



COMPLIANCE COMMITTEE

**CC/ERT/2019/26
5 September 2019**

**Report of the technical review of the seventh national communication
of Slovenia**

Note by the secretariat

The report of the technical review of the seventh national communication of Slovenia was published on 21 September 2018. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decisions 4/CMP.4 and 8/CMP.9), the report is considered received by the secretariat on the same date. This report, FCCC/IDR.7/SVN, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.



United Nations

FCCC/IDR.7/SVN



Framework Convention on
Climate Change

Distr.: General
21 September 2018

English only

Report on the technical review of the seventh national communication of Slovenia

Parties included in Annex I to the Convention were requested by decision 9/CP.16 to submit their seventh national communication to the secretariat by 1 January 2018. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the seventh national communication and relevant supplementary information under the Kyoto Protocol of Slovenia, 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” and the “Guidelines for review under Article 8 of the Kyoto Protocol”.

GE.18-15712(E)



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Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
BR	biennial report
CHP	combined heat and power
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
GCOS	Global Climate Observing System
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ICAO	International Civil Aviation Organization
IE	included elsewhere
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NE	not estimated
NF ₃	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
non-ETS sectors	sectors not covered by the European Union Emissions Trading System
N ₂ O	nitrous oxide
OP GHG-2020	Operational Programme for Reducing Greenhouse Gas Emissions until 2020 with a View to 2030
PaMs	policies and measures
PFC	perfluorocarbon
RES	renewable energy sources
reporting guidelines for supplementary information	“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol, Part II: Reporting of supplementary information under Article 7, paragraph 2”
SEA	Slovenian Environment Agency
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’
WMO	World Meteorological Organization
WOM	‘without measures’

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the NC7 of Slovenia. The review was coordinated 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 V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention” (annex to decision 13/CP.20), and the “Guidelines for review under Article 8 of the Kyoto Protocol” (annex to decision 22/CMP.1 and annex I to decision 4/CMP.11).¹

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

3. The review was conducted from 21 to 26 May 2018 in Bonn by the following team of nominated experts from the UNFCCC roster of experts: Ms. Amrita Narayan Achanta (India), Ms. Damla Dogan (Turkey), Mr. Christopher John Dore (United Kingdom of Great Britain and Northern Ireland), Mr. Sangay Dorji (Bhutan), Mr. A. Ricardo J. Esparta (Brazil), Mr. Sandro Federici (San Marino), Mr. Ross Alexander Hunter (United Kingdom), Mr. Naoki Matsuo (Japan), Ms. Roisin Moriarty (Ireland), Mr. Rotislav Neveceral (Czechia), Ms. Agnieszka Maria Patoka-Janowska (Poland) and Ms. Verica Taseska Gjorgievska (the former Yugoslav Republic of Macedonia). Mr. Dorji, Mr. Federici, Mr. Matsuo and Ms. Patoka-Janowska were the lead reviewers. The review was coordinated by Ms. Sevdalina Todorova, Mr. Davor Vesligaj and Ms. Marion Vieweg (UNFCCC secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the NC7 of Slovenia in accordance with the UNFCCC reporting guidelines on NCs (decision 4/CP.5) and the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol (annex to decision 15/CMP.1 and annex III to decision 3/CMP.11).

1. Timeliness

5. The NC7 was submitted on 13 March 2018, after the deadline of 1 January 2018 mandated by decision 9/CP.16.

6. Slovenia informed the secretariat on 10 November 2017 and 7 February 2018 about its difficulties with making a timely submission in accordance with decisions 13/CP.20 and 22/CMP.1. The ERT noted with great concern the delay in the submission and recommended that Slovenia make its next submission on time. As the submission was not made within six weeks after the due date (by 15 February 2018), the delay was brought to the attention of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol and the Compliance Committee and made public.

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

7. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Slovenia in its NC7, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs.

¹ At the time of the publication of this report, the Party had submitted its instrument of acceptance of the Doha Amendment; however, the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

Table 1

Assessment of completeness and transparency of mandatory information reported by Slovenia in its seventh national communication, including supplementary information under the Kyoto Protocol

<i>Section of NC</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>	<i>Supplementary information under the Kyoto Protocol</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendations</i>
Executive summary	Complete	Transparent		National system	Complete	Transparent	
National circumstances	Mostly complete	Transparent	Issue 1 in table 4	National registry	Mostly complete	Transparent	Issue 1 in table 7
GHG inventory	Complete	Transparent		Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
PaMs	Complete	Transparent		PaMs in accordance with Article 2	Complete	Mostly transparent	Issue 8 in table 9
Projections and the total effect of PaMs	Mostly complete	Transparent	Issue 2 in table 13	Domestic and regional programmes and/or arrangements and procedures	Complete	Transparent	
Vulnerability assessment, climate change impacts and adaptation measures	Partially complete	Partially transparent	Issues 1 and 2 in table 16	Information under Article 10 ^a	NA	NA	NA
Financial resources and transfer of technology ^b	NA	NA	NA	Financial resources ^c	NA	NA	NA
Research and systematic observation	Partially complete	Mostly transparent	Issues 1–3 in table 17	Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	
Education, training and public awareness	Complete	Transparent					

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

^a The assessment refers to information provided by the Party on the provisions contained in Article 4, paragraphs 3, 5 and 7, of the Convention reported under Article 10 of the Kyoto Protocol, which is relevant to Annex II Parties only. Assessment of the information provided by the Party on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

^b Slovenia 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.

^c Slovenia is not an Annex II Party and is therefore not obliged to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

3. Summary of reviewed supplementary information under the Kyoto Protocol

8. The supplementary information under Article 7, paragraph 2, of the Kyoto Protocol is incorporated in different sections of the NC7, and the supplementary information under Article 7, paragraph 1, of the Kyoto Protocol is reported in the NIR of the 2018 annual submission. Table 2 provides references to where the information is reported. The technical assessment of the information reported under Article 7, paragraphs 1 and 2, of the Kyoto Protocol is contained in the relevant sections of this report.

Table 2

Overview of supplementary information under the Kyoto Protocol reported by Slovenia

<i>Supplementary information</i>	<i>Reference to section of the NC7</i>
National registry	3.4
National system	3.3
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	4.5
PaMs in accordance with Article 2	4.6
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	4.7
Information under Article 10	3.3, 4.6, 7.1, 6–9
Financial resources ^a	NA
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Reported in the NIR of the Party's 2018 annual submission

^a Reporting on financial resources under the Kyoto Protocol is relevant to Annex II Parties. As Slovenia is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

II. Technical review of the information reported in the seventh national communication, including the supplementary information under the Kyoto Protocol

A. Information on national circumstances and greenhouse gas emissions and removals

1. National circumstances relevant to greenhouse gas emissions and removals

(a) Technical assessment of the reported information

9. The national circumstances of Slovenia explain the relationship between its historic and future emission trends and the climate change policy agenda. The changing nature of those circumstances defines the factors that affect the climate policy development and implementation of the Convention. The NC7 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, trade, the services sector, agriculture, forestry, resource efficiency and wastewater. The Slovenian economy went through a variety of changes in the late 1990s caused by the transformation of its political and economic system, resulting in decreases in GDP and level of employment and increased inflation. The economy recovered thereafter, with an average GDP growth rate above 4 per cent from 1993 to 2008, when the global economic crisis led to reduced export and investment and thereby slowed economic growth. After modest GDP growth in 2010 and stagnation in 2011, Slovenia entered a period of negative growth. Since 2013 the economy has been recovering and growing steadily.

10. Economic growth, the revival of industrial production and ‘fuel tourism’ resulted in increased emissions in the 1990s. In the late 1990s emissions decreased due to the measures

put in place in neighbouring countries to reduce fuel tourism and because of the increased use of nuclear power. After Slovenia joined the EU in 2004, emissions from road transport increased substantially and they have outweighed the emission decreases brought about by PaMs introduced for stationary combustion, manufacturing industry, agriculture and waste. The reduction in emissions is also linked to the economic restructuring, with the share of the services sector increasing since 2000 and the shares of construction, industry and agriculture decreasing, but with signs of a change in the trend after 2009. Other contributing factors include the decreased energy intensity of primary and final energy consumption, the increased use of RES (accounting for 31 per cent of electricity production in 2015), decreased waste disposal (only 5 per cent of generated waste was disposed in 2015) and the increase in waste recovery. Emissions fell in 2009 because of the global economic crisis in 2008, but by 2015 and 2016 emissions from all sectors had increased slightly compared with in 2014 (overall by 1.2 and 6.3 per cent, respectively).

11. The ERT noted that during the period 1990–2016 Slovenia's population and GDP increased by 3.3 and 58.9 per cent, respectively, while GHG emissions per GDP unit and GHG emissions per capita decreased by 8.0 and 42.0 per cent, respectively. Between 2015 and 2016, GHG emissions (excluding LULUCF) per capita increased by 5.0 per cent and GHG emissions (excluding LULUCF) per GDP unit increased by 1.9 per cent. Table 3 illustrates the national circumstances of Slovenia by providing some indicators relevant to emissions and removals.

Table 3

Indicators relevant to greenhouse gas emissions and removals for Slovenia for the period 1990–2016

Indicator	Change (%)						
	1990	2000	2010	2015	2016	1990–2016	2015–2016
GDP per capita (thousands 2011 USD using purchasing power parity)	18.87	22.73	28.68	28.42	29.04	58.7	3.1
GHG emissions without LULUCF per capita (t CO ₂ eq)	9.32	9.59	9.60	8.08	8.17	–8.0	5.0
GHG emissions without LULUCF per GDP unit (kg CO ₂ eq per 2011 USD using purchasing power parity)	0.49	0.42	0.33	0.28	0.28	–42.0	1.9

Sources: (1) GHG emission data: Slovenia's 2018 GHG inventory submission, version 4; (2) population and GDP: World Bank.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

12. Slovenia requested flexibility in accordance with Article 4, paragraphs 6 and 10, of the Convention in relation to the base-year definition. In accordance with Article 4, paragraph 6, of the Convention and decision 9/CP.2, Slovenia, as a Party with an economy in transition, may use 1986 as its base year.

(b) Assessment of adherence to the reporting guidelines

13. The ERT assessed the information reported in the NC7 of Slovenia and identified issues relating to transparency, completeness and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 4.

Table 4

Findings on national circumstances relevant to greenhouse gas emissions and removals from the review of the seventh national communication of Slovenia

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 8 Issue type: completeness Assessment: recommendation	The ERT noted that chapter 2 of the NC7 did not include a description of how national circumstances affect emissions from industrial sources in Slovenia. During the review, the Party confirmed this omission and provided detailed information on factors and trends affecting its emissions from industrial sources. The ERT recommends that in the next NC Slovenia include the information provided to the ERT during the review on how national circumstances and changes therein affect GHG emissions over time, including those from industrial sources, with a view to enhancing the completeness of its reporting.
2	Reporting requirement specified in paragraph 8 Issue type: transparency Assessment: encouragement	The ERT noted that, in the NC7 (section 2.3), figure 3 (“Shares of individual categories of ground cover (%) of the total surface, 2005”) references 2005 data. The ERT considers that information to be outdated. During the review, Slovenia acknowledged this issue and explained that the system is being continuously updated and since 2016 it has been using a point sampling method on a 1 km by 1 km grid to detect land cover changes in the LULUCF sector. The ERT encourages Slovenia to improve the transparency of its reporting by including in its next NC up-to-date information on ground cover when describing its national circumstances and historical trends.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

2. Information on greenhouse gas emissions and removals

(a) Technical assessment of the reported information

14. Slovenia provided a summary of information on GHG emission trends for the period 1986–2015 in its NC7 that is consistent with the 2017 national GHG inventory submission. Summary tables, including trend tables for emissions (in kt CO₂ eq), are provided in the NC7. During the review, the ERT took note of the Party’s recently submitted 2018 annual submission, in which data on GHG emissions in 2016 were presented along with updated 1986–2015 data. To reflect the most recently reported data, Slovenia’s 2018 annual submission was used as the basis for the discussion in chapter II.A. A comparison with the inventory data provided in the Party’s NC7 and 2017 annual submission is presented in paragraph 20 below.

15. Total GHG emissions² excluding emissions and removals from LULUCF decreased by 4.9 per cent between 1990 and 2016, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 11.7 per cent over the same period. Table 5 illustrates the emission trends by sector and by gas for Slovenia.

² In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2018 annual submission, version 4.

