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Report on the technical review of the third biennial report of Czechia

Developed country Parties were requested by decision 2/CP.17 to submit their third biennial report to the secretariat by 1 January 2018. This report presents the results of the technical review of the third biennial report of Czechia, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention".

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Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
AR4	Fourth Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
IPPC	integrated pollution prevention and control
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NF_3	nitrogen trifluoride
NO	not occurring
N_2O	nitrous oxide
non-ETS sectors	sectors not covered by the European Union Emissions Trading System
PaMs	policies and measures
PFC	perfluorocarbon
SF_6	sulfur hexafluoride
UNFCCC reporting guidelines on BRs	"UNFCCC biennial reporting guidelines for developed country Parties"
UNFCCC reporting guidelines on NCs	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications"
WAM	'with additional measures'
WEM	'with measures'

I. Introduction and summary

A. Introduction

1. This is a report on the in-country technical review of the BR3[1] of Czechia. The review was organized by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention" (annex to decision 13/CP.20).

2. In accordance with the same decision, a draft version of this report was transmitted to the Government of Czechia, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

3. The review was conducted from 12 to 17 March 2018 in Prague by the following team of nominated experts from the UNFCCC roster of experts: Mr. Leandro Buendia (Philippines), Ms. Vaiva Jurevičienė (Lithuania), Ms. Karin Kindbom (Sweden) and Mr. Elsayed Sabry (Egypt). Mr. Buendia and Ms. Kindbom were the lead reviewers. The review was coordinated by Mr. Pedro Torres (UNFCCC secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the BR3 of Czechia in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

1. Timeliness

5. The BR3 was submitted on 22 December 2017, before the deadline of 1 January 2018 mandated by decision 2/CP.17. The CTF tables were also submitted on 22 December 2017.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Czechia in its BR3 mostly adheres to the UNFCCC reporting guidelines on BRs.

Table 1
Summary of completeness and transparency of mandatory information reported by Czechia in its third biennial report

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendations*
GHG emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Complete	Mostly transparent	Issues 1 and 2 in table 5 Issue 2 in table 10
Provision of support to developing	NA	NA	NA

[1] The BR submission comprises the text of the report and the CTF tables, which are both subject to the technical review.

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendations*
country Parties[a]			

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III below.

[a] Czechia is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3, 4 and 5, of the Convention.

II. Technical review of the information reported in the third biennial report

A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

Information on greenhouse gas inventory arrangements, emissions, removals and trends

(a) Technical assessment of the reported information

7. Total GHG emissions[2] excluding emissions and removals from LULUCF and including indirect CO_2 emissions decreased by 35.4 per cent between 1990 and 2015, whereas total GHG emissions including net emissions or removals from LULUCF and indirect CO_2 emissions decreased by 36.7 per cent over the same period. Table 2 illustrates the emission trends by sector and by gas for Czechia.

Table 2
Greenhouse gas emissions by sector and by gas for Czechia for the period 1990–2015

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Sector									
1. Energy	158 569.90	120 785.21	111 261.56	96 618.86	97 973.60	–38.2	1.4	81.0	77.1
A1. Energy industries	56 915.91	62 061.93	61 621.14	53 533.77	53 628.86	–5.8	0.2	29.1	42.2
A2. Manufacturing industries and construction	51 234.04	23 425.60	12 082.92	9 703.89	9 921.80	–80.6	2.2	26.2	7.8
A3. Transport	7 284.03	11 932.42	17 007.86	16 966.80	17 747.55	143.7	4.6	3.7	14.0
A4. and A5. Other	31 274.42	16 239.21	14 758.13	11 900.60	12 287.64	–60.7	3.3	16.0	9.7
B. Fugitive emissions from fuels	11 861.51	7 126.06	5 791.51	4 513.80	4 387.76	–63.0	–2.8	6.1	3.5
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	17 080.37	14 720.47	14 965.30	15 787.85	15 413.84	–9.8	–2.4	8.7	12.1
3. Agriculture	17 049.98	8 975.75	7 761.98	8 280.62	8 482.99	–50.2	2.4	8.7	6.7
4. LULUCF	–6 487.71	–8 805.07	–7 200.07	–7 801.09	–6 640.69	2.4	–14.9	NA	NA
5. Waste	3 126.83	3 743.17	4 637.01	5 151.31	5 256.41	68.1	2.0	1.6	4.1
6. Other	NO	NO	NO	NO	NO	NA	NA	NA	NA
Indirect CO_2	2 121.74	1 155.54	967.43	777.69	798.70	–62.4	2.7	NA	NA

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2017 annual submission, version 4.

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Gas[a]									
CO_2	161 649.59	125 788.18	116 159.34	102 799.18	103 769.75	–35.8	0.9	82.5	81.6
CH_4	23 450.87	15 221.02	14 242.64	13 628.21	13 694.48	–41.6	0.5	12.0	10.8
N_2O	10 642.52	6 829.79	5 746.66	6 081.60	6 112.73	–42.6	0.5	5.4	4.8
HFCs	NO	272.92	2 348.97	3 229.53	3 455.08	NA	7.0	NA	2.7
PFCs	NO	4.69	48.01	3.02	1.96	NA	–35.1	NA	0.0
SF_6	84.10	107.99	80.23	94.73	90.55	7.7	–4.4	0.0	0.1
NF_3	NO	NO	NO	2.35	2.29	NA	–2.8	NA	0.0
Total GHG emissions without LULUCF	**195 827.08**	**148 224.60**	**138 625.85**	**125 838.63**	**127 126.83**	**–35.1**	**1.0**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**189 339.37**	**139 419.53**	**131 425.78**	**118 037.53**	**120 486.14**	**–36.4**	**2.1**	**NA**	**NA**
Total GHG emissions without LULUCF, including indirect CO_2	**197 948.82**	**149 380.15**	**139 593.28**	**126 616.31**	**127 925.53**	**–35.4**	**1.0**	**NA**	**NA**
Total GHG emissions with LULUCF, including indirect CO_2	**191 461.11**	**140 575.08**	**132 393.21**	**118 815.22**	**121 284.84**	**–36.7**	**2.1**	**NA**	**NA**

Source: GHG emission data: Czechia's 2017 annual submission, version 4.
[a] Emissions by gas without LULUCF and without indirect CO_2.

8. The decrease in total emissions was driven mainly by factors such as the decrease in production and subsequent restructuring of the economy in the early 1990s, which was triggered by the change in the political system, as well as the economic recession caused by the 2008 world economic crisis, leading to a drop in industrial and other economic activity. In addition, the adoption of PaMs to reduce GHG emissions and the introduction of low-carbon technologies and renewable energy sources with the modernization and reform of the industrial and energy sectors, as well as improvements to agriculture and waste management practices, have had an impact on reducing GHG emissions. CO_2 emissions per unit of electricity produced decreased from 0.94 kt CO_2/GWh to 0.62 kt CO_2/GWh in 2016, with a minimum of 0.59 kt CO_2/GWh in 2014. The increase between 2014 and 2016 resulted from the decrease in the share of energy generated by hydropower plants caused by unfavourable climatic conditions.

9. In brief, Czechia's national inventory arrangements were established in accordance with the Kyoto Protocol, decision 20/CP.7 and the EU monitoring mechanism regulation (525/2013). The changes in the arrangements since the BR2 are primarily related to staff appointments and did not affect the functions of the national inventory arrangements.

