

# Slovenia's Second Initial Report under the Kyoto Protocol

Report to facilitate the calculation of the assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period 2013–2020



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## **Introduction**

This report explains the modalities for the accounting of the Slovenian assigned amount under Article 3(7bis), (8) and (8bis) of the Kyoto Protocol for the second commitment period and pursuant to Decision 2/CMP.8 in FCCC/KP/CMP/2012/13/Add.1 taking into account also Council Decision (EU) 2015/1339 which sets out the terms of the joint fulfilment and the respective emission levels for the Union, the Member States and Iceland (Annex I to that Decision).

To facilitate the calculation of the assigned amount for the second commitment period and demonstrate its capacity to account for its emissions and assigned amount, the complete time series of the national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol for all years from 1986 to 2014 is included.



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## 1. Greenhouse gas inventory for the period 1986-2014

A complete inventory on greenhouse gas emission and removals for the period 1986 - 2014 is provided in the Slovenia's National Inventory Report 2016 and the Common Reporting Format tables (CRF tables). They serve as the basis to facilitate the calculation of Slovenia's assigned amount for the second commitment period (2013 – 2020).

The methodologies used in the preparation of Slovenia's greenhouse gas inventory are consistent with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, and the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol.

**In the base year** (1986, 1995 for F-gases) total GHG emissions without LULUCF accounted for **20,327.584** Gg CO<sub>2</sub> eq. The biggest fraction among gases belongs to CO<sub>2</sub> (82.0%), followed by CH<sub>4</sub> with 12.6%, N<sub>2</sub>O with 4.6% and F – gases with 0.9% of GHG emissions. The largest fraction in emissions among the sectors (without LULUCF) belongs to the energy sector (80.6%), agriculture accounts for 9.9% of total GHG emissions, industrial processes and product use for 6.6% and waste for 2.9%.

**In 2014**, total GHG emissions accounted for **16,582.312** Gg CO<sub>2</sub> eq. The biggest fraction among gases belongs to CO<sub>2</sub> (81.4%), followed by CH<sub>4</sub> with 11.9%, N<sub>2</sub>O with 4.6% and F – gases with 2.1% of GHG emissions. The largest fraction in emissions among the sectors (without LULUCF) belongs to the energy sector (79.9%), agriculture accounts for 10.2% of total GHG emissions, industrial processes and product use for 6.8% and waste for 3.0%.

GHG emission trends by gas and by sector are presented in the table 1 and table 2, respectively.

**Table 1: GHG emission trends by gas**

GREENHOUSE GAS EMISSIONS	Base year	1990	1995	2000	2005	2010	2011	2012	2013	2014
	Gg CO <sub>2</sub> equivalent									
CO <sub>2</sub> emissions without net CO <sub>2</sub> from LULUCF	16,663	15,088	15,278	15,460	16,938	16,363	16,348	15,800	15,149	13,490
CO <sub>2</sub> emissions with net CO <sub>2</sub> from LULUCF	12,035	10,858	10,392	7,471	7,766	9,136	9,259	8,824	8,249	6,579
CH <sub>4</sub> emissions without CH <sub>4</sub> from LULUCF	2,556	2,471	2,379	2,459	2,438	2,188	2,182	2,128	2,080	1,979
CH <sub>4</sub> emissions with CH <sub>4</sub> from LULUCF	2,556	2,474	2,380	2,460	2,439	2,188	2,184	2,133	2,081	1,979
N <sub>2</sub> O emissions without N <sub>2</sub> O from LULUCF	933	839	928	1,012	831	776	779	781	752	759
N <sub>2</sub> O emissions with N <sub>2</sub> O from LULUCF	936	843	932	1,016	835	780	783	786	756	763
HFCs	36	NO	36	50	156	264	279	291	302	324
PFCs	128	208	128	130	142	10	20	18	15	15
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SF <sub>6</sub>	12	10	12	15	18	18	18	17	16	16
NF <sub>3</sub>	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Total (without LULUCF)</b>	<b>20,328</b>	<b>18,616</b>	<b>18,761</b>	<b>19,126</b>	<b>20,523</b>	<b>19,619</b>	<b>19,626</b>	<b>19,035</b>	<b>18,314</b>	<b>16,582</b>
<b>Total (with LULUCF)</b>	<b>15,703</b>	<b>14,393</b>	<b>13,880</b>	<b>11,142</b>	<b>11,356</b>	<b>12,396</b>	<b>12,543</b>	<b>12,070</b>	<b>11,419</b>	<b>9,676</b>