Table 5

Greenhouse gas emissions by sector and by gas for Slovenia for the period 1990–2016

	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2015	2016	1990–2016	2015–2016	1990	2016
<i>Sector</i>									
1. Energy	14 645.26	15 244.45	16 320.02	13 397.99	14 241.84	–2.8	6.3	78.6	80.4
A1. Energy industries	6 374.89	5 594.44	6 339.70	4 561.54	4 935.22	–22.6	8.2	34.2	27.9
A2. Manufacturing industries and construction	3 149.88	2 275.68	1 916.08	1 591.12	1 592.03	–49.5	0.1	16.9	9.0
A3. Transport	2 727.85	3 807.98	5 254.71	5 362.35	5 734.29	110.2	6.9	14.6	32.4
A4. and A5. Other	1 883.20	3 095.85	2 289.61	1 513.95	1 584.70	–15.9	4.7	10.1	8.9
B. Fugitive emissions from fuels	509.44	470.50	519.92	369.02	395.61	–22.3	7.2	2.7	2.2
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	NO	NO	NO	NO
2. IPPU	1 375.65	1 150.02	1 000.82	1 135.61	1 132.71	–17.7	–0.3	7.4	6.4
3. Agriculture	1 933.07	1 881.42	1 722.99	1 754.29	1 777.08	–8.1	1.3	10.4	10.0
4. LULUCF	–4 209.76	–4 745.60	–5 317.40	–4 978.34	–4 989.79	18.5	0.2	NA	NA
5. Waste	673.45	799.00	620.83	572.04	565.93	–16.0	–1.1	3.6	3.2
6. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO
<i>Gas^a</i>									
CO ₂	15 074.43	15 430.09	16 352.63	13 599.14	14 399.79	–4.5	5.9	80.9	81.3
CH ₄	2 507.11	2 496.67	2 262.48	2 107.06	2 145.81	–14.4	1.8	13.5	12.1
N ₂ O	828.48	956.59	762.10	773.98	781.14	–5.7	0.9	4.4	4.4
HFCs	NO	46.78	259.83	346.51	353.60	NA	2.0	NA	2.0
PFCs	207.59	129.75	9.64	15.74	19.78	–90.5	25.7	1.1	0.1
SF ₆	9.83	15.01	17.99	17.49	17.44	77.4	–0.3	0.1	0.1
NF ₃	NO	NO	NO	NO	NO	NO	NO	NO	NO
Total GHG emissions without LULUCF	18 627.44	19 074.90	19 664.66	16 859.93	17 717.56	–4.9	5.1	100.0	100.0
Total GHG emissions with LULUCF	14 417.68	14 329.29	14 347.25	11 881.59	12 727.77	–11.7	7.1	NA	NA

Source: GHG emission data: Slovenia's 2018 annual submission, version 4.

^a Emissions by gas without LULUCF and without indirect CO₂.

16. The trend in the total emissions of Slovenia is driven mainly by the energy sector, which accounted for 80.4 per cent of emissions in 2016. Between 1990 and 2016, GHG emissions from the energy sector decreased by 2.8 per cent (403.43 kt CO₂ eq), owing mainly to the decrease in emissions from manufacturing industries and construction (by 49.5 per cent) and energy industries (by 22.6 per cent). The main reasons behind the decreasing trend are the global economic crisis in 2008, improved energy efficiency and increased use of RES. However, the downward trend was outweighed by the increasing trend in GHG emissions from transport, by 110.2 per cent, between 1990 and 2016, making it the category with the largest share of the sectoral emissions, accounting for 32.4 per cent (5,734.29 kt CO₂ eq) in 2016.

17. Between 1990 and 2016, GHG emissions from IPPU decreased by 17.7 per cent (242.94 kt CO₂ eq), owing mainly to lower production in the mineral and metal industries, emissions from which decreased by 37.8 and 60.5 per cent between 1990 and 2016, respectively. Meanwhile, HFC emissions, which amounted to zero in 1990, increased to

353,60 kt CO₂ eq in 2016, owing mainly to their increased use for refrigeration and air conditioning.

18. Between 1990 and 2016, GHG emissions from the agriculture sector decreased by 8.1 per cent (156.00 kt CO₂ eq), owing mainly to the decrease in the number of animals and improved manure management (a decrease of 27.7 per cent for the manure management category). The LULUCF sector was a net sink of 4,989.79 CO₂ eq in Slovenia in 2016; net GHG removals have increased by 18.5 per cent (780.03 kt CO₂ eq) since 1990. The trend was mainly driven by the increase in timber growing stock in existing forests. Between 1990 and 2016, GHG emissions from the waste sector decreased by 16.0 per cent (107.52 kt CO₂ eq), owing mainly to recovery of gas in wastewater treatment plants and a decrease in industrial production. Emissions from wastewater treatment and discharge decreased by 26.9 per cent between 1990 and 2016.

19. CO₂ emissions, which accounted for 81.3 per cent of the total emissions in 2016, have decreased by 4.5 per cent since 1990. For the same period, CH₄ emissions, which accounted for 12.1 per cent of total emissions in 2016, decreased by 14.4 per cent compared with the 1990 level. N₂O emissions accounted for 4.4 per cent of the total GHG emissions in 2016 and have decreased by 5.7 per cent since 1990, although the share in the total emissions remained the same. F-gases, including PFCs, HFCs and SF₆, accounted for 2.2 per cent of the total emissions in 2016. HFC emissions have increased by 900.0 per cent since 1995. SF₆ emissions increased by 77.4 per cent, while PFCs decreased by 90.5 per cent between 1990 and 2016.

20. According to the Party's 2017 annual inventory submission, total GHG emissions in 2015 amounted to 16,831.16 kt CO₂ eq excluding LULUCF and 11,202.48 kt CO₂ eq including LULUCF. In the recently submitted 2018 annual submission, the reported total GHG emissions in 2015 amounted to 16,859.93 kt CO₂ eq excluding LULUCF and 11,881.59 kt CO₂ eq including LULUCF. Therefore, the total reported GHG emissions without LULUCF and with LULUCF have increased by 0.2 and 6.1 per cent, respectively, compared with the estimations in the previous submission due to the recalculation of emissions and removals. The reasons for recalculations were explained in the NIR and are mainly linked to the update of EFs for agricultural soils, which largely affected the LULUCF sector.

(b) Assessment of adherence to the reporting guidelines

21. The ERT assessed the information reported in the NC7 of Slovenia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 6.

Table 6

Findings on greenhouse gas inventory information from the review of the seventh national communication of Slovenia

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	<p>Reporting requirement specified in paragraph 12</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>	<p>The ERT noted that the information in section 3.2.2 of the NC7 does not include description of the factors underlying emission trends for the agriculture sector.</p> <p>During the review, the ERT questioned the trend in emissions from the agriculture sector, which decreased by 9.3 per cent between 1990 and 2015 according to the 2017 annual submission. Slovenia explained that the reason behind the decreasing trend is the decreasing CH₄ emissions from manure management due to the decrease in the number of swine and improved manure management on farms.</p> <p>The ERT encourages Slovenia to improve the completeness of the reporting in its next NC by including a description of the factors underlying emission trends in the agriculture sector, including the information provided during the review.</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
2	Reporting requirement specified in paragraph 12 Issue type: transparency Assessment: encouragement	The NC7 (section 3.2.2) presents a description and interpretation of emission trends by source. The ERT noted that removals from the LULUCF sector increased by 74.6 per cent between 1990 and 2007 and then decreased by 27.7 per cent between 2007 and 2016. However, no explanation was included in the NC7 in this regard. During the review, Slovenia provided further information on the factors underlying the decreasing trend in removals after 2007, namely that it is mostly due to the increased forest harvesting rate since 2007, when the National Forest Programme came into force, which allows for cutting down up to 75 per cent of the increment. The ERT encourages Slovenia to improve the transparency of the reporting in its next NC by providing a description of the factors underlying emission trends for the LULUCF sector (e.g. using the information provided during this review).
3	Reporting requirement specified in paragraph 12 Issue type: transparency Assessment: encouragement	The ERT noted that chapter 3.2.1 of the NC7 did not include comments on the main features of the emission trends by gas and hence no interpretation of the resulting trends. Furthermore, the ERT noted that the information presented on emission trends by gas in the NC6 and BR1 was comprehensive and sufficiently transparent. During the review, Slovenia provided a detailed assessment and interpretation of the main features of the emission trends by gas. The ERT encourages that in its next NC Slovenia include information on how national circumstances and changes therein affect its GHG emissions and removals over time, together with a description and interpretation of its emission trends by gas, as provided to the ERT during the review, with a view to enhancing the transparency of its reporting.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

3. National system for the estimation of anthropogenic emissions by sources and removals by sinks

(a) Technical assessment of the reported information

22. Slovenia provided in the NC7 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1. The description includes all of the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The NC7 also contains a reference to the description of the national system provided in the report mandated by decision 2/CMP.8, submitted in 2017.³ The ERT took note of the issues raised in the report on the individual review of the annual submission of Slovenia submitted in 2016, including those related to quality assurance and quality control.⁴

(b) Assessment of adherence to the reporting guidelines

23. The ERT assessed the information reported in the NC7 of Slovenia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

³ Slovenia's report to facilitate the calculation of the assigned amount pursuant to Article 3, paragraphs 7 and 8, of the Kyoto Protocol for the second commitment period (2013–2020), available at http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/second_commitment_period_2013-2020/items/9499.php.

⁴ See document FCCC/ARR/2016/SVN, table 5.

4. National registry

(a) Technical assessment of the reported information

24. In the NC7 Slovenia provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the changes to the national registry reflected in the report on the individual review of the 2016 annual submission of Slovenia as well as the information provided in the 2017 and 2018 annual submissions of the Party.

(b) Assessment of adherence to the reporting guidelines

25. The ERT assessed the information reported in the NC7 of Slovenia and identified an issue relating to completeness. The finding is described in table 7.

Table 7

Findings on the national registry from the review of the seventh national communication of Slovenia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
1	<p>Reporting requirement specified in paragraph 32</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p>	<p>The ERT noted that the information on the national registry in the NC7 (in sections 3.4 and 4.7.3) did not include a list of the information that is publicly accessible by means of the user interface to the national registry (although weblinks to the publicly available information were provided in the NC7), nor a description of measures taken to safeguard, maintain and recover data in the event of a disaster.</p> <p>During the review, in response to questions from the ERT, Slovenia provided information on the EU's procedures for registry disaster recovery, noting that some information is confidential.</p> <p>The ERT recommends that in its next NC, to improve the completeness of the reporting, Slovenia provide information on measures taken to safeguard, maintain and recover data in the event of a disaster, and include a list of information that is publicly accessible.</p>

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the reporting guidelines for supplementary information. The reporting on the requirements not included in this table is considered to be complete and transparent.

B. Information on policies and measures and institutional arrangements

1. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

(a) Technical assessment of the reported information

26. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Slovenia committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level. The majority of Slovenia's strategies are anchored in or linked to EU policy and the EU 2020 climate and energy package. The national targets within the framework of the EU joint commitment are included in annex II to European Commission decision 2013/162/EU as adjusted by Commission implementing decision 2013/634/EU.

27. Slovenia has introduced OP GHG-2020, a plan for implementing measures to achieve its legally binding objective to reduce GHG emissions by 2020 under the EU energy and climate package in accordance with decision 406/2009/EC. Sectoral and development programmes defining the emission reduction activities are presented in detail therein and relate to energy efficiency, RES, municipal waste management, implementation of European cohesion policy and rural development. National programmes for reducing

GHG emissions are detailed in section 4.1.3 of the NC7, while local programmes for reducing GHG emissions are detailed in section 4.1.4.

28. Implementation of the Kyoto Protocol by Slovenia is underpinned by its Environmental Protection Act, which provides the legal basis for all other legislation in the area of environmental protection that indirectly or directly influences GHG emissions, such as in the areas of waste, environmental certificates, comprehensive assessment of environmental influences, ecolabels, environmental management of organizations, and economic and financial environmental instruments (e.g. the environmental tax on environmental pollution, GHG emissions allowance trading). The overall responsibility for climate change policymaking lies with the Ministry of Environment and Spatial Planning, and a number of national institutions are involved in the implementation of the policy. For example, the Environmental Inspection Service is responsible for supervising the implementation of the Environmental Protection Act. Monitoring the implementation of climate-related policies is conducted under OP GHG-2020 and coordinated by the Ministry of Environment and Spatial Planning.

29. Slovenia has legislative arrangements and administrative procedures in place to make information publicly accessible, such as the Environmental Protection Act and the decree on the provision and reuse of public information, which provides for the participation of the public in the preparation of all programmes regarding environmental protection.

30. Slovenia has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources. In 1997 the Party introduced the National Forest Programme, which defines four priority areas: climate change, nature and biodiversity, the environment and health. In 2007 Slovenia adopted the Resolution on the National Forest Programme, "Forests for the Future", as the successor to the National Forest Programme. One of the fundamental objectives of the resolution is the sustainable development of forest as an ecosystem in terms of its biodiversity and all its ecological, economic and social functions.

(b) Assessment of adherence to the reporting guidelines

31. The ERT assessed the information reported in the NC7 of Slovenia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

2. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

(a) Technical assessment of the reported information

32. Slovenia 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. The Party 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.

33. Slovenia provided information on a set of PaMs including those updated or new since the submission of its NC6. Slovenia also provided information on 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. The Party's system for reporting and monitoring the achievement of its quantitative GHG emission reduction targets has not changed since its BR2. Improvement of the system is planned using the results of the LIFE ClimatePath2050 programme, which started in 2017 and will be updated and extended to meet EU 2030 policy needs.

34. Overall responsibility for climate change policymaking in Slovenia lies with the Ministry of Environment and Spatial Planning. Implementation of climate policy is monitored under OP GHG-2020. So far, two reports on the implementation of OP GHG-2020 have been prepared and adopted by the Government of Slovenia, which consisted of two parts: an analysis of indicators for monitoring the impact of measures and an analysis of the implementation of the measures per responsible institution.