(b) Assessment of adherence to the reporting guidelines

10. The ERT assessed the information reported in the BR3 of Czechia and identified an issue relating to transparency. The finding is described in table 3.

Table 3
Findings on greenhouse gas emissions and trends from the review of the third biennial report of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 2	In its BR3 (p.223) Czechia reported its emissions under the ESD to be 56.62 Mt CO_2 eq in 2015, whereas in a presentation the Party stated that the emissions were estimated to be 61.28 Mt CO_2 eq in 2015.
	Issue type: transparency	During the review, Czechia clarified that the figure reported in the BR3 was based on an approximated inventory, in which the emissions for 2015 had been underestimated.
	Assessment: encouragement	The ERT encourages the Party to provide in its next BR the latest available estimates of its GHG emissions under the ESD.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on BRs.

B. Assumptions, conditions and methodologies related to the attainment of target

1. Technical assessment of the reported information

11. For Czechia the Convention entered into force on 21 March 1994. Under the Convention Czechia committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The EU offered to move to a 30 per cent reduction target on the condition that other developed countries commit to a comparable target and developing countries contribute according to their responsibilities and respective capabilities under a new global climate change agreement.

12. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using global warming potential values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU ETS.

13. The EU 2020 climate and energy package includes the EU ETS and the ESD (see chapter II.C.1 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emissions cap has been put in place for the period 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from non-ETS sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

14. Under the ESD, Czechia has a target of limiting its emission growth to 9.0 per cent above the 2005 level by 2020 for non-ETS sectors. National emission targets for non-ETS sectors for 2020 have been translated into binding quantified AEAs for the period 2013–2020. Czechia's AEAs change following a linear path from 62,474.35 kt CO_2 eq in 2013 to 67,204.65 kt CO_2 eq in 2020.[3]

15. According to information reported by the Party during the review, Czechia is projected to limit its GHG emission growth by a greater amount than that required under the ESD. More specifically, it expects to reduce its emissions under the ESD to 61.86 Mt

[3] European Commission decision 2017/1471 of 10 August 2017 amending decision 2013/162/EU of 26 March 2013 to revise member States' AEAs for the period from 2017 to 2020.

CO_2 eq by 2020 under the WEM scenario, which is –2.6 per cent below the 2005 level. In its BR3 Czechia stated that, to achieve their targets, EU member States may use international credits up to a limit of 3 per cent of emissions under the ESD in 2005.

16. The EU has prepared a legislative proposal for an effort-sharing regulation setting binding annual GHG emission targets for its member States for the period 2021–2030. Overall, the proposal sets a binding economy-wide domestic emission reduction target of at least 40 per cent by 2030 compared with the 1990 level. For Czechia this translates into a reduction of 14 per cent below the 2005 level by 2030 for non-ETS sectors.

2. Assessment of adherence to the reporting guidelines

17. The ERT assessed the information reported in the BR3 of Czechia and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

C. Progress made towards the achievement of the quantified economy-wide emission reduction target

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

18. Czechia provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention and its Kyoto Protocol. It reported on its policy context and legal and institutional arrangements put in place to implement its commitments and monitor and evaluate the effectiveness of its PaMs.

19. Czechia provided information on a set of PaMs similar to those previously reported, with a few exceptions. It reported that there have been no substantial changes made since the previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target.

20. The changes reported by Czechia are related to staff appointments in the national inventory system, which did not affect the arrangements for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target. During the review, Czechia provided further information on changes to its institutional arrangements. It informed the ERT that an Interministerial Working Group on Climate Protection was established in 2015. The national platform contributes to and improves cooperation, exchange of information and coordination of the planning and implementation of specific climate change PaMs at ministry level. Also, other stakeholders and non-governmental representatives are actively involved in the Interministerial Working Group in order to ensure transparency at the governmental and non-governmental level.

21. Czechia reported on its self-assessment of compliance with the emission reduction target and national rules for taking action against non-compliance. For the second commitment period of the Kyoto Protocol, the EU and its member States will fulfil their quantified emission limitation and reduction commitments jointly. The EU-wide policies for achieving the target are the EU ETS and the ESD. The provisions for non-compliance in non-ETS sectors are included in Article 7 of the ESD. Specifically, if the GHG emissions of a member State exceed its AEA, several measures can be applied, such as deduction from the member State's emission allocation for the next year and the development of a corrective action plan. During the review, Czechia explained that the ESD applies directly to EU member States and therefore the Party has no specific domestic legislation on non-compliance in place.

22. The key overarching cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative

proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package.

23. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities) that produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013).

24. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and it includes binding annual targets for each member State for 2013–2020. Czechia's target under the ESD is to limit its emission growth to 9.0 per cent above the 2005 level by 2020.

25. An additional EU-wide policy that has significant mitigation impact in Czechia is the IPPC directive. The Integrated Prevention Act implements the IPPC directive in Czechia, which reported that, with regard to GHG emissions, the Integrated Prevention Act requires the regulator to apply the best available technology concept, which should lead to reduced emissions and increased energy efficiency of production.

26. Czechia highlighted the EU-wide mitigation actions that are under development, such as the requirement for all member States to submit an Integrated National Energy and Climate Plan, for the period 2021–2030, to the EU by 31 December 2018. Under this requirement, member States must set out their objectives, targets and contributions relating to decarbonization, energy efficiency, energy security, the internal energy market, research, innovation and competitiveness. The requirement was established under the regulation on the governance of the Energy Union, the goals of which are, inter alia, to ensure that the objectives of the Energy Union, especially the EU 2030 energy and climate targets, are achieved and to incorporate the provisions of the existing EU monitoring mechanism regulation (525/2013) and harmonize them with the provisions of the Paris Agreement.

27. Czechia has introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. Some of the adopted policy frameworks and cross-sectoral measures that have mitigation impacts include the Integrated Prevention Act, the State Environmental Policy 2012–2020, the State Energy Policy, the Climate Protection Policy of the Czech Republic (adopted in 2017), the National Renewable Energy Plan (which implements EU directive 2009/28 on renewable energy), the National Energy Efficient Action Plan (which implements EU directive 2012/27/EU on energy efficiency) and the National Action Plan for Clean Mobility and the Waste Management Plan (2015–2024). The Climate Protection Policy outlines a low-carbon development strategy, the main objective being to determine an appropriate mix of cost-effective measures and tools in key sectors that will lead to achieving the Party's GHG emission reduction targets until 2030, with an outlook to 2050.

28. The key national PaMs targeting ESD sectors are the New Green Savings Programme (2015–2020), which supports energy efficiency improvements and increasing the use of renewable energy in residential and commercial buildings, and the territorial planned measures, which aim to reduce energy consumption in the transport sector following the improvement of transport infrastructure. Other policies that have delivered significant emission reductions are the Rural Development Programme in the agriculture sector and the Waste Management Programme in the waste sector.

29. Czechia highlighted domestic mitigation actions that are under development, such as a road toll for trucks weighing more than 3.5 t and economic and tax tools to support low-emission vehicles. Both measures are planned to be implemented in 2020. Additionally, Czechia discussed in its BR3 measures under preparation, such as an amendment to the

government order on the purchase of road vehicles and a draft government order on biofuel sustainability criteria and reduction of emissions from fuels. During the review, Czechia stated that a new scheme of support for renewable energy sources for after 2020 is also under preparation.

