017, the consumption of plant protection products decreased by 8.0%; in 2018 their consumption was 4 388.5 thousand kilograms of active substances.

Chart: Development of mineral fertiliser consumption in the Czech Republic (kg of net nutrients per ha) in 2000–2018 *(data source Ministry of Agriculture)*

[26] Biofuels made from wastes, residues, non-food cellulosic material, and lignocellulosic material.

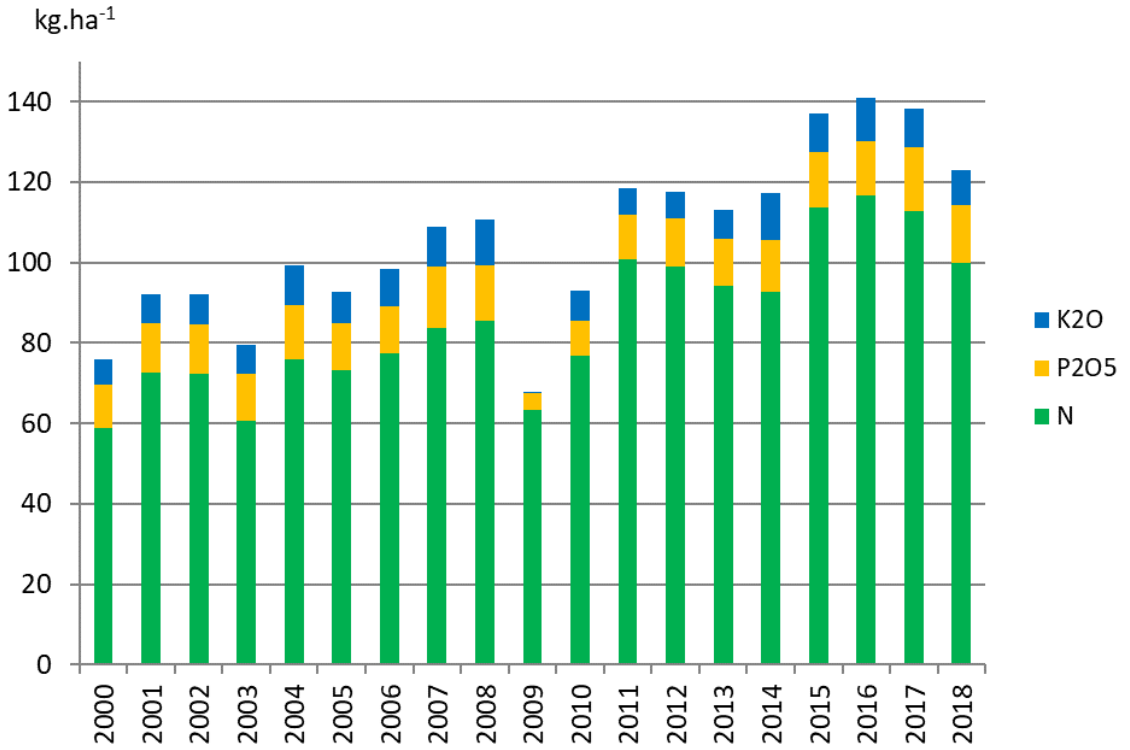
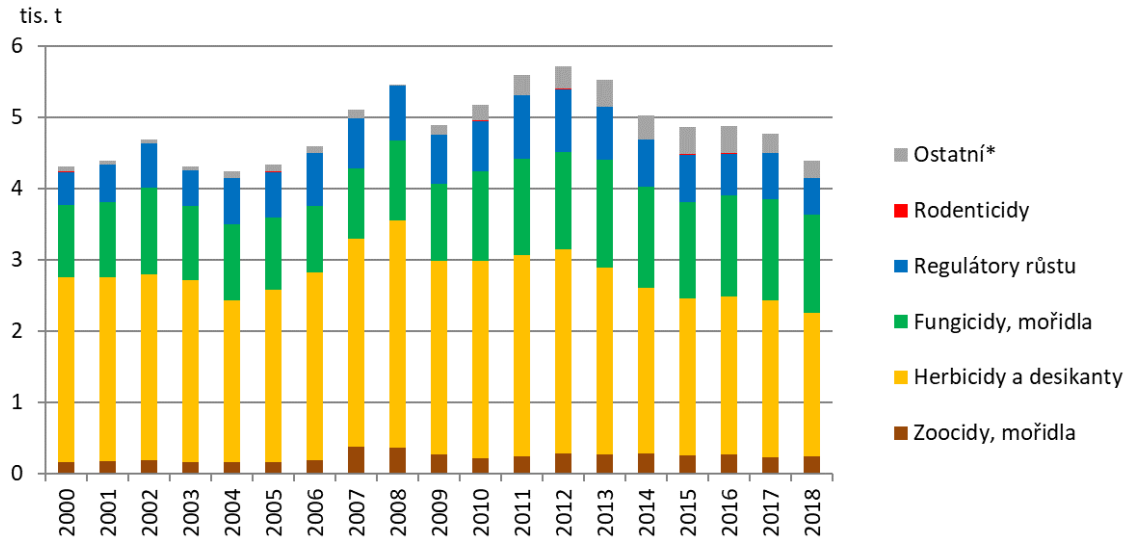