35. Slovenia gave priority to implementing the PaMs that make the most significant contribution to its emission reduction efforts. The Party provided information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals in accordance with the objective of the Convention. Slovenia also reported on how it periodically updates its PaMs to reduce greater levels of emissions and on the PaMs that have been discontinued since the previous submission.

36. In Slovenia, most programmes and measures are implemented at the national level because there is no regional level of governance. Examples of national-level cross-sectoral PaMs include the environmental tax on CO₂ emissions, implementing best available techniques, taxes and charges, and developing the green economy. The environmental tax in place since 1997 relates to the use of fossil fuels and currently amounts to EUR 17.3/t CO₂. Best available techniques are being implemented in line with EU directive 2010/75/EU across all energy and industrial sectors and ensure compliance with demanding environmental standards related to air and water pollution. The taxation system provides for a stable source of fiscal revenue, while energy taxation enables the Government to influence the final price of energy products. Development of the green economy derives from OP GHG-2020 and resulted in the adoption of the Framework Programme for the Transition to Green Economy in October 2015, aimed at establishing an active and permanent dialogue between key economic players and accelerating the transfer of knowledge for a faster transition to green entrepreneurial practices and the development of green jobs and products.

37. Some PaMs in Slovenia are deferred to the local level. Municipalities have several obligations related to planning measures for GHG emission reduction and play an important role in the preparation of relevant projects. For example, a 'local energy concept' is mandatory for all municipalities under the Energy Act, which forms the basis for planning the use of RES at the local community level and defines relevant objectives and measures. Also, all Slovenian city municipalities have environmental protection programmes in place, which include, among other things, an objective for GHG emission reduction. Implementation of measures under the programmes is promoted by State subsidies from a dedicated fund (the Climate Change Fund). Additionally, on a voluntary basis, municipalities participate in other initiatives, such as the Covenant of Mayors Committed to Local Sustainable Energy⁵ initiative, which sets a specific GHG emission reduction target (20 per cent) for participating municipalities. In 2017, 29 Slovenian municipalities covering 34 per cent of Slovenia's inhabitants participated in the initiative.

38. Under the Convention Slovenia 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.

39. 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 CO₂ 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.

⁵ See <https://e3p.jrc.ec.europa.eu/node/188>.

40. 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), which 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 N₂O emissions from chemical industries, PFC emissions from aluminium production and CO₂ emissions from industrial processes (since 2013).

41. In Slovenia, operators covered by the EU ETS are distributed across the following IPCC sectors: energy industries (most operators), manufacturing industries and construction (operators responsible for 63 per cent of GHG emissions from this sector) and industrial processes (covering 54 per cent of GHG emissions from this sector).

42. 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. Under the ESD, Slovenia has a target of limiting its emission growth to 4 per cent above the 2005 level by 2020.

43. Slovenia highlighted the EU-wide mitigation actions that are under development, such as the revision of the EU ETS in order to implement the EU 2030 GHG reduction target. By 2030 the EU ETS is to deliver an overall GHG emission reduction of 43 per cent compared with the 2005 level.

44. Slovenia introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported include OP GHG-2020, defining indicative sectoral objectives for reducing GHG emissions not included in the EU ETS, and some sector-specific policies such as the Energy Efficiency Action Plan for 2014–2020 (updated in 2017), the National Renewable Energy Action Plan (2010–2020), the Transport Development Strategy of the Republic of Slovenia, the Waste Management Plan and the Waste Prevention Programme of the Republic of Slovenia. Reported measures stemming from these policies cover all sectors. The combined mitigation effect of increasing the efficiency of vehicles, promoting energy-efficient driving and promoting the use of low-emission fuels was reported as one figure and is the most significant over the longer term (494 kt CO₂ eq by 2020 and 1,494 kt CO₂ eq by 2030), while the EU ETS has the highest reported mitigation impact for 2020 (515 kt CO₂ eq by 2020 and 859 kt CO₂ eq by 2030). Other policies that are expected to deliver significant emission reductions are the promotion of energy efficiency and use of RES in buildings, the collection of landfill gas, the reduction of landfilled biodegradable waste and the reduction of F-gas emissions from stationary equipment. Table 8 provides a summary of the reported information on the PaMs of Slovenia.

45. Slovenia did not highlight the domestic mitigation actions that are under development and focus on 2020 because the Party is on track to meeting its 2020 GHG emission reduction target and so has not planned any additional actions. However, Slovenia has started to prepare programme documents concerning 2030. At the end of 2017 Slovenia adopted the Slovenian Development Strategy 2030, which defines objectives related to a low-carbon circular economy and sustainable natural resources management. Slovenia's 'energy concept', which identifies directions for the development of energy policy by 2030 and 2050 was adopted by the Government in March 2018 and is awaiting parliamentary approval. Its overarching objective is to ensure sustainable energy use and it will therefore deal with three aspects of sustainability: climate variability, reliability of the energy supply, and power supply competitiveness. No information is available yet regarding the mitigation effects of these PaMs.

Table 8

Summary of information on policies and measures reported by Slovenia

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact by 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact by 2030 (kt CO₂ eq)</i>
Policy framework and cross-sectoral measures	EU ETS	515	859
	OP GHG-2020	NE	NE
	Environmental tax on CO ₂ emissions	IE	IE
	Taxes and charges	IE	IE
	Green economic growth	NE	NE
Energy	Modernization of thermal power plants	NE	NE
Transport	Promotion of public passenger transport	66	118
	Sustainable freight transport	42	97
	Increase in the efficiency of vehicles, promotion of energy-efficient driving and promotion of the use of low-emission fuels	494	1 494
Renewable energy and energy efficiency	Promotion of energy efficiency and use of RES in households	IE	IE
	Promotion of energy efficiency and use of RES in buildings in general	159	380
	Promotion of efficient energy use in industry	18	127
	Promotion of district heat generation from RES and CHP with high efficiency	NE	NE
IPPU	Reduction of F-gas emissions from stationary equipment	61	258
	Reduction of F-gas emissions from mobile air conditioning systems	37	94
Agriculture	Increasing efficiency in animal production	2	47
	Rational use of fertilizer	20	20
LULUCF	Sustainable forest management	NE	NE
Waste	Reduction of landfilled biodegradable waste	74	168
	Collection of landfill gas	105	75

Note: The estimates of mitigation impact are estimates of emissions of CO₂ or CO₂ eq avoided in a given year as a result of the implementation of mitigation actions.

46. Slovenia has in place a system and institutional arrangements to implement, assess and monitor the progress of mitigation actions and their impacts via OP GHG-2020. However, the ERT noted that estimates of mitigation effect were reported in the NC7 for only some PaMs and that these differ from those reported in the NC6.

47. Slovenia did not report the cost of implementation of individual PaMs. However, the NC7 includes information that shows that, in comparison with previously reported, progress has been achieved regarding financing measures. This is due to the adoption of the Operational Programme for Implementing European Cohesion Policy for 2014–2020 and the Rural Development Programme of the Republic of Slovenia for the period 2014–2020. In addition, since 2016 revenues from the EU ETS have been fully deposited into the Climate Change Fund, which has supported various training, education and awareness-raising projects in the area.

48. The ERT noted that in the NC7 Slovenia reported on a list of PaMs across all sectors implemented to mitigate climate change. The following sections provide a summary of the most significant PaMs per sector. The ERT commends Slovenia for the transparency of its reporting on PaMs.

(b) Policies and measures in the energy sector

49. **Energy supply.** Slovenia has adopted and is implementing a range of PaMs in the energy sector (which contributed 80.4 per cent of the country's GHG emissions in 2016). The EU ETS, implemented through the Slovenian Environmental Protection Act, is considered to facilitate GHG emission reductions in energy supply, among other things, especially for large combustion plants. In Slovenia about 70 plants are covered by the EU ETS for the period 2013–2020, which are responsible for about 36.3 per cent of the total national GHG emissions. Slovenia's emissions covered by the EU ETS decreased by 26 per cent in the 2005–2016 period.

50. Modernization of thermal power plants constitutes another key area for emission reductions linked to the new requirements introduced by EU legislation (directive 2010/75/EU on industrial emissions). In recent years, several thermal power units have been closed or replaced by new ones, such as the Sostanj thermal plant. In addition, some power plants are in transition to using cleaner fuels: the Ljubljana heat and power plant invested in wood biomass co-incineration and is also planning a transition to natural gas.

51. **Renewable energy sources.** Development of RES in Slovenia is supported by a dedicated scheme introduced in 2002 to enable the growth of electricity produced from such sources. The Energy Act, amended in 2014, provides the legal basis for this measure.⁶ Additionally, a decree on self-supply of electricity from RES entered into force in 2016 and 135 such devices were installed during the year, mainly solar power plants and five hydropower plants.

52. As a result of the above-mentioned scheme, the share of RES in electricity generation has been growing in Slovenia, and in 2016 RES accounted for 17 per cent of primary fuel consumption and 31 per cent of the electricity generation in the country. In 2015 the RES support scheme included installations with a total capacity of 341 MW electric power, generating 639 GWh electricity (1 per cent increase compared with in 2014). In 2016 the electrical power of the installations amounted to 343 MW, generating 678.5 GWh electricity (an increase of 6.2 per cent compared with in 2015). Solar power plants constitute the main type of renewable energy technology applied in Slovenia and their number grew significantly in the period 2011–2013. RES installations under the support scheme contributed to the reduction of GHG emissions by 415.5 kt CO₂ eq in 2015 and by 443.1 kt CO₂ eq in 2016.

53. Since 2016 the support scheme has been limited to installations at lower thresholds of nominal capacity (i.e. 10 MW for RES generation units, with the exception of wind power where the threshold of 50 MW applies). The modified scheme provides for a fixed-price purchase only from installations of up to 500 kW, and bigger installations may only be granted operational support. In addition, installations must be selected in an open public call organized by the Energy Agency. The duration of the provision of support for electricity generated from RES is limited to 15 years.

54. **Energy efficiency.** Slovenia promotes energy efficiency by supporting highly efficient cogeneration of electricity and heat (CHP) and efficient energy use in industry. The legal basis for this measure is the Energy Act. A promotion scheme for electricity production through CHP was introduced by Slovenia in 2002, along with the RES support scheme, and it has gone through several stages and amendments. The main changes introduced to the scheme in recent years relate to the threshold for participation in the scheme, which is now 20 MW for CHP generation units, and the length of the support

⁶ Official Gazette of the Republic of Slovenia, Nos. 17/2014 and 81/2015; and Energy Act, Official Gazette of the Republic of Slovenia, Nos. 27/07–Official Consolidated Text, 70/08, 22/10, 37/11–Constitutional Court Decision, 10/12 and 94/12–ZDoh-2L.

period, which is 10 years. The rules for joining the scheme were also modified: now participation in an open public call organized by the Energy Agency is required.

55. The installed power of CHP systems has been growing in Slovenia: in 2016 the installed power of the CHP installations was 84.9 MW, with 325 GWh electricity generated. The reduction of GHG emissions due to the operation of CHP systems using fossil fuels was estimated to be 96.9 kt CO₂ eq in 2015 and 92.4 kt CO₂ eq in 2016.

56. Efficient energy use in industry has been promoted mostly through three framework financial mechanisms: the Cohesion Fund; a scheme for mandatory final energy savings for companies selling electricity; and Eco Fund loans (see paras. 65 and 66 below).

57. **Residential and commercial sectors.** Slovenia has in place measures dedicated to promoting energy efficiency in buildings and households. In 2015 the Action Plan for Nearly Zero-Energy Buildings up to 2020 was adopted by the Government, which includes targets for 'nearly zero-energy' new buildings; renovation programmes; and measures for achieving the targets. In the same year, the Long-term Strategy for Promoting Investments in the Energy Renovation of Buildings was agreed.

58. The Energy Efficiency Action Plan for 2014–2020, adopted in May 2015, defines measures for more efficient use of energy in residential and public buildings. In 2017 the plan was updated and supplemented with new measures, such as support for optimizing the operation of energy systems, instruments for financing the renovation of multifamily houses and sustainable criteria for buildings. An update of the rules for efficient use of energy in buildings and the accompanying technical guidelines is also planned for the future.

59. There are also measures in place focusing on the production of district heat from RES and CHP (see paras. 51 and 54 above). The Energy Act defines a mandatory share for heat produced from RES, namely that, by 2020, heat distributors must ensure that heat is provided in line with at least one of the following criteria: (1) at least 50 per cent is generated from RES; (2) at least 50 per cent is generated from waste heat; (3) at least 75 per cent is from high-efficiency CHP; or (4) at least 75 per cent is generated from a combination of the sources referred to in the first three items.

60. **Transport sector.** GHG emissions from transport have been growing, as has their overall share in the total national GHG emissions (see table 5), so measures dedicated to this sector play a key role in Slovenia's mitigation actions. Slovenia is highly exposed to transit transport because of its position at the crossroads of European corridors and the attractive price for oil derivatives, which has a significant impact on the sale of liquid motor fuels and, thus, on GHG emissions. Therefore, Slovenia has a variety of measures aimed at promoting public transport, sustainability of freight transport, efficiency of vehicles and driving, increased use of RES and non-motorized modes of transport.