30. Table 4 provides a summary of the reported information on the PaMs of Czechia.

Table 4
Summary of information on policies and measures reported by Czechia

Sector	*Key PaMs*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*	*Estimate of mitigation impact by 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	EU ETS	3 230	5 249
	Climate Protection Policy of the Czech Republic	NA	NA
	Operational Programme Environment 2014–2020	528	443
	National Emission Reduction Programme	NA	NA
Energy	State Energy Policy	NA	NA
	Energy Management Act	NA	NA
Transport	Territorial planned measures	387	676
	Regulation on CO_2 from light-commercial vehicles	486	787
	Support for biofuels	176	152
	Regulation on CO_2 from cars	237	803
	Modal shift	134	109
	Operational Programme Transport	177	173
	National Action Plan for Clean Mobility	NA	NA
Renewable energy	Promotion of renewable energy sources (preferential feed-in tariffs)	2 541	2 403
	National Renewable Energy Action Plan	NA	NA
Energy efficiency	Operational Programme Enterprise and Innovation for Competitiveness	2 320	2 040
	Implementation of the EU directive on cogeneration	1 876	1 367
	New Green Savings Programme 2015–2020 (energy efficiency and renewable energy)	1 069	896
	Efficiency improvement of district heating systems	621	495
	National Energy Efficiency Action Plan	NA	NA
IPPU	Integrated Prevention Act (IPPC directive)	2 600	2 746
	EU F-gas regulation (517/2014)	552	2 029
Agriculture	Action Plan for Development of Organic Farming	250	NA
	Biomass Action Plan in the Czech Republic 2012–2020	125	255
	Rural Development Programme 2014–2020	200	357
LULUCF	NA		
Waste	Waste Management Plan of the Czech Republic 2015–2024	330	330

Note: The estimates of mitigation impact are estimates of emissions of CO_2 or CO_2 eq avoided in a given year as a result of the implementation of mitigation actions.

31. During the review, Czechia provided further information on how it monitors and evaluates the implementation of its PaMs, including the institutional arrangements for monitoring GHG mitigation policy. Czechia explained that ex ante evaluation and monitoring through specific indicators is usually performed for all the major national and EU subsidy programmes by the responsible ministries. This work is partially coordinated by the Interministerial Working Group on Climate Protection. Czechia also explained that in early 2018 the Ministry of Environment certified a specific methodology for evaluating and designing PaMs to reduce GHG emissions. The aim of the methodology is to unify, refine and simplify the preparation of strategic documents, especially regarding the effects of mitigation actions. The methodology also provides several specific calculation tools and recommended emission factors. Some PaMs in the energy and industrial sectors are evaluated ex post and monitored by the Ministry of Industry and Trade and other ministries (e.g. Green Savings Programme 2007–2013). Other sectors are evaluated according to their respective emission trends.

(b) Policies and measures in the energy sector

32. **Energy supply**. The main strategic document for the energy sector is the State Energy Policy, which was approved in 2015. The State Energy Policy covers a period of 25 years and it will be evaluated every five years. The key strategic priorities are (1) a balanced energy mix; (2) energy savings and efficiency; (3) infrastructure and international cooperation; (4) research, development and innovation; and (5) energy security. The State Energy Policy relies on specific implementation documents or action plans, such as the National Renewable Energy Action Plan, the National Energy Efficiency Action Plan, the National Action Plan for Smart Grids, the National Action Plan for Clean Mobility and the National Action Plan for Nuclear Energy.

33. **Renewable energy sources**. The overarching implementing document for renewable energy sources is the National Renewable Energy Action Plan. The most important PaM targeting renewable energy is the promotion of renewable energy sources (preferential feed-in tariffs), which is expected to reduce emissions by about 2,541 kt CO_2 eq in 2020 and 2,403 kt CO_2 eq in 2030. In addition, several PaMs in the energy sector target both energy efficiency and renewable energy. During the review, Czechia explained that the share of renewable energy sources in final energy consumption increased from 6.8 per cent in 2004 to 14.9 per cent in 2016 and that the strategic goal for the share of renewables in primary energy sources by 2040 is to be within the range of 17–22 per cent.

34. **Energy efficiency**. The National Energy Efficiency Action Plan is the primary implementing document for energy efficiency. The PaMs with the highest mitigation impact are the Operational Programme Enterprise and Innovation for Competitiveness and the implementation of the EU directive on cogeneration. The Operational Programme Enterprise and Innovation for Competitiveness supports energy efficiency improvements and use of renewable energy sources in the energy sector, industry sector and services. The mitigation effect is estimated to be 2,320 kt CO_2 eq in 2020 and 2,040 kt CO_2 eq in 2030. The directive on cogeneration, for example, obliges distribution companies to connect cogeneration plants to the grid. The mitigation impact is estimated at 1,876 kt CO_2 eq in 2020 and 1,367 kt CO_2 eq in 2030. In its BR3 and NC7 Czechia reported on several additional PaMs targeting energy efficiency, such as the State Programme for the Support of Energy Savings and Use of Renewable Energy Sources, and support for voluntary commitments to energy savings.

35. **Residential and commercial sectors**. The New Green Savings Programme 2015–2020 supports, through investment subsidies, energy efficiency measures in residential and commercial buildings and increasing the share of renewable energy sources. It is financed by EU ETS auction revenues and is a continuation of an earlier similar programme (Green Savings Programme 2007–2013). The largest share of subsidies is used for thermal insulation in buildings and the installation of solar energy systems. The mitigation impact is estimated to be 1,069 kt CO_2 eq in 2020 and 896 kt CO_2 eq in 2030. The New Green Savings Programme was highlighted by Czechia to be one of the most effective programmes on energy efficiency. The Operational Programme Environment supports energy efficiency measures in public buildings and the replacement of old inefficient

boilers in households. The sum of the emission reductions resulting from the Operational Programme Environment 2007–2013 and the Operational Programme Environment 2014–2020 is estimated to be 793 kt CO_2 eq in 2020 and 665 kt CO_2 eq in 2030. The Integrated Regional Operating Programme also supports energy efficiency measures in buildings, with estimated emission reductions of 672 kt CO_2 eq in 2020 and 563 kt CO_2 eq in 2030.

36. **Transport sector**. The overarching implementing document in the transport sector is the National Action Plan for Clean Mobility. The PaMs targeting infrastructure planning are the territorial planned measures and the Operational Programme Transport. They both aim to reduce energy consumption in the transport sector as a result of improving transport infrastructure. The estimated mitigation impact of the territorial planned measures is 387 kt CO_2 eq in 2020 and 676 kt CO_2 eq in 2030. The mitigation effect of the Operational Programme Transport is estimated at 177 kt CO_2 eq in 2020 and 173 kt CO_2 eq in 2030. The PaMs targeting vehicle technologies and fuel quality are the regulation on CO_2 from light-commercial vehicles, which has an estimated mitigation impact of 486 kt CO_2 eq in 2020 and 787 kt CO_2 eq in 2030; the regulation on CO_2 from cars, which has an estimated mitigation impact of 237 kt CO_2 eq in 2020 and 803 kt CO_2 eq in 2030; and support for biofuels, which has an estimated mitigation impact of 176 kt CO_2 eq and 152 kt CO_2 eq in 2020 and 2030, respectively. The PaMs aimed at behavioural changes are the National Strategy of Cycling, and modal shift. Together, the PaMs in the transport sector are expected to deliver a higher mitigation impact in 2030 than in 2020.