**Table 2: GHG emission trends by sector**

GREENHOUSE GAS EMISSIONS	Base year	1990	1995	2000	2005	2010	2011	2012	2013	2014
	Gg CO <sub>2</sub> equivalent									
1. Energy	16,383	14,651	15,146	15,301	16,517	16,331	16,333	15,777	15,037	13,254
2. Industrial processes and product use	1,338	1,390	1,086	1,168	1,425	1,018	1,039	1,043	1,096	1,135
3. Agriculture	2,014	1,931	1,850	1,890	1,782	1,715	1,691	1,670	1,653	1,699
4. Land use, land-use change and forestry	-4,625	-4,224	-4,881	-7,984	-9,166	-7,223	-7,084	-6,966	-6,895	-6,906
5. Waste	592	644	678	767	798	554	564	547	528	494
6. Other	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Total (without LULUCF)</b>	<b>20,328</b>	<b>18,616</b>	<b>18,761</b>	<b>19,126</b>	<b>20,523</b>	<b>19,619</b>	<b>19,626</b>	<b>19,035</b>	<b>18,314</b>	<b>16,582</b>
<b>Total (with LULUCF)</b>	<b>15,703</b>	<b>14,393</b>	<b>13,880</b>	<b>11,142</b>	<b>11,356</b>	<b>12,396</b>	<b>12,543</b>	<b>12,070</b>	<b>11,419</b>	<b>9,676</b>

## **2. The identification of its selected base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride**

In accordance with Article 3.8 of the Kyoto Protocol, Slovenia has chosen the year 1995 as the base for the emissions of the hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>).

## **3. The agreement under Article 4 of the Kyoto Protocol for the second commitment period, where the Party has reached such an agreement to fulfil its commitments under Article 3 of the Kyoto Protocol jointly with other Parties**

The Kyoto Protocol, under Article 4, provides the option for Parties to fulfil their commitments under Article 3 jointly, acting in the framework of and together with a regional economic integration organization.

The targets for the Union, its Member States and Iceland are inscribed in the Doha Amendment with a footnote stating that those targets are based on the understanding that they will be fulfilled jointly, in accordance with Article 4 of the Kyoto Protocol. The Union, its Member States and Iceland also issued a joint statement upon the adoption of the Doha Amendment on 8 December 2012, expressing their intention to fulfil their commitments for the second commitment period jointly. The statement was agreed during an ad hoc meeting of EU Ministers in Doha and endorsed by the Council on 17 December 2012.

With Council Decision (EU) 2015/146 of 26 January 2015 it was approved the signing, on behalf of the European Union, of the agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland's participation in the joint fulfilment of commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol. The European Union, its Member States and Iceland have signed the Agreement necessary for the joint fulfilment of the second commitment period of the Kyoto Protocol on 01 April 2015.

With Council Decision (EU) 2015/1340 of 13 July 2015 the Agreement was approved on behalf of the European Union.



#### **4. The calculation of its assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol**

Pursuant to Article 3(7bis), (8) and (8bis) of the Kyoto Protocol and paragraph 2 of Annex I to document FCCC/SBSTA//2015/L.13, the assigned amount for the second commitment period for the European Union is equal to the percentage inscribed in the third column of Annex B of the Annex to the Doha amendment of the aggregate anthropogenic carbon dioxide equivalent emissions of greenhouse gases in the base year multiplied by eight, taking into account Article 3(7bis) of the Kyoto Protocol and paragraph 2 of the Annex to document FCCC/SBSTA/2015/L.13. This method of calculation is applied to the calculation of the joint assigned amount only. It does not apply to the calculation of the individual assigned amounts for the Union, the Member States individually, or Iceland. Thus, the calculations of the base year emissions do not play a role in the calculation of their individual assigned amounts, which are instead determined pursuant to the joint fulfilment agreement.