61. Public passenger transport in Slovenia is governed by the Road Transport Act and the Railway Transport Act. Several measures targeting public transport are in place, such as uniform electronic ticketing and park-and-ride car parks, which aim to establish an efficient passenger transport system in order to decrease the number of personal vehicles in cities. OP GHG-2020 includes an indicative target for increasing passenger kilometres travelled by public transport (1,763 km in 2020). Regarding freight transport, the emphasis is on co-modality, which requires the modernization of existing infrastructure. The Transport Development Strategy and the Programme for the Development of Transport in the Republic of Slovenia have the objective of establishing efficient railway transport (the electrification of the whole Slovenian railway network, modernization, upgrades and newly built facilities) and efficient road freight transport (the introduction of electronic tolling for cargo vehicles and information technology for higher-capacity utilization of existing roads). Measures aimed at shifting the transit of cargo from road to railway are also being implemented (e.g. the inclusion of external costs in tolls and other taxes for freight transport). OP-GHG 2020 also established a target to increase freight railway transport to 25 per cent of total freight transport by 2013, which was achieved.

62. In 2017 the Government of Slovenia adopted a strategy on market development for the establishment of adequate infrastructure related to alternative fuels in the country's

transport sector. The key objectives of the strategy are, from 2025, to limit new registrations of passenger vehicles and light-duty vehicles with a total carbon footprint above 100 g CO₂/km according to the manufacturer's declaration; and, after 2030, to disallow the new registration of cars with internal combustion using petrol or diesel with a total carbon footprint of more than 50 g CO₂/km. The existing limits for 2017 and 2020 are 130 g CO₂/km and 95 g CO₂/km for passenger cars and 175 and 147 g/km for light-duty vehicles, respectively.

63. The strategy proposes groups of measures for each alternative fuel (electricity, liquefied petroleum gas, liquefied natural gas, compressed natural gas, biofuels and hydrogen), for which a detailed action plan for 2018–2020 is under development. Measures are envisaged to provide the appropriate charging infrastructure for electric vehicles, and for compressed or liquefied natural gas vehicles, which will facilitate increasing the use of alternative fuel vehicles. The measures will be implemented in various ways, including through financial incentives and co-financing for the construction of adequate infrastructure for alternative fuels; changes in regulations; promoting innovative solutions; and eliminating administrative barriers. Some of the key measures include financial incentives for purchasing electric and plug-in hybrid vehicles, exemptions from certain charges for electric vehicles, free parking and other related incentives.

64. The NC7 includes general information on how Slovenia promotes and implements the decisions of ICAO and IMO to limit emissions from aviation and marine bunker fuels.

65. **Industrial sector.** PaMs in the industrial sector are aimed at achieving efficient use of energy in industry, especially through three framework financial mechanisms: the Cohesion Fund; a scheme for mandatory final energy savings for companies selling electricity; and Eco Fund loans. In 2015 the total amount of end-use energy savings resulting from these incentives was estimated to be 95 GWh. In 2016 further measures were introduced, resulting in energy savings estimated at 131.5 GWh (Ministry for Infrastructure, 2017).

66. In 2017 the Eco Fund provided EUR 4 million in grants to companies and other legal entities to promote measures for efficient use of energy in buildings (e.g. lighting systems, charging systems, energy audits, energy management systems) and the use of RES (e.g. solar heating systems). It is expected that about 60 investment projects will be implemented, which will contribute to reducing energy use by almost 35 GWh/year and to an annual reduction of 19 kt CO₂ eq.

(c) Policies and measures in other sectors

67. **Industrial processes.** The PaMs in the industrial processes sector focus on the reduction of F-gas emissions, which have been increasing in Slovenia (see table 5). The implementation of the provisions of EU regulation 517/2014 relating to F-gases from 2014 will reduce F-gas emissions from stationary equipment by limiting F-gases on the EU market by means of a quantity cap and by limiting the use of F-gases with high GWP. The aim is also to reduce leakage and increase the safe handling of F-gases. Implementation of this measure will lead to an estimated 61 kt CO₂ eq emission reduction by 2020.

68. The EU directive on emissions from air conditioning systems in motor vehicles (2006/40/EC) was transposed into Slovenian legislation for category M1 and N1 motor vehicles (passenger motor vehicles and goods vehicles up to a total mass of 3.5 t). The directive was implemented in three phases and the final phase, which entered into force on 1 January 2017, prohibits the registration of vehicles with a built-in air conditioning system containing F-gases with a GWP above 150.

69. **Agriculture.** In 2011 a resolution was adopted on the Slovenian Agriculture and Food Industry Strategic Guidelines until 2020, "Let's secure food for tomorrow", which places among its strategic goals food security (ensured through stable food production and the provision of quality and affordable food to consumers), sustainable use of production potential and the provision of public goods related to agriculture. The overarching objective of the PaMs for agriculture is to reduce emissions per unit of food produced via the implementation of modern farming practices and increased efficiency in animal production.

70. The Rural Development Programme includes measures aimed at increasing efficiency in animal production, such as financing cattle breeding programmes and financing public advisory services for farmers on forage production, animal nutrition and general cattle production. The Ministry of Agriculture, Forestry and Food finances public agricultural services concerning, among other things, grazing management, which promotes emission reductions in the sector. Measures included in the Rural Development Programme (e.g. investments in physical assets, agri-environment-climate payments, organic farming) contribute to reducing emissions from nitrogen fertilizers via efficient use of mineral and animal fertilizers. All farms participating in the agri-environment-climate payments scheme must have a programme of activities that includes record-keeping on the use of mineral and animal fertilizers and follow requirements for crop rotation, fertilization based on analysis of mineral nitrogen in the soil, low-emission fertilization, greening of arable land, and so on.

71. **LULUCF.** Slovenia has in place PaMs in the area of sustainable forest management according to the principles of sustainability, environmental friendliness and multifunctionality. The main objective for the forestry sector is the sustainable development of the whole ecosystem in terms of biodiversity and all its ecological, economic and social functions.

72. The Slovenian Forest Service plays an important role in the management of all forest areas regardless of their ownership. However, as around 76 per cent of the forests in Slovenia constitute private property, this poses a challenge. Tree felling follows the Forest Management Plans for Forest Management Areas, which are valid for 10-year periods, according to which, in order to follow sustainable and environmentally friendly forest management, 7.5 million m³/year wood may be cut down (75 per cent of forest growth per year) without endangering the stability of the forests and their habitats.

73. **Waste management.** In 2015 the quantity of deposited biodegradable waste in Slovenia was 75 per cent less than in 2005 and slightly higher than the linear path towards the indicative target for 2020 set in OP GHG-2020. By 2020 the amount of deposited biodegradable waste has to be reduced by an additional 66 per cent. The ERT noted that the objective of OP GHG-2020 is more ambitious than the EU 2020 objective.

74. Slovenia adopted its Waste Management Plan and Waste Prevention Programme in 2016, which are the basis for achieving ambitious objectives by 2030 regarding reducing landfilled biodegradable waste, reducing waste volume and minimizing the negative impact of waste on the environment. In addition to the separate collection of waste and the mechanical biological treatment of mixed waste, additional measures such as raising tax on the landfilling of waste, improving the collection and management system, and introducing fees for public services according to a 'pay as you throw' rule will contribute to further reducing the quantity of deposited biodegradable waste. The Waste Prevention Programme covers 34 instruments, such as awareness-raising, green public procurement and programmes for potential waste prevention in companies.

75. In Slovenia all landfill operators were obliged to build landfill gas capture facilities by the end of 2005. In 2015, 6.5 kt CH₄ was captured, which constitutes 30 per cent of the CH₄ generated by landfills, and the expected emission reduction resulting from landfill gas capture in 2020 is estimated at 105 kt CO₂ eq. Landfill gas is mostly used for the production of electricity.

(d) Minimization of adverse impacts in accordance with Article 2 and Article 3, paragraph 14, of the Kyoto Protocol

76. In the NC7 Slovenia reported general information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties.

77. Slovenia implements measures with the aim of keeping the negative impacts of climate change as well as the impacts of the measures for reducing GHG emissions as low

as possible for all countries, particularly for the most vulnerable developing countries. In addition, as an EU member state, Slovenia performs additional activities in this area.

78. Further information on how Slovenia strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the Party's 2018 annual submission. The Party reported on the assessment of the economic and social consequences of its response measures, adverse effects of climate change, and minimization of effects on international trade and social, environmental and economic impacts on other Parties. The reporting included information on cooperation with the EU and on the Slovenian national approach; a description of the impact assessment system established by the EU for analysing both benefits and costs and addressing all significant economic, social and environmental impacts of possible new initiatives; and considerations, when adopting national measures, concerning possible impacts on developing countries (such as possible carbon leakage). Specific impact analyses are conducted for fiscal policy instruments and the promotion of biofuels.

(e) Assessment of adherence to the reporting guidelines

79. The ERT assessed the information reported in the NC7 of Slovenia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 9.

Table 9

Findings on policies and measures, including those in accordance with Article 2 of the Kyoto Protocol, from the review of the seventh national communication of Slovenia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement ^a specified in paragraph 14 Issue type: completeness Assessment: encouragement	Slovenia reported the PaMs, or combinations of PaMs, that have the most significant impact on GHG emissions and removals. However, it did not indicate those that are innovative and/or effectively replicable by other Parties. During the review, Slovenia explained that it considers many of its PaMs to be innovative but their replicability depends on a country's internal structure and the organization of its services. Examples include the energy performance contracting model used for the renovation of public buildings; the development of comprehensive transport strategies in municipalities; and uniform electronic ticketing for public transport. The ERT reiterates the encouragement made in the previous review report (FCCC/IDR.6/SVN, para. 15) that Slovenia improve the completeness of its reporting by including in its next NC information on innovative and/or replicable PaMs.
2	Reporting requirement ^a specified in paragraph 16 Issue type: completeness Assessment: encouragement	Slovenia did not report on action taken to implement commitments under Article 4, paragraph 2(e)(ii), of the Convention, which requires Parties to identify and periodically update their policies and practices that encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur. During the review, Slovenia explained that factors leading to greater levels of anthropogenic GHG emissions than would otherwise occur are checked as part of updating the GHG projections and reporting on the implementation of the national Energy Efficiency Action Plan for 2014–2020. In addition, a systematic ex ante assessment of the most important plans with potential impact on GHG emissions is conducted within the framework of the strategic impact assessment of new policies. The ERT encourages Slovenia to improve the completeness of its reporting by including in its next NC information on its actions regarding the periodical update of PaMs and practices that encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur together with the rationale for implementing such actions.
3	Reporting requirement ^a specified in paragraph 21	In section 4.1.5 of its NC7, Slovenia provided only a very general description of the way in which progress with PaMs to mitigate GHG emissions is monitored and evaluated over time, both domestically under the OP GHG-2020 and at the EU level

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
	<p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>(under monitoring mechanism regulation 525/2013), from which it was difficult to understand responsibilities and approaches used for the progress monitoring and evaluation.</p> <p>During the review, Slovenia provided further information on its domestic approach, such as details of the indicators used for monitoring progress in the implementation of OP GHG-2020 and the foreseen annual progress reports of the programme under the responsibility of the Ministry for the Environment and Spatial Planning. The conclusions of progress reports are to be adopted by the Government and presented to the public. In addition, Slovenia is developing its national system for PaMs and projections on the basis of experience with the national inventory system and with previous reporting to the EU and the UNFCCC on projections and policies; it contains the same main elements as the national inventory system already in place under the Kyoto Protocol. The basis of the system is already in place but it will be further developed.</p> <p>The ERT encourages Slovenia to improve the transparency of its reporting by including in its next NC information on the way in which progress in implementing PaMs is monitored, covering for example system architecture, relevant indicators and the process of approving findings.</p>
4	<p>Reporting requirement^a specified in paragraph 22</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>When reporting on the status of implementation of some PaMs Slovenia in some cases noted the status as “implemented” and in others as “implemented, adopted”. The ERT considered that such information was not transparent and that the difference in the status of the PaMs was not clear.</p> <p>During the review, Slovenia explained that some of the presented PaMs (e.g. promotion of public transport) constitute a bundle of instruments that are at different stages of implementation. Therefore “implemented, adopted” was used to indicate that some instruments were implemented and others adopted, while the term “implemented” was used when all instruments in a bundle were implemented.</p> <p>The ERT encourages Slovenia to improve the transparency of its reporting by demonstrating in its next NC a clear distinction between adopted and implemented PaMs or by providing relevant explanatory information.</p>
5	<p>Reporting requirement^a specified in paragraph 23</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Slovenia reported a quantitative estimate of the impacts of individual PaMs or collections of PaMs only for some PaMs. The impacts reported for 2020 and 2030 in the NC7 differ from the values included in the NC6, and the NC7 does not include description of estimation methods.</p> <p>During the review, the Party explained that the effect of a measure was not estimated if the measure was forward-reaching and supposed to have important effects after the projected period, or if projections had not been developed (such in the case of LULUCF). The Party explained that the general methodology used for estimating effects of measures in 2020 and 2030 for the NC7 is the same as that used for the NC6 and BR2, and the effects of measures were estimated by comparing WEM and WOM projections. The differences between the values reported in the NC6 and the NC7 are the result of new projections and different base years being used in estimating the effects (2010 and 2015, respectively). Slovenia plans to improve its evaluation of the impact of implemented measures as well as its national system for assessing and monitoring progress in the implementation of mitigation actions.</p> <p>The ERT reiterates the encouragement made in the previous review report (FCCC/IDR.6/SVN, para. 15) that Slovenia improve the transparency of its reporting by including in its next NC a quantitative estimate of the impacts of individual PaMs or collections of PaMs for all PaMs; and the ERT also encourages the Party to include a brief description of estimation methods and any changes therein compared with the previous NC, if relevant, or to explain why reporting quantitative estimates is not possible.</p>
6	<p>Reporting requirement^a specified in paragraph 24</p> <p>Issue type:</p>	<p>Slovenia did not report information regarding costs of PaMs, non-GHG mitigation benefits of PaMs, how the policy or measure interacts with other PaMs at the national level or how policies complement each other in order to enhance overall GHG mitigation.</p>