37. The NC7 includes information on how Czechia promotes and implements the decisions of the International Civil Aviation Organization and the International Maritime Organization to limit emissions from aviation and marine bunker fuels.

(c) Policies and measures in other sectors

38. **Industrial processes**. The main PaMs in the IPPU sector are the Integrated Prevention Act, which implements the IPPC directive, and the EU regulation on F-gases. The IPPC directive, among other things, sets emission limits on pollutants and requires the use of best available technologies. Its mitigation effect in Czechia is estimated to be 2,600 kt CO_2 eq in 2020 and 2,746 kt CO_2 eq in 2030. The regulation on F-gases is projected to reduce emissions by 552 kt CO_2 eq in 2020 and 2,029 kt CO_2 eq in 2030.

39. **Agriculture**. The main PaMs in the agriculture sector are the Rural Development Programme 2014–2020, the Biomass Action Plan in the Czech Republic 2012–2020 and the Action Plan for Development of Organic Farming. The Rural Development Programme is the basic strategic and programme document, specifying in detail the measures for meeting the objectives of the development of rural areas in Czechia. Its mitigation effect is estimated to be 200 kt CO_2 eq in 2020 and 357 kt CO_2 eq in 2030. The Biomass Action Plan in the Czech Republic 2012–2020 defines appropriate measures and principles for effective and efficient use of the energy potential of biomass, and the mitigation effect is estimated to be 125 kt CO_2 eq in 2020, increasing to 255 kt CO_2 eq in 2030.

40. **LULUCF**. The main strategic documents in Czechia related to the LULUCF sector are the National Forestry Programme, the Ministry of Agriculture Strategy with a view until 2030, and the Strategy for Adaptation to Climate Change. One of the key actions in the National Forestry Programme is to alleviate the impacts of expected global climate change and extreme meteorological phenomena. During the review, the Party explained that in the Ministry of Agriculture Strategy there are two strategic targets related directly to forests, namely sustainable forest management and competitiveness of the forestry-based value chain. In the Strategy for Adaptation to Climate Change there are three strategic objectives related to forests, namely promoting natural adaptability of forests and enhancing their resilience to climate change, protection and restoration of the natural water regime in forests, and conceptual extension of nature protection to the perspective of climate change.

41. **Waste management**. The main PaMs in the waste sector is the Waste Management Plan 2015–2024, which governs waste management in the country. It sets preferences for management practices and offers projections for waste development. The plan focuses on waste prevention, increasing the share of recycling and compulsory separation of biologically degradable communal waste. The main objectives are to increase renewable

energy, enhance recycling, improve waste treatment technologies, reduce landfilling, enhance CH_4 collection and use, and improve wastewater management systems. The Waste Management Plan is expected to mitigate 330 kt CO_2 eq in 2020.

(d) Response measures

42. Czechia reported on the assessment of the economic and social consequences of its response measures. Czechia presented several initiatives aimed at minimizing adverse impacts, including supporting technology and capacity development through development assistance and the establishment of a technical training centre for the power sector at the University of Ulaanbaatar in Mongolia. Czechia also reported on cooperating in several bilateral development assistance projects that focus on reducing fossil fuel dependence and developing renewable energy sources. Czechia referred to information on the EU-wide procedures for the assessment of consequences reported in the BR3 of the EU.[4]

(e) Assessment of adherence to the reporting guidelines

43. The ERT assessed the information reported in the BR3 of Czechia and identified issues relating to transparency. The findings are described in table 5.

Table 5
Findings on mitigation actions and their effects from the review of the third biennial report of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 6 Issue type: transparency Assessment: recommendation	The ERT noted that Czechia used the notation key "NA" to report on the mitigation impacts of some mitigation actions in BR CTF table 3, including the Energy Act, the Energy Management Act, the National Renewable Energy Resources Plan and some other mitigation actions in the agriculture and LULUCF sectors, without providing any explanation. During the review, Czechia explained that some of the PaMs concerned are strategies or plans for policy areas, and that actual quantifiable measures are implemented through specific PaMs within those strategies. Czechia further explained that the measures where mitigation effects could be quantified are mainly in the agriculture sector and that there were insufficient data available to be able to calculate the effects. Czechia also explained that the expected mitigation effect of the measures currently not quantified will be rather small. The ERT reiterates the recommendation made in the previous review report that Czechia estimate and report in its next BR the mitigation impacts of PaMs in the energy sector and the agriculture sector, and, when applicable, provide an explanation of why it is not possible to estimate such mitigation impacts.
2	Reporting requirement specified in paragraph 6 Issue type: transparency Assessment: recommendation	In CTF table 3, two mitigation actions, the Rural Development Programme (2007–2013) and Horizontal Rural Development, are reported under agriculture and forestry/LULUCF, whereas in the text of the BR3 they are reported under the agriculture sector. The ERT noted that the LULUCF sector is not included in the economy-wide emission reduction target of Czechia. During the review, Czechia explained that mitigation actions under Horizontal Rural Development and the Rural Development Programme are focused on agriculture, but also include some measures related to forestry that are not part of the LULUCF sector. However, there is an overlap with the LULUCF sector because afforestation of agricultural land is also supported by the programmes. Czechia clarified that this makes up only a very small part of the expected mitigation effects. The Party agreed that the targeted sectors reported should be the same in the BR text and CTF table 3. The ERT recommends that Czechia provide consistent information between the BR and CTF table 3 on the sectors under which each mitigation action is considered, and,

[4] Available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/submitted-biennial-reports-brs-from-annex-i-parties.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
		if mitigation actions in the LULUCF sector are included, clearly indicate, for example in a footnote to CTF table 3, that mitigation actions reported under the LULUCF sector do not contribute to achieving its economy-wide emission reduction target.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on BRs.

2. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry

(a) Technical assessment of the reported information

44. For 2014, Czechia reported in CTF table 4 annual total GHG emissions excluding LULUCF of 126,616.31 kt CO_2 eq, which is 36.0 per cent below the 1990 level. In 2014 emissions from non-ETS sectors relating to the target under the ESD amounted to 57,620.66 kt CO_2 eq.

45. For 2015, Czechia reported in CTF table 4 annual total GHG emissions excluding LULUCF of 127,925.53 kt CO_2 eq, which is 35.4 per cent below the 1990 level. In 2015 emissions from non-ETS sectors relating to the target under the ESD amounted to 61,282.02 kt CO_2 eq.

46. Czechia reported in its BR3 that the contribution of LULUCF is not relevant to achieving its target under the Convention. During the review, Czechia explained that it does not intend to use units from market-based mechanisms under the Kyoto Protocol for the second commitment period. Moreover, it reported in CTF tables 4 and 4(b) that it did not use units from market-based mechanisms in the period 2013–2015.

47. Regarding its use of units from LULUCF activities, Czechia reported in CTF tables 4 and 4(a) that in the period 2013–2015 it did not use units to offset any of its GHG emissions. Table 6 illustrates Czechia's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 6
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry by Czechia to achieve its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution of LULUCF (kt CO_2 eq)*[a]	*Emissions including contribution of LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*
1990	197 948.82	NA	197 948.82	NA
2010	139 593.28	NA	139 593.28	NA
2011	137 863.57	NA	137 863.57	NA
2012	134 465.77	NA	134 465.77	NA
2013	130 561.18	NA	130 561.18	0.00
2014	126 616.31	NA	126 616.31	0.00
2015	127 925.53	NA	127 925.53	0.00

Sources: Czechia's BR3 and CTF tables 1, 4, 4(a)I, 4(a)II and 4(b).