Chart: Consumption of active substances contained in plant protection products and other agents by purpose of use in the Czech Republic (thousand tonnes of active substance) for 2000–2018 *(data source Ministry of Agriculture)*



Method of demonstrating compliance with biofuel sustainability criteria in the Czech Republic

In the Czech Republic the obligation to demonstrate compliance with sustainability criteria is contained in Act No 201/2012 on air protection, as amended and in an accompanying Government Decree No 189/2018 on criteria for sustainability of biofuels and reduction of greenhouse gas emissions from fuels. According to the Czech system, each economic entity involved in the biofuel production chain must hold a valid certificate that gives the entity the right to issue documents of compliance with sustainability criteria for each batch of sustainable products. The only exception are biomass producers who do not need to have a certificate, as they are inspected within the scope of checks on biomass sellers. An economic entity purchasing biomass directly from its producers must have a separate declaration for biomass producers, of compliance with sustainability criteria, issued by the biomass producer.

Fulfilment of sustainability criteria for sellers and importers of biomass (person defined in Section 21(3) of Act No 201/2012) and for manufacturers, importers and sellers of liquid or gaseous products intended for the production of biofuels (person defined in Section 21(2) 117(2) of Act No 201/2012) is documented by a partial declaration of compliance with sustainability criteria.

Compliance with sustainability criteria by producers, importers, and sellers of biofuels and importers and sellers of motor petrol and motor diesel with the addition of biofuel not released into free tax circulation in the Czech Republic (person defined in Section 21(1) Section 7(1) of Act No 201/2012) is documented by a declaration of compliance with sustainability criteria.

In order for the economic entities referred to above to be able to issue documents confirming compliance with sustainability criteria for each batch of sustainable products, they must hold a certificate granted by a person authorised in accordance with Section 32(1)(f) of the above Act.

If an economic entity is a holder of a certificate or other similar authorisation issued in accordance with the legislation of another EU Member State, the declarations and partial declarations issued by it may be recognised in accordance with Section 21(11) of Act No 201/2012 only if it is registered with the Ministry of the Environment. The economic entity must document to the Ministry of the Environment that it holds a certificate or other similar authorisation issued in line with the laws of another European Union Member State.

The compliance with sustainability criteria may be demonstrated, in accordance with Section 21(12) of Act No 201/2012, by the involvement of the economic entity in a voluntary system recognised by a decision of the European Commission issued in accordance with Article 18(4) of Directive 2009/28/EC or in accordance with Article 7c(4) of Directive 2009/30/EC.