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
	<p>completeness</p> <p>Assessment: encouragement</p>	<p>During the review, Slovenia provided additional information in this respect. Regarding costs of PaMs, Slovenia provided information for several PaMs, such as total public funds needed for the implementation of measures to achieve the non-ETS target until 2020 (EUR 1,131 million in 2014–2020) and costs related to the RES and CHP support scheme (EUR 243,895,050 in 2010–2014).</p> <p>Slovenia has not conducted a specific study to assess multiple benefits of different measures. However, different benefits have been assessed for some measures, such as the long-term strategy for mobilizing investments in the energy renovation of buildings (i.e. economic benefits, social benefits and environmental benefits). Different benefits were also assessed for the support scheme for renewable electricity production and production from CHP in the biennial report on the evaluation of the implementation of the support scheme.</p> <p>Regarding the interaction of PaMs, the Party explained that this aspect is analysed within the process of strategic environmental impact assessment for sectoral programmes. During the process it is assured that sectoral and overall programmes do not contradict climate, environmental and nature conservation targets.</p> <p>The ERT reiterates the encouragement made in the previous review report (FCCC/IDR.6/SVN, para. 15) that Slovenia improve the completeness of its reporting by including in its next NC information on costs, benefits and interactions of PaMs, if available. The ERT notes that the Party may use as a basis the information provided to the ERT during the review.</p>
7	<p>Reporting requirement^a specified in paragraph 26</p> <p>Issue type: transparency</p> <p>Assessment: encouragement</p>	<p>Slovenia provided information on PaMs that are no longer in place. However, the information provided does not explain why a policy or measure was abolished.</p> <p>During the review, Slovenia explained that the F-gas tax was abolished mainly because of EU regulation 517/2014, which, since 2015, has limited the amount of F-gases on the EU market. The tax exemption for the combustion of fuels as a propellant was not abolished, but a scheme of exemptions from taxes for CO₂ implemented on the basis of contracts was abolished.</p> <p>The ERT encourages Slovenia to improve the transparency of its reporting by including in its next NC reasons why some PaMs are no longer in place, if relevant.</p>
8	<p>Reporting requirement^b specified in paragraph 35</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>Slovenia reported very general information on the steps that it has taken to promote and/or implement any decisions of ICAO and IMO to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels. The Party briefly referred to its Resolution on Traffic Policy without providing any information on its scope, the participation of its aviation sector in the EU ETS or supporting EU efforts to reduce GHG emissions from international shipping.</p> <p>During the review, Slovenia explained that it supports ICAO and IMO work as part of the EU. The EU, with Slovenia's support, included aviation CO₂ emissions in the EU ETS from 2012, resulting in a limitation of emissions below historical levels in 2004–2006. The EU has also been the driving force behind the ICAO agreement on a global market-based measure to limit GHG emissions from international aviation (Carbon Offsetting Scheme for International Aviation), which will be operational from 2021. Slovenia, together with all EU member States, will be participating in the voluntary pilot phase. Appropriate action has also been implemented at the European level for maritime transport (monitoring and reporting of GHG emissions from ships) and the EU has been actively pushing for an international shipping emission reduction agreement.</p> <p>The ERT recommends that Slovenia improve the transparency of its reporting by including in its next NC some examples as provided during the review of steps undertaken to promote and/or implement decisions of ICAO and IMO.</p>

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.

^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 reporting guidelines for supplementary information.

C. Projections and the total effect of policies and measures, including information on complementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

1. Projections overview, methodology and results

(a) Technical assessment of the reported information

80. Slovenia reported updated projections for 2020, 2025, 2030 and 2035 relative to actual inventory data for 2015 under the WEM scenario. The WEM scenario reported by Slovenia includes implemented and adopted PaMs. The definition indicates that the scenario was prepared according to the UNFCCC reporting guidelines on NCs.

81. Although Slovenia's NC6 included WAM projections, the Party did not report WAM or WOM projections in its NC7. During the review, Slovenia explained that WOM scenario projections were prepared for each sector, but the definition of the WOM scenario is not completely consistent across sectors, which is the main reason the projections were not reported. Slovenia stated that the WAM scenario was not included in its reporting because the projections were not available for all or most of the sectors at the time of the NC7 preparation.

82. The WEM projections are presented on a sectoral basis (see table 11), using the same categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs, HFCs and SF₆ collectively) for 1986–2035. The projections are also provided in an aggregated format for each sector except for the LULUCF sector, as well as for a Party total using GWP values from the IPCC Fourth Assessment Report. Slovenia provided separate projections of EU ETS and non-ETS sector emissions in the NC7.

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

84. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and not included in the totals.

85. Slovenia reported on factors and activities affecting emissions for each sector included in the projections.

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

86. The methodology used for the preparation of the projections is similar to that used for the preparation of the emission projections for the BR2 and NC6. A linear network model for processes and connections (Reference Energy and Environmental System of Slovenia, known as REES-SLO2) developed in the Modular Energy System Analysis and Planning⁷ environment was used for the energy sector projections. The same model was used for the transport sector, together with the EU PRIMES⁸ model for assessing overall fuel consumption and transit fuel use in the country, and specific national transport models such as PET-SLO for projecting the structure of newly acquired personal vehicles. Projected emissions for industrial processes were prepared using Excel on the basis of projected production and growth in F-gas consumption. For the waste and agriculture sectors, time series were developed using IPCC methodology. Details of models and methodologies were presented in section 5.9 of the NC7. There were no projections presented for the LULUCF sector.

87. To prepare its projections, Slovenia relied on key underlying assumptions of the following: GDP, population, number of households, international oil, coal and gas prices, gross inland consumption and gross electricity production. The NC7 (annex D, table 31)

⁷ The energy system analysis toolbox initially developed by the Institute for Energy Economics and the Rational Use of Energy at the University of Stuttgart in Germany.

⁸ See https://ec.europa.eu/clima/sites/clima/files/strategies/analysis/models/docs/primes_model_2013-2014_en.pdf.

provided information on the specific socioeconomic assumptions and parameters used in the projections for each sector. In addition, the sources of sectoral projections in terms of relevant programme documents were provided.

88. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. The key trends are as follows: GDP (at constant prices 2005) is projected to grow from EUR 32.48 billion in 2015 to EUR 36.28 billion in 2020 and EUR 47.17 billion in 2030. Between 2015 and 2020, the population is projected to decrease by 2.2 per cent, or from 2.06 to 2.02 million, while the number of households is projected to increase by 3.7 per cent (from 824,000 to 854,000). Gross inland consumption is expected to grow by 5.1 per cent over the same period (from 272.33 to 286.13 PJ), while gross electricity production is expected to grow by 1.3 per cent (from 17.92 to 18.15 TWh). International fuel prices (coal, oil and gas) are expected to be EUR 3.36, 15.00 and 8.03 per GJ, respectively, in 2020.

89. Slovenia did not provide an explanation of changes in the assumptions used in preparing the projection scenarios since the submission of its NC6, but provided graphical and explanatory information on the main reasons for the lower emission projections and lower estimated emissions in 2015 in section 5.6 of the NC7.

90. Slovenia provided information on sensitivity analyses, which were conducted for the assumptions on transit transport and the implementation of measures for sustainable transport and environmental policies. Considering the fact that in Slovenia the development of the transport sector, which represents the most important source of emissions from non-ETS sectors, is very uncertain, a sensitivity analysis was focused on that sector. The analyses were reported separately for the projections of transport emissions, total emissions and non-ETS emissions. A sensitivity analysis of the projections was carried out with regard to the price of fuels in comparison with those of neighbouring countries; and the implementation of measures in this sector. The difference between the highest and lowest projections of GHG emissions from transport amounted to 30 per cent.

(c) Results of projections

91. The projected emission levels under the WEM scenario and information on the Kyoto Protocol target and the quantified economy-wide emission reduction target are presented in table 10 and the figure below.

Table 10

Summary of greenhouse gas emission projections for Slovenia

	<i>GHG emissions (kt CO₂ eq per year)</i>	<i>Changes in relation to base-year^a level (%)</i>	<i>Changes in relation to 1990 level (%)</i>
Kyoto Protocol base year ^b	20 327.58	NA	9.3
Quantified emission limitation or reduction commitment under the Kyoto Protocol (2013–2020) ^c	12 428.22	NA	NA
Quantified economy-wide emission reduction target under the Convention ^d	NA	NA	NA
Inventory data 1990 ^e	18 594.28	–8.5	NA
Inventory data 2015 ^e	16 831.16	–17.1	–9.5
WEM projections for 2020 ^f	18 008.58	–11.4	–3.1
WAM projections for 2020 ^f	–	–	–
WEM projections for 2030 ^f	16 351.39	–19.6	–12.1
WAM projections for 2030 ^f	–	–	–

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/SVN.

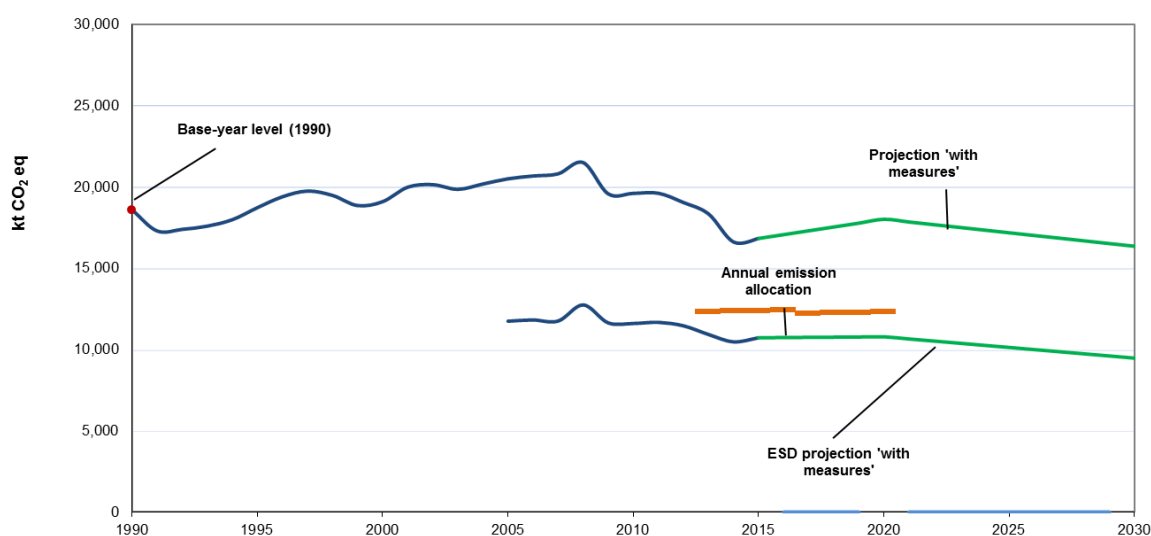
^c The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target of the EU and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. The target for non-ETS sectors is +4.0 per cent compared with the 2005 level for Slovenia under the ESD. The value presented in this line is based on annex II to European Commission decision 2013/162/EU and as adjusted by Commission implementing decision 2013/634/EU that established the assigned amount for the EU member States and divided by eight years to calculate the annual emission level.

^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 Slovenia's BR3 CTF table 6.

^f From Slovenia's NC7 and/or BR3.

Greenhouse gas emission projections reported by Slovenia



Sources: (1) data for 1990–2015: Slovenia's NC7 and 2017 annual inventory submission, version 1; total GHG emissions excluding LULUCF; (2) data for 2015–2030: Slovenia's NC7; total GHG emissions excluding LULUCF.

92. Slovenia's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 18,008.58 and 16,351.39 kt CO₂ eq, respectively, under the WEM scenario, which represents a decrease of 3.1 (585.7 kt CO₂ eq) and 12.1 (2,242.89 kt CO₂ eq) per cent, respectively, below the 1990 level. The 2020 projections suggest that Slovenia will continue contributing to the achievement of the EU target under the Convention (see para. 38 above).

93. Slovenia's target for non-ETS sectors is to limit its emission growth to 4 per cent above the 2005 level by 2020 (see para. 42 above). Slovenia's AEAs, which correspond to its national emission target for non-ETS sectors, change from 12,324 kt CO₂ eq in 2013 to 12,307 kt CO₂ eq for 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 10,781 kt CO₂ eq by 2020, which is 12.4 per cent below the AEAs allocated for 2020 (a decrease of 8.2 per cent compared with the 2005 level). The ERT noted that this suggests that Slovenia expects to meet its target under the WEM scenario.