[a] The EU's unconditional commitment to reduce GHG emissions by 20 per cent below the 1990 level by 2020 does not include emissions/removals from LULUCF.

48. In assessing the progress towards the achievement of the Party's 2020 target, the ERT noted that Czechia's emission reduction target for non-ETS sectors is 9.0 per cent above the 2005 level. In 2015 the emissions from non-ETS sectors under the ESD were 4.1 per cent (2,651.06 kt CO_2 eq) below the AEA under the ESD. The Party's emissions under the ESD have been below its AEA since 2013. Emissions and removals from the LULUCF

sector are not included in the ESD target and Czechia stated in its BR3 that it does not plan to use credits from market-based mechanisms to reach its target under the ESD.

49. The ERT noted that Czechia is making progress towards its emission reduction target by implementing and planning mitigation actions that are delivering sufficient emission reductions to comply with and stay below the annual AEAs for each year of the period remaining until 2020. On the basis of the results of the projections (see para. 63 below), the ERT also noted that the Party is making progress towards achieving its target under the Convention.

(b) Assessment of adherence to the reporting guidelines

50. The ERT assessed the information reported in the BR3 of Czechia and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

51. Czechia reported updated projections for 2020 and 2030 relative to actual inventory data for 2015 under the WEM scenario. The WEM scenario reported by Czechia includes implemented and adopted PaMs until June 2016. Updated projections of GHG emissions under the ESD were provided during the review and included in the assessment of the projections.

52. In addition to the WEM scenario, Czechia reported the WAM scenario. The WAM scenario includes planned PaMs. In its NC7 and BR3 Czechia provided a definition of its WEM scenario and explained that its WAM scenario includes additional planned PaMs such as support for voluntary commitments to energy savings in industry, economic and tax tools, and the Nitrates Directive Fourth Action Plan. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on NCs. During the review, the Party provided additional information on the PaMs included in each of the scenarios of projected GHG emissions. The ERT commends Czechia for the detailed information provided during the review.

53. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO_2, CH_4, N_2O, PFCs and HFCs (collectively), SF_6 and NF_3 for 2015–2030. The projections are also provided in an aggregated format for each sector as well as for a Party total using global warming potential values from the AR4.

54. Czechia did not report emission projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds or sulfur oxides.

55. Emission projections related to fuel sold to aircraft engaged in international transport were reported separately and were not included in the totals. Czechia explained in its NC7 that emissions related to fuel sold to ships for international transport do not occur in the country. The Party reported on factors and activities affecting emissions for each sector.

(b) Methodology, assumptions and changes since the previous submission

56. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the BR2. Czechia stated in its NC7 and BR3 that the methodology used is in line with the methodology used for the compilation of its third, fourth, fifth and sixth NCs. However, since its NC6 and BR2, the Party has changed the model used for projecting GHG emissions from fuel combustion from EFOM/ENV to MESSAGE (see issues 4–7 in table 10).

57. Czechia reported supporting information further explaining the methodology, which comprises the following set of actions: (1) preparation of the GHG inventory; (2) selection of the start and the end year and cross-sectional years for the projections; (3) selection of

methodology and modelling tools for the projections; (4) collection and analysis of input data; (5) determination of initial assumptions; (6) definition of scenarios; (7) calculation of scenarios and preparation of results; and (8) sensitivity analysis of the selected assumptions.

58. GHG emissions from fuel combustion and industrial processes were projected using the MESSAGE model. In addition, Czechia applied the COPERT IV model for projecting GHG emissions for the road transportation sector. The GHG emission projections for the agriculture sector are based on, using a spreadsheet, sectoral emission trends and information from strategic documents prepared by the Ministry of Agriculture. The EFISCEN model (see issues 4 and 5 in table 10) was used for the projection of GHG emissions/removals related to forestry, while GHG emissions and removals from other LULUCF categories were projected by applying correlations to the reference year emissions linked to the projected land-use change matrix. For projecting GHG emissions from the waste sector, statistical projected activity data were used in the final GHG emission calculations, where assumptions and forecasted scenarios from the Waste Management Plan 2015–2024 were applied.

59. To prepare its projections, Czechia relied on key underlying assumptions of population, number of households, GDP growth rate, international oil price, international coal price and international gas price. These variables and assumptions were reported in CTF table 5. The assumptions were updated on the basis of the most recent economic developments at the time of the preparation of the projections.

60. According to the Czech Statistical Office, Czechia's population is projected to slightly decrease from 2015 to 2035, while the number of households is projected to slightly increase. An official projection of long-term trends in GDP was not available for the outlook to 2030; however, the GDP trend assumed for the projections is based on predictions made by a consultancy company for the electricity market operator. An increase in GDP is projected for the most relevant sectors, such as industry, construction, agriculture, transport and services, with the highest increases in the services, transport and industry sectors. The prices of fuels in the global market were taken from 2016 EU statistical documents. International fuel prices (oil price, coal price, gas price) are projected to increase until 2035. The Party projected a decrease in coal availability, with a significant number of coal types projected to be economically unprofitable to use by 2025 (e.g. hard coking coal, hard steam coal, brown steam coal).

61. Sensitivity analyses were conducted for the most important assumptions, such as economic development indicators. A sensitivity analysis was also conducted for CO_2 emissions from fuel combustion in the energy sector (1.A). The dependency on economic development was tested for a change of ±5 per cent in GDP using the MESSAGE model. The results of the sensitivity analysis under the WEM scenario show a range for CO_2 emissions from the energy sector (1.A) of between –7.7 and +5.3 per cent.

(c) Results of projections

62. The projected emission levels under different scenarios and information on the Kyoto Protocol targets and the quantified economy-wide emission reduction target are presented in table 7 and the figure below.

Table 7
Summary of greenhouse gas emission projections for Czechia

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Kyoto Protocol base year[b]	198 316.41	NA	0.2
Quantified emission limitation or reduction commitment under the Kyoto Protocol (2013–2020)[c]	65 064.40	NA	NA

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Quantified economy-wide emission reduction target under the Convention[d]	NA	NA	NA
Inventory data 1990[e]	195 827.08	–1.3	NA
Inventory data 2015[e]	127 126.84	–35.9	–35.1
WEM projections for 2020[f]	122 497.75	–38.2	–37.4
WAM projections for 2020[f]	122 137.47	–38.4	–37.6
WEM projections for 2030[f]	108 820.83	–45.1	–44.4
WAM projections for 2030[f]	107 810.08	–45.6	–44.9

Note: The projections are for GHG emissions without LULUCF.

[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol, while for the target under the Convention it refers to the base year used for that target.

[b] The Kyoto Protocol base-year level of emissions is provided in the initial review report, contained in document FCCC/IRR/2016/CZE.