The authorisation to issue certificates is granted in accordance with Section 117(2) of Act No 201/2012 by the Ministry of the Environment in agreement with the Ministry of Agriculture. With its application for an authorisation, the applicant must enclose a list of individuals who will carry out the certification, certificates of accreditation for that work issued by the Czech accreditation institute (Český institut pro akreditaci, o.p.s.), and a description of the work processes, methods, and principles that will ensure due control of compliance with sustainability criteria by certified persons.

A list of authorised persons is available at:

http://www.mzp.cz/cz/kriteria_udrzitelnosti_ovzdusi

An authorised person shall:

- Check at least once a year whether the economic entities to which it issued a certificate still comply with the requirements for the granting thereof; where the economic entity manages biofuels produced from used cooking oil or fats from carcass disposal plants or advanced biofuels, the check shall be carried out every six months;
- if economic entities purchase biomass directly from biomass producers, it must check at least 3% of biomass producers; where the economic entities purchase biomass or an intermediate product for the production of advanced biofuels, a minimum of 5% of biomass producers must be checked.
- Draw up a report after each inspection and archive it for 5 years;
- In the event that shortcomings are found in adherence to sustainability criteria, send a copy of the report without delay to the Czech Environmental Inspectorate;
- Send copies of the certificates issued to the Ministry of the Environment;
- By 28 February, draw up a summary report of inspections conducted in the previous calendar year and send the report to the Ministry of the Environment.

A list of certified persons is available at:

http://www.mzp.cz/cz/kriteria_udrzitelnosti_ovzdusi

Obligations of economic entities

Economic entities (biomass sellers and importers, producers, importers, and sellers of liquid or gas products for biofuel production, producers, importers, and sellers of biofuel, and producers and sellers of motor petrol and motor diesel with an addition of biofuel not released into free tax circulation in the Czech Republic) shall only receive a certificate from an authorised person if they have introduced a quality control system enabling credible documentation and monitoring of compliance with sustainability criteria. Furthermore, economic entities must have a weight balance system introduced for documenting compliance with sustainability criteria. A certificate is valid for 12 months.

A quality system must allow at any point for the documentation of the origin of biomass, intermediate products intended for the production of biofuels, and biofuels themselves, and must include:

- The introduction and reporting of a weight balance system documenting in full the origin of biomass, intermediate products intended for the production of biofuels, and biofuels themselves, compliant with sustainability criteria in their mixing with products which do not comply with sustainability criteria;

- Maintaining of a record of inbound and outbound products and their link in the records to independent declarations received, interim declarations of compliance received and issued, and declarations of compliance with sustainability criteria received and issued;
- Retention of a record for at least 5 years;
- Maintenance of a record of intra-company processes.

The weight balance system allows for the mixing of supplies of biomass, intermediate products intended for the production of biofuels, and biofuels themselves which comply with sustainability criteria, in spite of them manifesting a different production of greenhouse gas emissions, and furthermore, it must ensure that:

- Information about the weight and production in each inbound supply of biomass, intermediate products intended for the production of biofuels, and biofuels themselves would be included in the documentation accompanying the mixture;
- The sum of the weights and production of greenhouse gases in supplies compliant with sustainability criteria added into mixtures would equal or be greater than the sum of weights and production of greenhouse gas supplies compliant with sustainability criteria taken from the mixture;
- In the case of the mixing of products compliant with sustainability criteria with those that do not meet the criteria, the amount of sustainable products added to the mixture would be established in advance and the amount of products that are removed from the mixture and are to serve as products compliant with sustainability criteria would not be greater than the amount of sustainable criteria of the products added to the mixture.

Check on economic entities

In the Czech Republic, economic entities are essentially subject to two levels of control.

The first is carried out by the person authorised, which is entitled not to issue a new certificate to an economic entity, or to revoke an old one. In that case, the economic entity is not able to issue documents of compliance with sustainability criteria.

The second check is performed by state administration authorities, which are entitled to impose high penalties on economic entities.