94. Slovenia presented the WEM scenario by sector for 2020 and 2030, as summarized in table 11.

Table 11
Summary of greenhouse gas emission projections for Slovenia presented by sector

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not	8 767.44	7 231.16	–	5 511.38	–	–17.5	–	–37.1	–

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
including transport)									
Transport	2 733.53	5 419.30	–	5 225.48	–	98.3	–	91.2	–
Industry/industrial processes	4 525.52	3 006.29	–	3 323.33	–	–33.6	–	–26.6	–
Agriculture	1 922.89	1 904.24	–	1 921.41	–	–1.0	–	–0.1	–
LULUCF	–4 454.15	NE	–	NE	–	NE	–	NE	–
Waste	644.90	447.58	–	369.78	–	–30.6	–	–42.7	–
Other (specify)									
Total GHG emissions without LULUCF	18 594.28	18 008.58	–	16 351.39	–	–3.1	–	–12.1	–

Source: Slovenia's BR3 CTF table 6(a).

95. The information in table 11 and the analysis below is as provided by the Party in CTF table 6(a) with 1990 data, consistently with the 2017 annual submission. The historical data also differs from the sector allocation in the inventory section of this report because the emissions from fuel combustion in the industry sector are allocated under the IPPU sector and not under the energy sector. According to the detailed data provided in the tables in annex C to the NC7, the emission contribution of fuel combustion in industry will be 1,697 and 2,052 kt CO₂ eq in 2020 and 2030, respectively, which is more than the emissions from the IPPU sector. Energy in table 11 corresponds to the total for energy supply and other sectors from the tables in annex C to the NC7.

96. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy and industry sectors, amounting to projected reductions of 1,536.28 kt CO₂ eq (17.5 per cent) and 1,519.23 kt CO₂ eq (33.6 per cent) between 1990 and 2020, respectively. The decreasing emission trend in the energy sector mostly depends on the reduction of electricity production by coal-based units and their replacement with gas-powered units and the increase in the use of RES. Under the WEM scenario, the increase in emissions from the transport sector is limited to 2,658.77 kt CO₂ eq (98.3 per cent) by 2020. The main reason behind the trend is the increase in passenger and freight transport. Under the WEM scenario, the estimated emission reduction for the waste sector is 197.33 kt CO₂ eq (30.6 per cent) by 2020, which depends on the policies for landfilled biodegradable waste and volume of mixed waste.

97. The pattern of projected emissions reported for 2030 under the same scenario is generally the same, with an even higher decrease in emissions from the energy sector (by 37.1 per cent or 3,256.06 kt CO₂ eq below the 1990 level). However, there is a slight increasing trend between 2020 and 2030 in the emissions from the industry and agriculture sectors. By 2030, emissions from the industry and agriculture sectors are expected to increase by 317.04 kt CO₂ eq (10.5 per cent) and 17.17 kt CO₂ eq (0.9 per cent), respectively, compared with the 2020 level under the WEM scenario, while emissions from the energy sector are expected to decrease by 1,719.78 kt CO₂ eq (23.8 per cent) between 2020 and 2030.

98. Slovenia presented the WEM scenario by gas for 2020 and 2030, as summarized in table 12.

Table 12

Summary of greenhouse gas emission projections for Slovenia presented by gas

Gas	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂	15 074.48	14 686.27	–	13 369.08	–	–2.6	–	–11.3	–
CH ₄	2 471.10	2 107.75	–	1 950.75	–	–14.7	–	–21.1	–
N ₂ O	831.28	890.28	–	899.50	–	7.1	–	8.2	–
HFCs	0.00	296.60	–	104.36	–	NA	–	NA	–
PFCs	207.59	15.60	–	15.60	–	–92.5	–	–92.5	–
SF ₆	9.83	12.08	–	12.10	–	22.9	–	23.1	–
NF ₃	NO	NO	–	NO	–	–	–	–	–
Total GHG emissions without LULUCF	18 594.28	18 008.58	–	16 351.39	–	–3.1	–	–12.1	–

Source: Slovenia's BR3 CTF table 6.

99. For 2020, the most significant reductions are projected for CO₂ and CH₄ emissions: 388.21 kt CO₂ eq (2.6 per cent) and 363.35 kt CO₂ eq (14.7 per cent) between 1990 and 2020, respectively. For the period 1990 and 2030, the most significant reductions are still projected for CO₂ and CH₄ emissions: 1,705.4 kt CO₂ eq (11.3 per cent) and 520.35 kt CO₂ eq (21.1 per cent), respectively. The main reason for the decreasing trend in CO₂ emissions is the reduction in the use of fossil fuels and the increase in the energy efficiency of buildings. CH₄ is projected to decrease because of decreasing emissions from the waste sector. Emissions of HFCs and N₂O are expected to increase by 296.60 kt CO₂ eq and 59.00 kt CO₂ eq, respectively, between 1990 and 2020. The estimated increase in N₂O emissions (by 7.1 and 8.2 per cent by 2020 and 2030, respectively) can be attributed to the agriculture sector. HFC emissions increased until 2015 and are expected to decrease by 14.4 and 69.9 per cent by 2020 and 2030, respectively, compared with the 2015 level.

(d) Assessment of adherence to the reporting guidelines

100. The ERT assessed the information reported in the NC7 of Slovenia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 13.

Table 13

Findings on greenhouse gas emission projections reported in the seventh national communication of Slovenia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 28 Issue type: completeness Assessment: encouragement	Slovenia did not provide WAM or WOM scenario projections in its NC7. During the review, Slovenia explained that WOM projections were not reported because of the inconsistency in the definition of the WOM scenario across sectors, and WAM projections were not included because they were not ready at the time of submission. The ERT encourages Slovenia to improve the completeness of the reporting in its next NC by providing WAM and WOM projections or relevant explanations as to why this may not be possible.
2	Reporting requirement specified in paragraph 35 Issue type: completeness	The ERT noted that Slovenia did not report any projections for the LULUCF sector in the NC7. During the review, Slovenia explained that there is an ongoing project concerning the LULUCF sector, the results of which were not available for the current reporting cycle. Slovenia is planning to include LULUCF projections in its next NC.

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: recommendation	The ERT recommends that Slovenia improve the completeness of its reporting by providing projections for the LULUCF sector.
3	Reporting requirement specified in paragraph 35 Issue: completeness Assessment: encouragement	The ERT noted that projections shall be presented for CO ₂ , CH ₄ , N ₂ O, PFCs, HFCs and SF ₆ (treating PFCs and HFCs collectively in each case), and that Parties may provide projections of the indirect GHGs carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur oxides. Slovenia did not include projections of the indirect GHGs in its NC7. The ERT reiterates the encouragement made in the previous review report (FCCC/IDR.6/SVN, para. 64) that Slovenia improve the completeness of its reporting by including projections for indirect GHGs, such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur oxides, in its next NC.
4	Reporting requirement specified in paragraph 43 Issue type: transparency Assessment: encouragement	The ERT noted that Slovenia provided information on the models used for the projections by sector. However, the information was not sufficiently precise as to the models used and their characteristics (e.g. for the transport sector), such as type of model, strengths and weaknesses of the model or approach used, and how the model or approach used accounts for any overlap or synergies that may exist between different PaMs. The ERT encourages Slovenia to improve the transparency of its reporting by providing in the next NC information on the models used for developing projections for each sector and their characteristics.
5	Reporting requirement specified in paragraph 45 Issue type: completeness Assessment: encouragement	Slovenia did not provide information about the changes in the models and methodologies used to develop the GHG projections since the previous submission and did not elaborate on any changes in the assumptions used. During the review, Slovenia indicated that the methodology used for the preparation of the projections for the waste and agriculture sectors has changed since the NC6 in order to make them consistent with the national inventory. The ERT encourages Slovenia to improve the completeness of the reporting in its next NC by including information on the main differences in the assumptions and methodologies applied for GHG projections compared with the previous NC or commenting on the lack of any relevant changes.
6	Reporting requirement specified in paragraph 47 Issue type: transparency Assessment: encouragement	Slovenia provided information about key underlying assumptions and values of variables such as GDP, GDP growth, population growth and international fuel prices in the NC7 (annex D), but the ERT noted that values were not provided for the historical years 1990, 1995, 2000, 2010 and 2015 for a few parameters. During the review, Slovenia informed the ERT that historical values for international fuel prices were not provided due to a lack of consistent data for those years. The ERT reiterates the encouragement made in the previous review report (FCCC/TRR.2/SVN, para. 45) that Slovenia improve the transparency of its reporting by providing information on all key variables and assumptions for the historical period for the projections analysis, and also encourages the Party to provide an explanation if historical data cannot be provided (e.g. as a footnote to the relevant tables).

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

2. Assessment of the total effect of policies and measures

(a) Technical assessment of the reported information

101. In the NC7 Slovenia presented the estimated and expected total effect of implemented and adopted PaMs and an estimate of the total effect of its PaMs, in accordance with the WEM scenario, compared with a situation without such PaMs.

Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO₂ eq basis), for 2020, 2025, 2030 and 2035.

102. Slovenia reported that the total estimated effect of its adopted and implemented PaMs is 1,143.00 kt CO₂ eq for 2020. According to the information reported in the NC7, PaMs implemented in the transport sector will deliver by far the biggest effect by 2020 (owing to vehicle efficiency improvements, increased use of low-carbon fuels and structural changes in transport types), followed by those in energy supply, owing to the technological modernization of thermal power plants and the increase in the share of RES in electricity generation. For 2030, the PaMs in energy (without transport) should have the highest mitigation potential. Table 14 provides an overview of the total effect of PaMs as reported by Slovenia.

Table 14

Projected effects of Slovenia's planned, implemented and adopted policies and measures by 2020 and 2030

Sector	2020		2030	
	<i>Effect of implemented and adopted measures (kt CO₂ eq)</i>	<i>Effect of planned measures (kt CO₂ eq)</i>	<i>Effect of implemented and adopted measures (kt CO₂ eq)</i>	<i>Effect of planned measures (kt CO₂ eq)</i>
Energy ^a (without transport)	240	–	2 007	–
Transport	601	–	1 869	–
Industrial processes	98	–	352	–
Agriculture	25	–	72	–
Land-use change and forestry	–	–	–	–
Waste management	179	–	243	–
Total	1 143	–	4 543	–

Source: Slovenia's NC7 and BR3.

Note: The total effect of implemented and adopted PaMs is defined as the difference between the WOM and WEM scenarios.

^a Section 5.5 of the NC7 presents the total effect of PaMs by sector for the WEM scenario; table 27 provides the effect of PaMs for energy supply, industry, fugitive emissions and other sectors separately.

(b) Assessment of adherence to the reporting guidelines

103. The ERT assessed the information reported in the NC7 of Slovenia and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

3. Supplementary relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

(a) Technical assessment of the reported information

104. In the NC7 Slovenia provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. The ERT noted that Slovenia does not plan to use the market-based mechanisms to meet its Kyoto Protocol target. The Party stated that the latest projections of GHG emissions show that Slovenia will meet its objectives in accordance with EU decision 406/2009/EC without using the Kyoto Protocol mechanisms.

(b) Assessment of adherence to the reporting guidelines

105. The ERT assessed the information reported in the NC7 of Slovenia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

D. Provision of financial and technological support to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol

106. Slovenia 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, Slovenia provided information in the NC7 on its provision of support to developing country Parties. The ERT commends Slovenia for reporting this information and suggests that it continue to do so in future NCs.

107. The contribution of about EUR 3 million for climate finance or assistance to developing countries reported for 2016 represents an increase of 24.3 per cent compared with 2015, and the Party reported its aspiration to maintain the assistance at around EUR 3.5 million by 2020. One third of the amount is channelled via multilateral assistance and almost EUR 2 million via bilateral assistance. Slovenia has tried to offer about half of the assistance to projects for adaptation to climate change, while the other half targets cross-cutting and GHG mitigation projects. The projects focus mainly on the western Balkan countries (e.g. Albania, Montenegro, the former Yugoslav Republic of Macedonia) and include the transfer of knowledge, technologies or good practices from Slovenia to those countries.

108. In its NC7 Slovenia reported that for the first time it added resources from the Slovenian Climate Change Fund, where resources are gathered from the sale of allowances from the EU ETS, with the aim of allocating at least EUR 1 million per year for climate finance from the Fund by 2020. Slovenia plans to increase the annual contribution from its Climate Change Fund in order for the total climate finance to reach between EUR 6 million and 7 million in 2030. The share of climate finance in 2016 amounted to around 1 per cent of the total official development assistance and, by 2030, this is expected to increase to at least 30 per cent.

E. Vulnerability assessment, climate change impacts and adaptation measures

1. Technical assessment of the reported information

109. In the NC7 Slovenia provided the required information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and brief information on the action taken to implement Article 4, paragraph 1(b), of the Convention with regard to adaptation. Slovenia provided a description of climate change vulnerability and impacts and highlighted the adaptation response actions taken and planned. However, the Party did not provide information on cooperation with developing country Parties on preparing their adaptation plans.

110. Slovenia presented the observed temperature changes in the period 1961–2011 (average of 1.7 °C) and reported information on the expected impacts of climate change for three periods in the future (2011–2040, 2014–2070 and 2071–2100) using a regional climate model from the Euro-Cordex project,⁹ taking into account three possible projections of GHG concentrations in the atmosphere (very optimistic RCP2.6, moderately optimistic RCP4.5 and pessimistic RCP8.5 scenario) and covering variables such as temperature of air, soil, surface water, sea and groundwater, soil water content, amount of precipitation, quantitative status of watercourses, water supply of aquifers and phenological development of selected plant species.