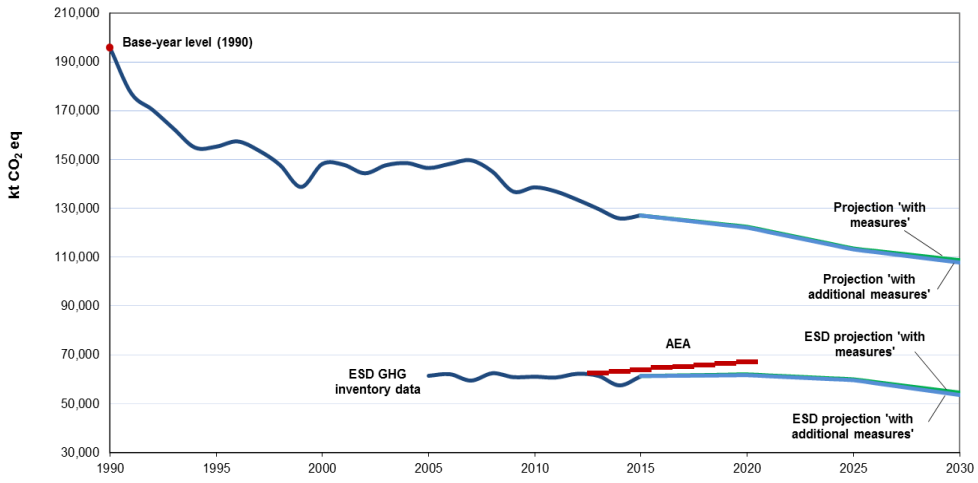
[c] The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target of the EU and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Czechia's target under the ESD is to limit its emission growth to 9.0 per cent above the 2005 level by 2020.

[d] The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020.

[e] From Czechia's BR3 CTF table 6(a).

[f] From Czechia's NC7 and/or BR3.

Greenhouse gas emission projections reported by Czechia



Sources: (1) Data for the years 1990–2015: Czechia's 2017 annual inventory submission, version 4; total GHG emissions excluding LULUCF; (2) data for the years 2016–2030: Czechia's NC7 and BR3; total GHG emissions excluding LULUCF; updated projections provided by the Party during the review.

63. Czechia's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 122,497.75 and 108,820.83 kt CO_2 eq, respectively, under the WEM scenario, which represents a decrease of 37.4 and 44.4 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 37.6 and 44.9 per cent and amount to around 122,137.47 and 107,810.08 kt CO_2 eq, respectively. The 2020 projections suggest that Czechia will continue contributing to the achievement of the EU target under the Convention.

64. Czechia's target for non-ETS sectors is to limit its emission growth to 9.0 per cent above the 2005 level by 2020 (see para. 24 above). The AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 62,474.35 kt CO_2 eq in 2013 to 67,204.65 kt CO_2 eq for 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 61,948.66 kt CO_2 eq by 2020. Under the WAM scenario, Czechia's emissions from non-ETS sectors in 2020 are projected to be 61,633.79 kt CO_2 eq. The projected levels of emissions under the WEM and WAM scenarios are 7.8 and 8.3 per cent, respectively, below the AEAs for 2020. This suggests that Czechia expects to meet its ESD target under the WEM scenario.

65. Czechia presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in table 8.

Table 8
Summary of greenhouse gas emission projections for Czechia presented by sector

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
	1990	*2020*		*2030*		*1990–2020*		*1990–2030*	
Sector		*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Energy (not including transport)	151 289	75 650	75 593	66 021	65 941	–50.0	–50.0	–56.4	–56.4
Transport	7 284	18 551	18 291	15 883	15 632	154.7	151.1	118.1	114.6
Industry/industrial processes	17 080	14 763	14 763	13 170	13 170	–13.6	–13.6	–22.9	–22.9
Agriculture	17 050	8 639	8 596	9 682	9 279	–49.3	–49.6	–43.2	–45.6
LULUCF	–6 488	–3 483	–2 953	–3 483	–3 878	–46.3	–54.5	–46.3	–40.2
Waste	3 127	4 895	4 895	4 064	3 789	56.5	56.5	30.0	21.2
Total GHG emissions without LULUCF	**195 827**	**122 498**	**122 137**	**108 821**	**107 810**	**–37.4**	**–37.6**	**–44.4**	**–44.9**

Source: GHG emission data: Czechia's 2017 annual inventory submission, version 4.

66. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy and agriculture sectors, amounting to projected reductions of 75,638.78 kt CO_2 eq (50.0 per cent) and 8,411.05 kt CO_2 eq (49.3 per cent) between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains the same. According to the projections reported for 2030 under the WEM scenario, the most significant emission reductions are also expected to occur in the energy and agriculture sectors, amounting to projected reductions of 85,267.68 kt CO_2 eq (56.4 per cent) and 7,367.65 kt CO_2 eq (43.2 per cent) between 1990 and 2030, respectively.

67. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same as for the WEM scenario. There are no significant differences between the WEM and WAM scenarios observed for projected GHG emissions. According to information provided by Czechia during the review, the differences in the energy sector between the WEM and WAM scenarios are due mainly to the additional PaMs that had already been adopted and implemented by the time of the submission of its NC7 and BR3, and to the increase in energy consumption that offsets the effect of planned PaMs such as voluntary commitments to energy savings. The small difference between the WEM and WAM scenarios in the agriculture sector is related to the planned adoption of the Nitrates Directive Fourth Action Plan, which has an implementation period of 2016–2035, and the Action Plan for Development of Organic Farming (implementation period 2016–2020).

68. Czechia presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 9.

Table 9
Summary of greenhouse gas emission projections for Czechia presented by gas

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
	1990	*2020*		*2030*		*1990–2020*		*1990–2030*	
Gas		*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
CO_2	161 650	100 256	99 938	88 501	88 169	–38.0	–38.2	–45.3	–45.5
CH_4	23 451	13 258	13 258	12 289	12 013	–43.5	–43.5	–47.6	–48.8
N_2O	10 643	6 539	6 496	7 063	6 659	–38.6	–39.0	–33.6	–37.4
HFCs	NO	2 334	2 334	858	858	NA	NA	NA	NA
PFCs	NO	4	4	4	4	NA	NA	NA	NA
SF_6	84	106	106	104	104	25.5	25.5	24.0	24.0
NF_3	NO	3	3	3	3	NA	NA	NA	NA
Total GHG emissions without LULUCF	**195 827**	**122 498**	**122 137**	**108 821**	**107 810**	**–37.4**	**–37.6**	**–44.4**	**–44.9**

Source: GHG emission data: Czechia's 2017 annual inventory submission, version 4.

69. For 2020, under the WEM scenario, the most significant emission reductions are projected for CO_2, CH_4 and N_2O at 61,393.99 kt CO_2 eq (38.0 per cent), 10,192.83 kt CO_2 eq (43.5 per cent) and 4,104.02 kt CO_2 eq (38.6 per cent) between 1990 and 2020, respectively. The reduction of CO_2 emissions is due to the restructuring of the economy that took place after 1990 and the economic recession after the global financial crisis in 2008, but also because of the PaMs adopted and implemented, such as the increase in the use of renewable energy sources in energy production and the increase in energy efficiency. The reduction in the use of fertilizers and the decrease in the cattle and pig populations in the agriculture sector has also resulted in the reduction of emissions of N_2O, CH_4 and CO_2.

70. For 2030, under the WEM scenario, the most significant emission reductions are projected for CO_2, CH_4 and N_2O at 73,148.80 kt CO_2 eq (45.3 per cent), 11,162.17 kt CO_2 eq (47.6 per cent) and 3,579.87 kt CO_2 eq (33.6 per cent) between 1990 and 2030, respectively. In its NC7 Czechia reported that an increase in emissions from the agriculture sector is expected (by 17.3 per cent between 2005 and 2030) and that implemented and additional PaMs will not be sufficient to offset the increase in emissions from the sector.

71. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same. A significantly higher decrease in N_2O emissions is expected under the WAM scenario compared with the WEM scenario, which could be explained by the reduction of N_2O emissions from the agriculture sector due to the adoption of the Nitrates Directive Fourth Action Plan.

72. The ERT noted that the difference in the GHG emission projections between the WEM and WAM scenarios reported in the BR2 (2.4 per cent in 2030) was larger than the difference reported in the NC7 and BR3 (0.9 per cent in 2030). During the review, Czechia explained that a significant number of planned PaMs that were included in the WAM scenario in its BR2 had since been adopted or implemented and were therefore included in the WEM scenario for its NC7 and BR3.

(d) Assessment of adherence to the reporting guidelines

73. The ERT assessed the information reported in the BR3 of Czechia and identified issues relating to transparency, completeness and adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 10.

Table 10
Findings on greenhouse gas emission projections reported in the third biennial report of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 28 Issue type: completeness Assessment: encouragement	Czechia reported projections of GHG emissions under the WEM and WAM scenarios. However, the ERT noted that GHG emissions under the 'without measures' scenario were not provided. The ERT reiterates its encouragement of Czechia to estimate and report GHG emission projections also under a 'without measures' scenario in its next BR.
2	Reporting requirement[a] specified in paragraph 29 Issue type: transparency Assessment: recommendation	The ERT noted that Czechia did not provide information in its BR3 on whether the PaMs included in each projection scenario were planned, adopted or implemented. During the review, the Party provided detailed information on each specific PaM, including the projection scenarios where each PaM was considered. The ERT welcomes the additional information provided by the Party and reiterates the recommendation made in the previous review report that Czechia provide in its next BR information on which specific PaMs (planned, adopted, implemented) are included in each of the projection scenarios.
3	Reporting requirement[a] specified in paragraph 38 Issue type: completeness Assessment: encouragement	Czechia provided graphs illustrating its projections for the agriculture, LULUCF and waste sectors as well as total projected GHG emissions. Graphs illustrating the projected GHG emissions from the energy and IPPU sectors were not included in the BR3. The ERT encourages Czechia to provide in its next BR diagrams illustrating projected GHG emissions for all inventory sectors.
4	Reporting requirement[a] specified in paragraph 43 Issue type: completeness Assessment: encouragement	Czechia identified in its BR3 the models used for projecting GHG emissions and removals (e.g. COPERT, MESSAGE, EFISCEN). However, the ERT noted that, except for the MESSAGE model, only the model names were provided. Czechia did not provide information for each model on type, original purpose, any modifications performed for climate change purposes, or strengths and weaknesses. During the review, Czechia provided additional descriptive information on the models used for projecting GHG emissions. The ERT encourages Czechia to provide in its next BR brief information on the models used to project GHG emissions and removals, including for each model the coverage and type, original purpose, any modifications performed for climate change purposes, and strengths and weaknesses, to facilitate a basic understanding of the models.
5	Reporting requirement[a] specified in paragraph 44 Issue type: completeness Assessment: encouragement	Czechia identified the models used for projecting GHG emissions (e.g. COPERT, MESSAGE, EFISCEN). However, the ERT noted that, except for the MESSAGE model, only the model names were provided. Czechia did not provide in its BR3 references to more detailed information on the models used. During the review, Czechia provided further details on the models used, including references for the MESSAGE (via a link to the model's web page www.iiasa.ac.at/web/home/research/researchPrograms/Energy/MESSAGE.en.html) and EFISCEN models. No references were provided by the Party for the COPERT model. The ERT encourages the Party to include in its next BR references to more detailed information on the models used for projecting GHG emissions and removals.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
6	Reporting requirement[a] specified in paragraph 45 Issue type: transparency Assessment: encouragement	Czechia stated in its BR3 that the methodology used in the preparation of the emission projections is in line with the methodology used for the compilation of its third, fourth, fifth and sixth NCs. However, the ERT noted that the Party has changed the model used for projecting GHG emissions from fuel combustion from the EFON/ENV model to the MESSAGE model. The ERT encourages the Party to provide in its next BR information on any changes in the models used to prepare the GHG projections, including the main differences between the models regarding assumptions, methods and results.
7	Reporting requirement[b] specified in paragraph 12 Issue type: transparency Assessment: encouragement	Czechia stated in its BR3 that the methodology used in the preparation of the emission projections is in line with the methodology used for the compilation of its third, fourth, fifth and sixth NCs. However, the ERT noted that the Party has changed the model used for projecting GHG emissions from fuel combustion from the EFON/ENV model to the MESSAGE model. The ERT encourages the Party to provide in its next BR information on any changes in the models or methodologies used to prepare the GHG projections and to provide supporting documentation.

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs and BRs.

[a] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs.

[b] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs.

D. Provision of financial, technological and capacity-building support to developing country Parties

74. Czechia is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, Czechia provided information in the BR3 on its provision of support to developing country Parties. The ERT commends Czechia for reporting this information and suggests that it continue to do so in future BRs.

75. Czechia has been providing climate-specific support to developing countries since 2010. The main means through which climate financing has been delivered to developing countries are technology transfer and the Development Cooperation Strategy of the Czech Republic 2010–2017. The support has been identified using a methodology provided by the Development Assistance Committee of the Organisation for Economic Co-operation and Development. The strategy has two main delivery channels: bilateral development cooperation and multilateral development cooperation. Regarding bilateral development cooperation, priorities are focused on countries that Czechia already has cooperation programmes with, namely Afghanistan, Bosnia and Herzegovina, Ethiopia, Mongolia and the Republic of Moldova, and the 'project countries' Cambodia, Georgia, Serbia and the State of Palestine.

76. The Party's total contribution of climate-specific financial support in 2016 amounted to USD 7,549,156, distributed, by funding type, as USD 2,779,781 through multilateral channels and USD 4,769,375 through bilateral, regional and other channels covering mitigation, adaptation, cross-cutting and other activities. Tables 11 and 12 summarize information on financial support by Czechia.

Table 11
Summary of information on provision of financial support by Czechia in 2015–2016
(Millions of United States dollars)

Allocation channel of public financial support	*Year of disbursement*	
	2015	*2016*
Official development assistance[a]	223.10	265.01
Climate-specific contributions through multilateral channels, including:		
Global Environment Facility	0.39	0.39
Green Climate Fund	2.03	2.05
Financial institutions, including regional development banks	–	6.81
Other	0.64	0.64
Climate-specific contributions through bilateral, regional and other channels	6.02	5.28

[a] *Sources*: (1) Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/; (2) Czechia's BR3 CTF tables.