The proposal for Slovenia's emission level in terms of tonnes of carbon dioxide equivalent pursuant to Article 3(7bis), (8) and (8bis) of the Kyoto Protocol, taking into account the methodologies for estimating anthropogenic emissions by sources and removals by sinks referred to in Article 5(2) of the Kyoto Protocol and the modalities of assigned amount pursuant to Article 3(7bis), (8) and (8bis) of the Kyoto Protocol, as well as the agreement under Article 4 that implement the joint fulfilment of commitments of the European Union, as stated in the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change, is equal to **99,425,782** tonnes of CO<sub>2</sub> equivalent. Land-use change and forestry does not constitute a net source of greenhouse gas emissions in the base year.

As was the case for the first commitment period, the joint assigned amount units will not be issued separately but instead the assigned amounts of each member of the joint fulfilment agreement are recorded in the compilation and accounting database and the EU and each of the Member States and Iceland can issue their respective assigned amount units in their respective registries.

#### **5. The calculation of commitment period reserve**

Parties are required by decision 11/CMP.1 under the Kyoto Protocol and paragraph 18 of Decision 1/CMP.8 to establish and maintain a commitment period reserve as part of their responsibility to manage and account for their assigned amount. The commitment period reserve equals the lower of either 90% of a Party's assigned amount pursuant to Article 3(7bis), (8) and (8bis) or 100% of its most recently reviewed inventory, multiplied by 8.

For the purposes of the joint fulfilment, the commitment period reserve applies to the EU, its Member States and Iceland individually.

The national commitment period reserve is calculated in accordance with paragraph 6 of the Annex to decision 11/CMP.1 as 90% of the proposed assigned amount or 100% of eight times its most recently reviewed inventory, whichever is the lowest. The Slovenian commitment period reserve is calculated either as:

99,425,782 t CO<sub>2</sub> equivalent \* 0.9 = 89,483,204 t CO<sub>2</sub> equivalent

or:

16,582,314 t CO<sub>2</sub> equivalent (emission level 2014) \* 8 = 132,658,495 t CO<sub>2</sub> equivalent

Slovenia has interpreted the ‘most recently reviewed inventory’ as the year 2014, which will be reviewed by October 2016. The Slovenian commitment period reserve is therefore 89,483,204 t CO<sub>2</sub> equivalent.

**Table 3: Slovenia’s emission level and commitment period reserve**

Assigned amount for the second commitment period (t CO <sub>2</sub> eq)	90 % of assigned amount (t CO <sub>2</sub> eq)	100% of most recently reviewed inventory multiplied by 8 (t CO <sub>2</sub> eq)	Commitment period reserve (t CO <sub>2</sub> eq)	Article 3.7
<b>99,425,782</b>	<b>89,483,204</b>	<b>132,658,495</b>	<b>89,483,204</b>	<b>Does not apply</b>

#### **6. Difference between the assigned amount for the second commitment period and the average emissions for the first three years of the preceding commitment period**

According to Article 3(7ter) of the Doha Amendment of the Kyoto Protocol, any positive difference between the assigned amount of the second commitment period and the average annual emissions for the first three years of the preceding commitment period multiplied by eight shall be transferred to the cancellation account.

In line with the terms of the joint fulfilment of the European Union, its Member States and Iceland under Article 3 of the Kyoto Protocol, Article 3(7ter) is applied to the joint assigned amount of the second commitment period.

#### **7. Application of paragraphs 23 – 26 of decision 1/CMP.8**

According to decision 1/CMP.8, paragraph 23, each Party included in Annex I with a commitment inscribed in the third column of Annex B as contained in annex I to this decision shall establish a previous period surplus reserve (PPSR) account in its national registry. Based on this provision, the European Union, each Member State and Iceland will establish previous period surplus reserve accounts in their respective registries.