111. Impetus has been given to addressing adaptation matters with the adoption of the Strategic Framework for Climate Change Adaptation (adopted by the Government on 7 December 2016), which provided further direction to government agencies on enhancing preparedness for climate change by integrating adaptation into all policies, measures and

⁹ See <https://www.euro-cordex.net/>.

practices. An Interdepartmental Working Group on Climate Change Adaptation was established in 2016, and the SEA Assessments of Climate Change Impacts in the 21st Century project already offers an appropriate expert groundwork and first estimates of the effects of climate change in the coming period, which will enable the preparation of an action plan on climate change adaptation in the future.

112. Slovenia reported that a comprehensive programme of measures for climate change adaptation will be developed on the basis of the climate impact assessment. Slovenia reported information on the assessment of vulnerability due to floods in the form of a preliminary flood risk assessment, but did not report information on vulnerability assessment for several other sectors (water resources management, drought, spatial planning, biodiversity, agriculture and forestry, and cultural heritage).

113. During the review, Slovenia explained that the majority (15 out of 22) of the measures of the Action Plan for Adaptation (2010–2011) of agriculture and forestry presented in the NC6 have been implemented, amounting to a cost of EUR 1,436,298, and that the plan was not updated or carried out after 2012 owing to lack of funding. Slovenia clarified that measures contributing to climate change adaptation have been included in the Regional Development Plan of the Common Agricultural Policy of the EU after 2014.

114. Table 15 summarizes the information on vulnerability and adaptation to climate change presented in the NC7 of Slovenia.

Table 15

Summary of information on vulnerability and adaptation to climate change reported by Slovenia

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Biodiversity and natural ecosystems	<p><i>Vulnerability:</i> No vulnerability assessment for biodiversity and natural ecosystems was reported in the NC7.</p> <p><i>Adaptation:</i> Special protection areas have been set up; several individual projects, including climate change impact assessments, are under way; an updated management programme by 2020 for NATURA 2000 sites is being implemented.</p>
Drought	<p><i>Vulnerability:</i> No vulnerability assessment for drought was reported in the NC7.</p> <p><i>Adaptation:</i> In 2006, Slovenia accepted a mandate for the organization of the work of the Drought Management Centre for South-Eastern Europe (within the framework of the United Nations Convention to Combat Desertification and WMO); expert groundwork was prepared for the national action plan for drought management and soil degradation; the DriDanube project is ongoing, which will provide tools for assessing and responding to drought in South-Eastern Europe.</p>
Agriculture and forestry	<p><i>Vulnerability:</i> No vulnerability assessment for agriculture and forestry was reported in the NC7.</p> <p><i>Adaptation:</i> The Climate Change Adaptation Strategy for Slovenian Agriculture and Forestry Sectors provided guidelines for adaptation activities that have been carried out in the past within the framework of the Action Plan for Adaptation (2010–2011), and in recent years mainly within the framework of legislative solutions and measures, such as in the areas of prevention (education, training, provision of guidelines) and mitigating the consequences of natural disasters (e.g. co-financing agricultural insurance, providing disaster relief and rehabilitation).</p>
Human health	<p><i>Vulnerability:</i> Slovenia carried out a risk assessment of the dangers of biological, chemical, environmental and unknown origin to human health and complemented it by considering climate impacts on the occurrence of infectious diseases.</p> <p><i>Adaptation:</i> Activities related to warning and awareness-raising programmes (e.g. the Safe in the Sun programme aimed at informing the target population of preschool children in kindergartens and schoolchildren about the harmful effects of sunlight and the measures that can effectively prevent consequences).</p>
Natural disasters	<p><i>Vulnerability:</i> Slovenia prepared a National Disaster Risk Assessment and in 2016 the document was updated with an assessment of the impacts of climate change, as well as some individual disaster risk assessments that already incorporate available climate data in their assessments.</p> <p><i>Adaptation:</i> The NC7 did not provide information on plans for adaptation to natural disasters.</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Flood risk	<p><i>Vulnerability:</i> Preliminary flood risk assessment was carried out, which defined areas of significant impacts of floods.</p> <p><i>Adaptation:</i> The Flood Risk Reduction Plan was adopted in June 2017, defining measures of comprehensive flood defence and taking into account climate change impacts.</p>
Infrastructure and economy	<p><i>Vulnerability:</i> No information on spatial planning and infrastructure vulnerability assessment was reported in the NC7.</p> <p><i>Adaptation:</i> A new law on spatial planning was adopted, which provides for regional spatial plans. In the process of environmental impact assessment, impacts of climate change will also be considered.</p>
Cultural heritage	<p><i>Vulnerability:</i> No vulnerability assessment for cultural heritage was reported in the NC7.</p> <p><i>Adaptation:</i> In August 2017, the Architectural Policy of Slovenia, "Architecture for people", was adopted, which views spatial planning and construction as activities that contribute to climate change adaptation. Guidelines for the energy renovation of cultural heritage buildings have been produced and published, and they specify, among other things, a set of measures for energy refurbishment to improve the energy efficiency of cultural heritage buildings. The procedures necessary for the successful planning and implementation of energy refurbishment measures are set out, which also represents a climate change adaptation measure.</p>
Water resources	<p><i>Vulnerability:</i> No vulnerability assessment for water resources was reported in the NC7.</p> <p><i>Adaptation:</i> The River Basin Management Plan for the Danube and Adriatic River Basins for the period 2016–2021 was adopted, which also defines measures in the area of adaptation to climate change.</p>

2. Assessment of adherence to the reporting guidelines

115. The ERT assessed the information reported in the NC7 and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 16.

Table 16

Findings on vulnerability assessment, climate change impacts and adaptation measures from the review of the seventh national communication of Slovenia

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	<p>Reporting requirement specified in paragraph 49</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p>	<p>In the NC7 Slovenia provided limited information on national and regional programmes containing measures to mitigate climate change by addressing anthropogenic GHG emissions and measures to facilitate adequate adaptation to climate change in line with Article 4, paragraph 1(b), of the Convention. Only a few vulnerability assessments and adaptation measures were outlined, and vulnerabilities for many sectors were not reported. An outline of the actions taken to implement Article 4, paragraph 1(b), of the Convention was also not reported.</p> <p>In response to a question from the ERT during the review, Slovenia explained that vulnerability assessments are now only planned on the basis of a comprehensive assessment of specific impacts and therefore not much information on vulnerability assessment for specific sectors can be provided until the assessments are finalized in cooperation with sectoral representatives. Only after the comprehensive impact and vulnerability assessment can measures for adaptation be considered.</p> <p>To improve the transparency of the reporting, the ERT recommends that Slovenia include an outline of the actions taken to implement Article 4, paragraph 1(b), of the Convention in its next NC. The ERT noted that to increase transparency it would be helpful to report on the progress of implementation of the vulnerability assessments. The ERT noted that the UNFCCC reporting guidelines on NCs encourage Parties to use the IPCC <i>Technical Guidelines for Assessing Climate Change Impacts and Adaptations</i> and the United Nations Environment Programme <i>Handbook on Methods for Climate Change Impacts Assessment and Adaptation Strategies</i>.</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
2	Reporting requirement specified in paragraph 49 Issue type: completeness Assessment: recommendation	<p>In the NC7 Slovenia did not provide information on cooperation with developing countries on preparing adaptation plans in line with Article 4, paragraph 1(e), of the Convention. This issue was raised in the previous review report (FCCC/IDR.6/SVN, para. 87).</p> <p>During the review, Slovenia informed the ERT that in its Resolution on International Development Cooperation and Humanitarian Aid, adopted in 2017, the fight against climate change, including adaptation, is one of the two priority areas for development cooperation, indicating an increase in the share of adaptation measures in the future. Slovenia informed the ERT that a number of projects have been supported in the past in Parties not included in Annex I to the Convention that have positively contributed to enhanced adaptation to climate change (e.g. wastewater treatment facilities or energy refurbishment of buildings in the Western Balkan countries, such as Albania, Montenegro and the former Yugoslav Republic of Macedonia).</p> <p>To improve the completeness of the reporting in the next NC, the ERT reiterates the recommendation made in the previous review report that Slovenia include information on actions taken or plans to cooperate with developing countries on adaptation.</p>

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

F. Research and systematic observation

1. Technical assessment of the reported information

116. Slovenia provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities in its NC7. However, the ERT noted that Slovenia did not use the structure presented in the annex to the UNFCCC reporting guidelines on NCs with separate sections on general policy on research and systematic observation; research; and systematic observation.

117. The Party has implemented and planned domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time. The programmes range from national strategies such as the Research and Innovation Strategy of Slovenia 2011–2020, the Slovenian Smart Specialization Strategy adopted in 2015 and the Slovenian Industrial Policy, to specific projects such as Climate Variability in Slovenia (2013) and LIFE ClimatePath2050. The draft National Environmental Action Programme (under preparation in 2017) will address the needs for further research and developing and adopting innovative technologies in the country.

118. In terms of activities related to systematic observation, Slovenia reported on domestic activities relating to systematic observation and air and water measurements conducted by SEA. The ERT noted that in its NC7 Slovenia did not provide information as required by the UNFCCC reporting guidelines on NCs on its international activities relating to research and systematic observation, including the World Climate Programme, the International Geosphere–Biosphere Programme, GCOS and the IPCC, or report on actions taken to support related capacity-building in developing countries.

119. Slovenia reported on national plans, programmes and activities for observing systems, including satellite and non-satellite climate observation. The Party also reported that, within the Operational Programme for the Development of Environmental and Transport Infrastructure for the 2007–2013 period, SEA had carried out a project to upgrade the system for monitoring and analysing the state of the water environment in Slovenia and that, in the course of the project, the network of hydrological and meteorological measurements was upgraded and updated. Slovenia did not report on

challenges related to the maintenance of a consistent and comprehensive observation system.

2. Assessment of adherence to the reporting guidelines

120. The ERT assessed the information reported in the NC7 of Slovenia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 17.

Table 17

Findings on research and systematic observation from the review of the seventh national communication of Slovenia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	<p>The ERT noted that Slovenia did not use for its NC7 the structure presented in the annex to the UNFCCC reporting guidelines on NCs with separate sections on general policy on research and systematic observation; research; and systematic observation.</p> <p>During the review, Slovenia informed the ERT that it prepared the NC7 on the basis of the reporting guidelines, the availability of data and a systematic presentation of the results so as to provide a holistic picture of the results of its climate efforts for the reporting period.</p> <p>The ERT recommends that Slovenia improve the transparency of the reporting in its next NC by presenting information on research and systematic observation in line with the structure presented in the annex to the UNFCCC reporting guidelines on NCs (e.g. by including a specific section on general policy on research and systematic observation, including information on funding).</p>
2	Reporting requirement specified in paragraph 58 Issue type: completeness Assessment: recommendation	<p>The ERT noted that in its NC7 Slovenia did not provide information on its international activities relating to research and systematic observation, including the World Climate Programme, the International Geosphere–Biosphere Programme, GCOS and the IPCC.</p> <p>During the review, the Party explained that SEA takes part in GCOS through its focal point and two out of its several meteorological stations are included in the GCOS observing system. SEA is also active in the global framework for climate services, mainly through the Commission for Climatology of WMO and other WMO technical commissions. SEA leads and coordinates the Drought Management Centre for South-Eastern Europe and takes an active part in a number of global and European associations and organizations.</p> <p>The ERT reiterates the recommendation made in the previous review report (FCCC/IDR.6/SVN, para. 93) that Slovenia improve the completeness of its reporting by providing information in its next NC on its international activities relating to research and systematic observation, including the World Climate Programme, the International Geosphere-Biosphere Programme, GCOS and the IPCC.</p>
3	Reporting requirement specified in paragraph 58 Issue type: completeness Assessment: recommendation	<p>The ERT noted that Slovenia in its NC7 did not provide information on action taken to support related capacity-building in developing countries.</p> <p>During the review, Slovenia explained that it provides capacity-building support as part of investment projects in developing countries, mainly in the Western Balkan countries.</p> <p>The ERT recommends that Slovenia include in its next NC information on actions taken to support capacity-building actions related to systematic observation in developing countries to improve the completeness of its reporting.</p>
4	Reporting requirement specified in paragraph 62 Issue type: completeness	<p>In its NC7 Slovenia did not provide information on the identification of opportunities for and barriers to free and open international exchange of research and systematic observation data and information and on action taken to overcome such barriers.</p> <p>During the review, Slovenia explained that the Party believes that in the area of climate data there is free and open international exchange of data and no barriers</p>

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: encouragement	have been encountered so far. The ERT encourages Slovenia to improve the transparency of its reporting by including in its next NC information on the identification of opportunities for and barriers to free and open international exchange of data and information and on action taken to overcome such barriers, if any.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

G. Education, training and public awareness

1. Technical assessment of the reported information

121. In the NC7 Slovenia provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information on the general policy on education, training and public awareness, primary, secondary and higher education, public information campaigns, training programmes, education materials, resource or information centres, the involvement of the public and non-governmental organizations and its participation in international activities.