The Ministry of Agriculture is authorised to check on biomass producers and sellers. The Czech Environmental Inspectorate is authorised to check on producers and sellers of liquid and gas products for biofuel production, on biofuel producers and sellers, and on sellers of motor petrol and motor diesel with an addition of biofuel not released into free tax circulation in the Czech Republic. Customs authorities are authorised to check on biomass importers, importers of liquid and gas products for biofuel production, importers of biofuel, and importers of motor petrol and motor diesel with an addition of biofuel not released into free tax circulation in the Czech Republic. Furthermore, customs authorities check whether fuel suppliers included, in their obligation to ensure a minimum share of biofuels in fuel pursuant to Section 19, and in the compulsory reduction of greenhouse gas emissions from fuel pursuant to Section 20, only biofuels compliant with sustainability criteria.

Particulars of a record of economic entities and particulars of documents showing compliance with sustainability criteria

Particulars of records of economic entities

- Information about individual inbound and outbound deliveries, namely:
  - Independent declarations received from biomass producers, interim declarations of compliance with sustainability criteria received and issued, and declarations of compliance with sustainability criteria received and issued, copies of certificates of all suppliers;
  - Delivery documents for inbound and outbound deliveries;
  - Purchase agreements or orders for inbound and outbound deliveries;
  - Identification of the supplier/client and unique identification numbers of inbound and outbound deliveries;
  - Type of inbound/outbound sustainable product;
  - Date of delivery/shipping of a sustainable product;
  - Volume;
  - Clear identification of the place of entry into and exit from store;
  - Country of origin of biomass;
  - Information about the method of determining the value of greenhouse gas emission production;
  - Value of production of greenhouse gas emissions, in gCO_{2ekv}/kg or gCO_{2ekv}/MJ;
  - Identification of the supplies for which a bonus for growing on degraded land was used, or a bonus for using improved agricultural procedures;
  - Identification of deliveries made out of waste.
- Information from the production process:
  - Document of the date of the placement of the installation into operation;
  - The volume of loss (change in weight) of the products originating in intra-company procedures (treatment of biomass, intermediate products, or biofuel to obtain the required quality (drying to the required humidity level, removal of undesirable admixtures),
  - In the case of producers of intermediate products and biofuel producers, the conversion factors required for weight balance calculation (e.g., the volume of biomass used required for the production of one tonne of intermediate product or one tonne of biofuel;
  - In the case of the determination of the value of greenhouse gas emission production using actual values, a record of all energy input and output in the production process and efficiency of energy conversion, and other information from operational records decisive for determining greenhouse gas emission production.

Particular of records of biomass producers:

- Area of the land on which biomass compliant with sustainability criteria is grown;
- Agriculture culture of the soil on which biomass compliant with sustainability criteria is grown;
- Types of biomass grown, and yield for the relevant calendar year;
- Copies of each independent declaration issued;

- Record of each outbound supply, consisting of the following information:
  - Unique identification number of an independent declaration;
  - Identification information of the client;
  - Identification information of each outbound delivery;
  - Volume and type of biomass sold;
  - Shipping date;
  - Value of greenhouse gas emission production;
- If actual values of greenhouse gas emission production are used, the biomass producer shall keep a record of information that has a significant impact on greenhouse gas emission production;
- If a bonus for growing on degraded land was used, or a bonus for using improved agricultural procedures in the calculation of actual values of greenhouse gas emissions was used, identify the deliveries for which the bonus was applied.

Particulars of a separate declaration for biomass producers:

- Unique identification number of separate declaration assigned by the issuer;
- Identification data of the issuer and recipient of the declaration;
- Declaration as to whether biomass comes from land that was arable land prior to 1 January 2008;
- Declaration as to whether biomass was not grown on land with a high value of biological diversity, on land with a high carbon stock, or in a peat bog;
- Declaration stating that the biomass was grown in line with requirements and standards in accordance with the common rules for the direct support regime under the common agricultural policy of the European Union;
- Information about biomass, including its type, year of harvest, and place of cultivation;
- Information as to whether a partial standard value for growing or the actual value is to be used for determining the value of production of greenhouse gas emissions;
- Place and date of issue and signature of the person authorised to issue the declaration.