According to decision 1/CMP.8, paragraph 24, where the emissions of a Party referred to in paragraph 23 above in a commitment period are less than its assigned amount under Article 3, the difference shall, on request of that Party, be carried over to the subsequent commitment period, as follows:

- (a) Any ERUs or CERs held in that Party’s national registry that have not been retired for that commitment period or cancelled may be carried over to the subsequent commitment period, up to a maximum for each unit type of 2.5 per cent of the assigned amount calculated pursuant to Article 3(7) and (8);
- (b) Any AAUs held in that Party’s national registry that have not been retired for that commitment period or cancelled shall be added to the assigned amount for that Party for the

second commitment period. That part of a Party's assigned amount consisting of AAUs held in that Party's national registry that has not been retired for that commitment period or cancelled shall be transferred to its previous period surplus reserve account for the subsequent commitment period, to be established in its national registry;

Based on this provision, the European Union, each Member State and Iceland will carry over any remaining ERUs, CERs or AAUs that have not been retired or cancelled for the first commitment period in their respective registries to their respective previous period surplus reserve accounts. The 2.5 per cent limit in paragraph 24 (a) of decision 1/CMP.8 will be calculated based on the assigned amounts of the Member States, Iceland and the European Union calculated pursuant to Article 3(7) and (8) for the first commitment period.

According to decision 1/CMP.8, paragraph 25, units in a Party's previous period surplus reserve account may be used for retirement during the additional period for fulfilling commitments of the second commitment period up to the extent by which emissions during the second commitment period exceed the assigned amount for that commitment period, as defined in Article 3(7 bis), (8) and (8 bis), of the Kyoto Protocol. This provision will be applied to the European Union, its Member States and Iceland individually due to the fact that the previous period surplus reserve accounts will be established in the Kyoto registries of the European Union, its Member States and Iceland. Units in a member's Previous Period Surplus Reserve account may be used for retirement during the additional period for fulfilling commitments of the second commitment period, up to the extent by which that member's emissions during the second commitment period exceed its respective assigned amount for that commitment period.

According to decision 1/CMP.8, paragraph 26, units may be transferred and acquired between previous period surplus reserve accounts. This provision will be applied to the European Union, its Member States and Iceland individually due to the fact that the previous period surplus reserve accounts will be established in the Kyoto registries of the European Union, its Member States and Iceland.

## **8. Application and calculation pursuant to paragraph 13 in the annex of decision 2/CMP.7**

According to paragraph 13 in the annex of decision 2/CMP.7 for the second commitment period, additions to the assigned amount of a Party resulting from forest management under Article 3(4), and from forest management project activities undertaken under Article 6, shall not exceed 3.5 per cent of the base year greenhouse gas emissions excluding land use, land-use change and forestry pursuant to Article 3(7) and (8), or any amendments thereto, times the duration of the commitment period in years. Similar to the general accounting of emissions and removals under Article 3(3) and (4), Member States and Iceland will apply this provision individually. The maximum accountable quantities resulting from forest management that can be added to the assigned amounts to Slovenia is presented in Table 4.

**Table 4: Maximum accountable quantities resulting from forest management under Article 3, paragraph 4 in the second commitment period**

Forest management cap for the second commitment period (t CO <sub>2</sub> eq.)	<b>5,691,723</b>
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## **9. Forest definition and thresholds parameters to be used for reporting under Article 3, paragraphs 3 and 4 of Kyoto Protocol**

Slovenia has selected the forest definition, since it has chosen to account for forest management under the elective activities of Article 3, paragraph 4 of the Kyoto Protocol. Therefore, according to the decision 2/CMP.8 the definition for reporting under Article 3.4 shall remain the same for the second commitment period.

Parameter	Range	Selected value
Minimum area for forest land area	0.05-1 ha	<b>0.25 ha</b>
Minimum value for tree crown cover	10-30 %	<b>30 %</b>
Minimum tree height	2-5 m	<b>2 m</b>

## **10. Election of activities under Article 3, paragraph 4, for accounting in the second commitment period**

Article 3(4) of the Kyoto Protocol provides the option to include the activities forest management, cropland management, grazing land management and revegetation in the accounting of the commitments for the first commitment period. In the second commitment period all Parties included in Annex I have to account for anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from any activity under Article 3(4) already elected in the first commitment period, and for forest management (Decision 2/CMP 7, Annex, Paragraph 7). In addition, they may also choose to elect further activities from the ones above for inclusion in its accounting for the second commitment period as well as wetland drainage and rewetting can be chosen as an additional activity. In the second commitment period, accounting for forest management is mandatory for all Parties included in Annex I.