Table 12
Summary of information on channels of financial support used in 2015–2016 by Czechia
(Millions of United States dollars)

Allocation channel of public financial support	*Year of disbursement*				*Share (%)*	
	2015	*2016*	*Difference*	*Change (%)*	*2015*	*2016*
Support through bilateral and multilateral channels allocated for:						
Mitigation	3.27	1.77	–1.51	–46.0	36.1	11.7
Adaptation	2.74	3.06	0.32	11.7	30.2	20.2
Cross-cutting	3.05	10.33	7.28	238.3	33.7	68.1
Other	–	–	–	–	–	–
Total	**9.07**	**15.16**	**6.09**	**67.1**	**100.0**	**100.0**
Detailed information by type of channel						
Multilateral channels						
Mitigation	–	–	–	–	–	–
Adaptation	–	–	–	–	–	–
Cross-cutting	3.05	9.89	6.83	223.6	100.0	100.0
Other	–	–	–	–	–	–
Total	**3.05**	**9.89**	**6.83**	**223.6**	**100.0**	**100.0**
Bilateral channels						
Mitigation	3.27	1.77	–1.51	–46.0	54.4	33.5
Adaptation	2.74	3.06	0.32	11.7	45.6	58.0
Cross-cutting	–	0.45	–	–	–	8.5
Other	–	–	–	–	–	–
Total	**6.02**	**5.28**	**–0.74**	**–12.3**	**100.0**	**100.0**
Multilateral compared with bilateral channels						
Multilateral	3.05	9.89	6.83	223.6	33.7	65.2
Bilateral	6.02	5.28	–0.74	–12.3	66.3	34.8
Total	**9.07**	**15.16**	**6.09**	**67.1**	**100.0**	**100.0**

Source: CTF tables 7, 7(a) and 7(b) of the BR3 of Czechia.

III. Conclusions and recommendations

77. The ERT conducted a technical review of the information reported in the BR3 and CTF tables of Czechia in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; and progress made by Czechia in achieving its target.

78. Czechia's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 35.4 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 36.7 per cent below its 1990 level, in 2015. Emission decreases have been driven mainly by factors such as decreasing production, the restructuring of the economy in the early 1990s and the economic recession after 2008, as well as the implementation of PaMs to reduce GHG emissions, such as the introduction of low-carbon technologies and renewable energy sources, the modernization and reform of the industrial and energy sectors, and the improvement of agriculture and waste management practices.

79. Under the Convention Czechia committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO_2, CH_4, N_2O, HFCs, PFCs and SF_6, expressed using global warming potential values from the AR4. Emissions and removals from the LULUCF sector are not included. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms and new market mechanisms for compliance purposes up to an established limit and subject to a number of restrictions on the origin and the type of project. Companies can make use of such units to fulfil their requirements under the EU ETS.

80. Under the ESD Czechia has a target of limiting its emission growth to 9.0 per cent above the 2005 level by 2020. The 2013–2020 linear progression in Czechia's AEAs (its national emission target for non-ETS sectors) is 62,474.35 kt CO_2 eq in 2013 to 67,204.65 kt CO_2 eq in 2020.

81. Czechia's main policy frameworks relating to energy and climate change are the Climate Protection Policy of the Czech Republic, the State Energy Policy, the State Environmental Policy 2012–2020 and the National Emission Reduction Programme. The mitigation actions with the most significant mitigation impact are the EU ETS, the Integrated Prevention Act (which implements the IPPC directive) and the promotion of renewable energy sources and energy efficiency.

82. For 2015, Czechia reported in CTF table 4 total GHG emissions excluding LULUCF of 127,925.53 kt CO_2 eq. The Party reported that it has no plans to make use of the Kyoto Protocol mechanisms to meet its Kyoto Protocol target for the second commitment period. On the basis of the reported information, the ERT concludes that Czechia is making progress towards achieving its target.

83. The GHG emission projections provided by Czechia in its BR3 correspond to the WEM and WAM scenarios. Under these scenarios, emissions are projected to be 37.4 and 37.6 per cent below the 1990 level by 2020, respectively. On the basis of the reported information, the ERT concludes that Czechia expects to meet its 2020 target under the WEM and WAM scenarios. Furthermore, the projections of emissions under the ESD for 2020 are 7.8 and 8.3 per cent below the AEA for 2020 under the WEM and WAM scenario, respectively. On the basis of the information reported, the ERT concludes that Czechia expects to meet its target for non-ETS sectors.

84. The ERT noted that Czechia is making progress towards its emission reduction target by implementing mitigation actions that deliver sufficient emission reductions.

85. On the basis of the results of the projections for 2020 under the WEM and WAM scenarios, the ERT noted that Czechia may achieve or overachieve its emission reduction target by 2020.

86. In the course of the review, the ERT formulated the following recommendations for Czechia to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:[5] The Party could improve the transparency of its reporting by:

(a) Estimating and reporting the mitigation impacts of PaMs in the energy and agriculture sectors, or, where applicable, explaining why such mitigation impacts are not possible to estimate (see table 5);

(b) Providing consistent information between the BR and CTF table 3 on the sectors under which each mitigation action is considered, and, if mitigation actions under the LULUCF sector are included, clearly indicating, for example in a footnote to CTF table 3, that mitigation actions reported under the LULUCF sector do not contribute to achieving its economy-wide emission reduction target (see table 5);

(c) Providing information on which specific PaMs (planned, adopted, implemented) are included in each of the projections scenarios (see table 10).

[5] The recommendations are given in full in the relevant chapters of this report.

Annex

Documents and information used during the review

A. Reference documents

2017 GHG inventory submission of Czechia. Available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/10116.php.

BR3 of Czechia. Available at http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/17589243_czech_republic-nc7-br3-1-nc7_br3_cze.pdf.

BR3 CTF tables of Czechia. Available at http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/1930245_czech_republic-br3-1-cze_2018_v1.0.xlsx.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/1999/7. Available at http://unfccc.int/resource/docs/cop5/07.pdf.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Annex to decision 15/CMP.1. Available at http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Annex III to decision 3/CMP.11. Available at http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf.

"Guidelines for review under Article 8 of the Kyoto Protocol". Annex to decision 22/CMP.1. Available at http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf.

NC7 of Czechia. Available at http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/17589243_czech_republic-nc7-br3-1-nc7_br3_cze.pdf.

Report on the individual review of the annual submission of Czechia submitted in 2016. FCCC/ARR/2016/CZE. Available at http://unfccc.int/resource/docs/2017/arr/cze.pdf.

Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Czechia. FCCC/IRR/2016/CZE. Available at http://unfccc.int/resource/docs/2017/irr/cze.pdf.

Report of the technical review of the second biennial report of the Czech Republic. FCCC/TRR.2/CZE. Available at http://unfccc.int/resource/docs/2016/trr/cze.pdf.

Report on the technical review of the sixth national communication of the Czech Republic. FCCC/IDR.6/CZE. Available at http://unfccc.int/resource/docs/2014/idr/cze06.pdf.

Revisions to the guidelines for review under Article 8 of the Kyoto Protocol. Annex I to decision 4/CMP.11. Available at http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf.

"UNFCCC biennial reporting guidelines for developed country Parties". Annex I to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Michal Danhelka (Ministry of Environment of Czechia), including additional material. The following documents[1] were provided by Czechia:

Ministry of the Environment of the Czech Republic. 2016. *The State Programme of the Environmental Education and Eco-counselling of the Czech Republic for 2016–2025.*

Ministry of the Environment of the Czech Republic. 2016. *Environmental Education in the Czech Republic.*

Ministry of the Environment of the Czech Republic and Czech Environmental Information Agency. 2016. *Report on the Environment of the Czech Republic*. Available at: http://www.cenia.cz and http://www.mzp.cz.

Ministry of the Environment of the Czech Republic and Czech Hydrometeorological Institute. 2015. *Report on a National System for Policies and Measures and Projections under Article 12 of the Regulation (EU) No 525/2013 and Article 20 of Implementing Regulation (EU) No 749/2017.*

[1] Reproduced as received from the Party.