122. Slovenia outlined the specific contributions and provision of support relating to the development and operation of an education and training system by a number of responsible institutions, such as the Ministry of Education, Science and Sport, local communities (municipalities), expert panels appointed by the Government, and institutions established to develop and provide advice on education (e.g. the National Education Institute of the Republic of Slovenia, Institute of the Republic of Slovenia for Vocational Education and Training, Slovenian Institute for Adult Education and National Examinations Centre).

123. In 2016–2017 the National Education Institute of the Republic of Slovenia performed an analysis of curricula and related documents in terms of the integration of key concepts and key competences of sustainable development, compliance with the principles of education for sustainable development, and didactic approaches/methods and forms of work for achieving the objectives of education for sustainable development. The analysis showed that sustainable development is not yet taught as a broad and comprehensive concept involving interconnected environmental, economic and social issues, with environmental categories the most frequently represented.

124. The main objectives of sustainable development education and training activities are defined in the Organization and Financing of Education Act (Article 2) and implemented in accordance with the Guidelines for Education for Sustainable Development from Preschool to Pre-university Education (from 2007) and the White Paper on Education (2011). In 2017, the preparation of the National Environmental Action Programme was under way. The draft document anticipates that, in the future, more decisive progress should be made towards the objectives of education for environmental protection.

125. The measures regarding information, education, awareness-raising and training are among the main measures considered in OP GHG-2020, the Framework Programme for Transition to a Green Economy, the Operational Programme for the Implementation of the EU Cohesion Policy 2014–2020 and the Biennial Climate Change Funding Programme. Thus, Slovenia reported that, for the objectives related to climate change, the amount of support is set at EUR 8 million in the Operational Programme for the Implementation of the EU Cohesion Policy 2014–2020 under priority axis “knowledge, skills and lifelong learning to enhance employability”.

126. There are many publications, high-profile projects and good practices regarding education, training and awareness-raising on climate change, such as publications by SEA, the Eco-Schools programme, “Slovenia is lowering its CO₂ emissions: Good Practice Examples” projects, the annual European Mobility Week and the free Energy Consulting for Citizens programme – ENSVET.

127. Non-governmental organizations have an important role to play in relation to public information and awareness, especially the 27 that work in the field of environment protection and nature conservation. The Ministry of the Environment and Spatial Planning is funding the Environmental Centre, which represents a framework for operations of environmental non-governmental organizations. The Slovenian platform of civil society for sustainable development, Plan B for Slovenia, led by non-governmental organizations is financed by the European Social Fund.

128. As a result of the above-mentioned measures, according to the Eurobarometer¹⁰ opinion poll, in 2017 the awareness of Slovenians of the gravity of climate change was comparable with the EU average (71 per cent and 74 per cent, respectively), but actions taken for fighting climate change were substantially above the EU average (66 per cent and 49 per cent, respectively).

2. Assessment of adherence to the reporting guidelines

129. The ERT assessed the information reported in the NC7 of Slovenia and identified an issue relating to completeness and adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table 18.

Table 18

Findings on education, training and public awareness from the review of the seventh national communication of Slovenia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 65 Issue type: completeness Assessment: encouragement	In the NC7 Slovenia did not provide information on the extent of public participation in the preparation or domestic review of the NC. During the review, the Party explained that public participation in climate change activities such as drafting climate change PaMs in Slovenia follows regulations based on the United Nations Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. ^a The Party gave examples of efforts invested in supporting the non-governmental sector, including measures taken by the Ministry of the Environment and Spatial Planning and other ministries and organizations. The ERT encourages Slovenia to improve the completeness of its reporting by including information in its next NC on the extent of public participation in the preparation or domestic review of the NC.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. 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.

^a See <http://www.unepce.org/fileadmin/DAM/env/pp/documents/cep43e.pdf>.

III. Conclusions and recommendations

130. The ERT conducted a technical review of the information reported in the NC7 of Slovenia in accordance with the UNFCCC reporting guidelines on NCs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC7 provides an overview of the national climate policy of Slovenia.

131. The information provided in the NC7 includes most of the elements of the supplementary information under Article 7 of the Kyoto Protocol, with the exception of some information on the national registry. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by Slovenia in its 2018 annual submission.

¹⁰ See https://ec.europa.eu/clima/citizens/support_en.

132. Slovenia's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 4.9 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 11.7 per cent below its 1990 level, in 2016. The decreasing emission trend between 1990 and 2016 was driven by the major structural changes in the economy after Slovenia gained its independence in the early 1990s and the economic crisis in 2008, which caused lower consumption of energy and lower production in the manufacturing sector. The country's energy profile significantly changed during the period and there has been a sharp overall increase in emissions from transport after Slovenia joined the EU in 2004. The decrease in emissions in the other sectors can be attributed to the impact of implemented environmental legislation and PaMs related to climate change.

133. Slovenia's main policy framework relating to energy and climate change is derived from the EU climate policy. The key plans and programmes supporting Slovenia's climate change goals include OP GHG-2020, the Energy Efficiency Action Plan for 2014–2020 (updated in 2017), the National Renewable Energy Action Plan 2014–2020 (updated in 2017), the Transport Development Strategy of the Republic of Slovenia, the Resolution on the Slovenian Agriculture and Food Industry Strategic Guidelines until 2020 and the Waste Management Plan and the Waste Prevention Programme. The legislative framework of Slovenia's climate change policy is set by the Environmental Protection Act, the Energy Act, the Road Transport Act and the Railway Transport Act. The mitigation actions with the most significant impact are the promotion of public passenger transport and freight transport, the promotion of energy-efficient driving, the promotion of energy efficiency and use of RES in buildings and the reduction of landfill biodegradable waste.

134. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Slovenia committed to contributing to the joint EU economy-wide quantified emission reduction target of reducing GHG emissions by 20 per cent compared with the base-year level by 2020. According to EU decision 406/2009/EC, Slovenia's national emission target for 2020 for non-ETS sectors is 4 per cent above the 2005 level.

135. The GHG emission projections provided by Slovenia are those under the WEM scenario, where emissions are projected to be 3.1 and 12.1 per cent below the 1990 level in 2020 and 2030, respectively. Slovenia reported a projection for non-ETS emissions under the WEM scenario of 10,781 kt CO₂ eq by 2020, which is 12.4 per cent below the AEAs for 2020 (a decrease of 8.2 per cent compared with the 2005 level). On the basis of the reported information, the ERT concludes that Slovenia expects to meet its 2020 target for non-ETS sectors under the WEM scenario.

136. The NC7 contains information on how the Party's use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. Slovenia is not planning to make use of the Kyoto Protocol mechanisms to meet its Kyoto Protocol target.

137. Slovenia 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, Slovenia provided information in the NC7 on its provision of support to developing country Parties. The support focuses mainly on the Western Balkan countries (e.g. Albania, Montenegro, the former Yugoslav Republic of Macedonia) and includes the transfer of knowledge, technologies or good practices from Slovenia to those countries.

138. The information on climate change impacts, vulnerability and adaptation provided in the NC7 is largely focused on the sectors identified to be vulnerable to the impacts of climate change (agriculture and forestry) and on general action being taken to adapt to climate change. Actions being undertaken include completing the impact and vulnerability assessment and finalizing the adaptation action plan. A list of possible adaptation measures was provided in the NC7. The adoption of the Strategic Framework for Climate Change Adaptation (December 2016) gave impetus to addressing adaptation matters because it provided further direction in relation to enhancing preparedness for climate change by integrating adaptation into all policies, measures and practices.

139. Slovenia's actions relating to research and systematic observation at the national level range from national strategies (Research and Innovation Strategy of Slovenia 2011–

2020, Slovenian Smart Specialization Strategy and Slovenian Industrial Policy) to specific projects (e.g. Climate Variability in Slovenia). The National Environmental Action Programme, currently under development, will further address the needs for further research as well as developing and adopting innovative technologies in the country.

140. Slovenia's education, training and public awareness activities are undertaken at both the domestic and international level, including the development and operation of an education and training system on environmental awareness, sustainable development and climate change.

141. In the course of the review, the ERT formulated the following recommendations for Slovenia to improve its adherence to the UNFCCC reporting guidelines on NCs and its reporting of supplementary information under the Kyoto Protocol:¹¹

- (a) To improve the completeness of its reporting by:
 - (i) Including information on how national circumstances and changes therein affect emissions (including from industrial sources) over time (see issue 1, table 4);
 - (ii) Providing information on measures taken to safeguard, maintain and recover data in the event of a disaster, and a list of information that is publicly accessible (see issue 1, table 7);
 - (iii) Reporting projections for the LULUCF sector (see issue 2, table 13);
 - (iv) Including information on actions taken or plans to cooperate with developing countries on adaptation (see issue 2, table 16);
 - (v) Providing information on its international activities relating to research and systematic observation, including the World Climate Programme, the International Geosphere–Biosphere Programme, GCOS and the IPCC (see issue 2, table 17);
 - (vi) Including information on action taken to support capacity-building actions related to systematic observation in developing countries (see issue 3, table 17);
- (b) To improve the transparency of its reporting by:
 - (i) Providing more detailed information on actions and some examples of steps taken to promote and/or implement decisions of ICAO and IMO (see issue 8, table 9);
 - (ii) Including more information on the expected impacts of climate change and an outline of the actions taken to implement Article 4, paragraph 1(b), of the Convention (see issue 1, table 16);
 - (iii) Presenting information on research and systematic observation in line with the structure presented in the annex to the UNFCCC reporting guidelines on NCs (see issue 1, table 17);
- (c) To improve the timeliness of its reporting by submitting its next NC on time (see para. 6 above).

IV. Questions of implementation

142. During the review the ERT assessed the NC7, including the supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, and reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol with regard to timeliness, completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. No questions of implementation were raised by the ERT during the review.

122.

¹¹ The recommendations are given in full in the relevant sections of this report.

Annex

Documents and information used during the review

A. Reference documents

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Report on the technical review of the sixth national communication of Slovenia. FCCC/IDR.6/SVN. Available at <https://unfccc.int/documents/8669#beg>.

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>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Barbara Simonc (Ministry of Environment and Spatial Planning), including additional material. The following documents¹ were provided by Slovenia:

Operativni program ukrepov zmanjšanja emisij toplogrednih plinov do leta 2020 (The Operational Programme for Reducing GHG Emissions until 2020). Available at: http://www.energetika-portal.si/fileadmin/dokumenti/publikacije/op_tgp/op_tgp_2020.pdf

Institut "Jožef Stefan" and Center za energetska učinkovitost. 2015. *Strokovne podlage za pripravo prvega letnega poročila o izvajanju OP TGP2020, končno poročilo projekta*. (The first report on monitoring implementation of The Operational Programme for Reducing GHG Emissions until 2020). Ljubljana. Available at http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/zakonodaja/varstvo_okolja/operativni_programi/1porocilo_opuzetp_2020_priloga1.pdf.

Energy agency. *POROČILO O DOSEGANJU NACIONALNIH CILJEV NA PODROČJU OVE IN SPTE ZA OBDOBJE 2015–2016*. 2017. (Report from evaluation of the support scheme for renewable electricity production and CHP electricity production), Available at: https://www.agen-rs.si/documents/10926/24862/Porocilo_cilji2015_2016/d8429203-36b5-4d2f-83fa-e31b87d7c297.

Slovenia's Smart Specialisation Strategy – S4, 2015. Available at http://www.svrk.gov.si/fileadmin/svrk.gov.si/pageuploads/SPS_predstavitev/S4_dokument_2015_october_eng_clean_lekt.pdf.

"SLOVENIAN ERA ROADMAP". *Slovenian Strategy for Strengthening the European Research Area 2016–2020*, 2016. Available at <https://rio.jrc.ec.europa.eu/en/library/slovenian-strategy-strengthening-european-research-area-2016-2020-era-roadmap>.

Environmental NGO's in Slovenia: http://www.mop.gov.si/si/nevladne_organizacije/.

Environmental Protection Act (Official Gazette of the Republic of Slovenia [Uradni list RS], No. 39/06 – official consolidated text, 49/06 - ZMetD, 66/06 - CC Decision of the Constitutional Court, 33/07 – ZPNačrt, 57/08 – ZFO-1A, 70/08, 108/09, 108/09 – ZPNačrt-A, 48/12, 57/12, 92/13, 56/15, 102, 15 and 30/16, Slovene: Zakon o varstvu okolja; hereinafter: the ZVO-1).

The Aarhus Convention: National Implementation Report https://www.unece.org/env/pp/reports_trc_implementation_2017.html.

Land Cover Data of Slovenia: <http://rkg.gov.si/GERK/WebViewer/>.

The Nature Conservation Act: Official Gazette of the Republic of Slovenia [Uradni list RS], Nos. 96/04 – official consolidated text, 61/06 – ZDru-1, 8/10 – ZSKZ-B, and 46/14; Slovene: Zakon o ohranjanju narave.

Report on the Environment in the Republic of Slovenia (February 2017): http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/pomembni_dokumenti/porocilo_o_okolju_2017.pdf.

Slovenia Reduces CO₂: [www.slovenija-CO₂.si](http://www.slovenija-CO2.si).

ZUP: the General Administrative Procedure Act: Official Gazette of the Republic of Slovenia [Uradni list RS], Nos. 24/06 – official consolidated text, 105/06 – ZUS-1, 126/07, 65/08, 8/10, and 82/13, Slovene, Zakon o splošnem upravnem postopku.

¹ Reproduced as received from the Party.