Slovenia has chosen to use activities under Article 3.4, Forest Management, for compiling with its commitment under the period 2013-2020 of the Kyoto Protocol in accordance with the Annex to the Decision 16/CMP.1. However, Slovenia has decided not to elect for other activities under Article 3.4.

## **11. Identification of the period for accounting activities under Article 3 (3) and (4)**

Slovenia has chosen to account for emissions and removals from the LULUCF for the entire commitment period at the end of the commitment period.

## **12. Slovenia's Forest Management Reference Level as inscribed in the appendix to the annex to decision 2/CMP.7**

According to the Decision 2/CMP.7 anthropogenic greenhouse gas emissions by sources and sinks, resulting from Forest Management under Article 3.4, shall be accounted against the Forest Management Reference Levels (FMRL) for the second commitment period of the Kyoto Protocol.

Slovenia reported a FMRL of -3,171 Gg CO<sub>2</sub> eq per year (including harvested wood products) in 2011 as requested by the Cancún decisions. The reported value is average of the projected FM data series for the period 2013-2020, taking account of policies implemented before the end of 2009. In the construction of the forest management reference level, the elements contained in footnote 1 of paragraph 4 of the decision ([-/CMP.6]) on LULUCF were taken into account.

Since there has been methodological and data changes for Forest Management, Slovenia will make technical corrections for the FMRL according to requirements of decisions 2/CMP.7 and 2/CMP.8 and in line with the 2013 Revised Supplementary Methods and GPG arising from the Kyoto Protocol. Currently, data are collected for testing new approach of FMRL construction. Moreover, it is expected that next forest inventory at national level will be launched in the near future. The latter shall provide input forest data enabling Slovenia to construct new FMRL and make technical correction.

Information on technical corrections and methodological consistency will be reported as part of the annual greenhouse gas inventory and inventory report, in accordance with relevant decisions under Articles 5 and 7 of the Kyoto Protocol, and reviewed as part of the review of the annual greenhouse gas inventory review in accordance with relevant decisions under Article 8 of the Kyoto Protocol.

### **13. Information on how emissions from harvested wood products originating from forests prior to the start of the second commitment period have been calculated in the reference level**

The emissions from harvested wood products (HWP) until the second commitment period have been calculated using a revised FOD ("first order decay") method according to IPCC GL (2006) and Pingoud and Wagner (2006). The calculation of net emissions follows recommended method as outlined in IPCC 2006, Vol.4, Ch. 12 (Equation 12.1). The estimation uses the product categories, half-lives and methodologies as suggested in paragraph 27, page 31 of FCCC/KP/AWG/2010/CRP.4/Rev.4.

Since there has been methodological and data changes for HWP, Slovenia will make technical corrections for the FMRL according to requirements of decisions 2/CMP.7 and 2/CMP.8 and in line with the 2013 Revised Supplementary Methods and GPG arising from the Kyoto Protocol. New HWP data will be part of the approach already tested and taken into account in the revised FMRL.

Information on technical corrections and methodological consistency will be reported as part of the annual greenhouse gas inventory and inventory report, in accordance with relevant decisions under Articles 5 and 7 of the Kyoto Protocol, and reviewed as part of the review of the annual greenhouse gas inventory review in accordance with relevant decisions under Article 8 of the Kyoto Protocol.

### **14. Information on natural disturbances for the accounting for afforestation and reforestation under Article 3.3 of the Kyoto Protocol and/or forest management under Article 3.4 of the Kyoto Protocol**

Slovenia does not intend to use the provision to exclude emissions caused by natural disturbances during the second commitment period of the Kyoto Protocol.

**15. A description of its national system in accordance with Article 5, paragraph 1, of the Kyoto Protocol**

Description of the national inventory system is provided in detail in the Slovenia's 6<sup>th</sup> National Communication Report under the UNFCCC. The last update on the national system taking into account all relevant latest changes regarding the system is provided in the annual submission 2016 of the National Inventory Report.

**16. A description of its national registry**

Description of the national registry is provided in detail in the Slovenia's 6<sup>th</sup> National Communication Report under the UNFCCC. The last update on the national system taking into account all relevant latest changes regarding the registry is provided in the annual submission 2016 of the National Inventory Report.