Particulars of an interim declaration of conformity with sustainability criteria:

- Unique identification number of interim declaration of conformity assigned by the issuer;
- Identification data of the issuer and recipient of the interim document;
- Type of biofuel (including original raw materials) and the total volume thereof;
- Country of origin of the biomass;
- Information concerning the method of determining the volume of greenhouse-gas emissions produced;
- Value of greenhouse-gas emission production in gCO_{2eqv}/kg, or gCO_{2eqv}/MJ;
- Place and date of issue and signature of the person authorised to issue the declaration.

Particulars of declaration of conformity with sustainability criteria:

- Unique identification number of declaration of conformity assigned by the issuer;
- Identification data of the issuer and recipient of the document;
- Type of biofuel (including original raw materials) and the total volume thereof;
- Country of origin of the biomass used for biofuel production;

- Information concerning the method of determining the volume of greenhouse-gas emissions produced;
- Value of greenhouse-gas emission production in gCO_{2eqv}/MJ;
- Place and date of issue and signature of the person authorised to issue the declaration.

10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (*Article 22(1)(k) of Directive 2009/28/EC)*.

***Table 6*: Estimated GHG emission savings from the use of renewable energy (t CO_{2eq})**

Environmental aspects	2017	2018
Total estimated net GHG emission saving from using renewable energy[1]	*14 269 330*	*14 239 823*
- Estimated net GHG saving from the use of renewable electricity	5 078 743	4 899 440
- Estimated net GHG saving from the use of renewable energy in heating and cooling	8 303 749	8 464 394
- Estimated net GHG saving from the use of renewable energy in transport *1	886 838	875 989

Source: Biofuels consumption according to MPO statistics https://www.mpo.cz/assets/cz/energetika/statistika/kapalna-biopaliva/2017/3/Kapalna_biopaliva_2016CZ_12Cs.pdf. Production of emissions from emission reports that are submitted annually by fuel suppliers to the MOE.

11. Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020 (*Article 22(1)(l) of Directive 2009/28/EC)*.

It is not expected that the RES targets for the Czech Republic would be met by RES energy transfers from another EU Member State before 2020. Nor is it expected that the Czech Republic would transfer an RES energy surplus to another EU Member State. Hence the values shown below in Table 7 constitute only theoretical calculations based on the difference in values between a scenario devised in accordance with Directive 2009/28/EC and resulting in a binding target for the share of RES energy for the Czech Republic of 13% in 2020, and a scenario based on the expected updated developments through to 2020, as stated in the updated 2015 RES NAP that was approved in January 2016, which will probably exceed the binding values determined for the Czech Republic.

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy, compared to the indicative trajectory, which could be transferred to/from other Member States and/or third countries in the Czech Republic (ktoe)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated excess in forecast document	-	-	-	-	-	-	-	-	-	-	-
Surplus estimated in the National Renewable Energy Action Plan	0.00	0.00	0.00	0.00	1145.97	1039.66	946.81	862.87	891.73	678.04	642.54
Estimated deficit in forecast document	-	-	-	-	-	-	-	-	-	-	-
Insufficient production estimated in the National Renewable Energy Action	-	-	-	-	-	-	-	-	-	-	-

Plan											

11.1 Please provide details of statistical transfers, joint projects, and joint support scheme decision rules.

The Czech Republic is not currently considering the use of a 'cooperation mechanism' facilitating cross-border support for renewable energy, such as statistical transfers, joint projects, and joint support schemes. In 2017 and 2018, the Czech Republic did not use any cooperation mechanism with another Member State.

12. Please provide information on how the share of biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates (*Article 22(1)(n) of Directive 2009/28/EC)*.

The proportion of biodegradable municipal waste specified in Decree No 477/2012, on determining the types and parameters of renewable sources supported for electricity, heat or biomethane production, and on the establishment and preservation of documents, is determined on the basis of consultation and information from the IEA, Eurostat, other EU countries, and information from local operators of municipal waste incinerators.