

Netherlands' report to facilitate the calculation of the assigned amount

Netherlands' 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 and to demonstrate the capacity of the Party with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B to account for its emissions and assigned amounts

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Introduction

The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its eighth session, held in Doha, December 2012, decided (Decision 2/CMP.8, para 2 and 3)

- that each Party with a quantified emission limitation and reduction commitment inscribed in the third column of Annex B to the Kyoto Protocol, as contained in annex I to decision 1/CMP.8, shall submit to the secretariat, by 15 April 2015, a report to facilitate the calculation of its assigned amount pursuant to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period and to demonstrate its capacity to account for its emissions and assigned amount (hereinafter referred to as the report to facilitate the calculation of the assigned amount); and
- Also decides that for the second commitment period, the report to facilitate the calculation of the assigned amount shall include the information specified in annex I to this decision;

This report provides the information as specified in Annex I to Decision 2/CMP.8.

This report also includes the information in line with the Decision the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol took on its eleventh session, held in Paris, December 2015, more specific

- Decision 2/CMP.11: Clarification of the text in section G (Article 3, paragraph 7 ter) of the Doha Amendment to the Kyoto Protocol; and
- Decision 3/CMP.11: Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part I: implications related to accounting and reporting and other related issues.

A. Complete inventories of emissions and removals of greenhouse gases

We refer to the Dutch 2016 GHG inventory, that is submitted in conjunction.

B. Identification of selected base years

The base year for carbon dioxide (CO₂), methane (CH₄) and Nitrous oxide (N₂O) will be 1990 and for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride the base year will be 1995. These are the same base years as in the first commitment period.

The Netherlands selected 1995 as base year for nitrogen trifluoride (NF₃).

C. Joint fulfilment

For the second commitment period, upon adoption of the Doha amendment to the Kyoto Protocol, the European Union, its Member States and Iceland stated that the European Union and its 28 Member States again intend to fulfil their reduction targets under the second commitment period jointly (declaration made in footnotes 4, 6 and 8 to Annex B of the Doha Amendment).

The European Union ratification decision (Council Decision (EU) 2015/1339 of 13 July 2015) sets out the terms of the joint fulfilment between the Union and its Member States and Iceland.

The emission level for The Netherlands cover the emissions from sectors and gases listed in Annex A to the Kyoto Protocol not covered by Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC.¹

This includes all emissions from sources and removals by sinks covered by Article 3(3) and (4) of the Protocol as well as all emissions of nitrogen trifluoride (NF₃) under the Kyoto Protocol.

In Annex I to this decision, point 3 (Respective emission levels allocated to the members to the agreement) it is specified that:

- a) The assigned amounts of the members shall be equal to their respective emission levels;
- b) The emission level of The Netherlands (before application of Article 3(7bis)) in terms of tonnes of carbon dioxide equivalent for the second commitment period of the Kyoto Protocol are (as included in Table 1): 919,963,374

¹Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC covers emissions of greenhouse gases listed in Annex A to the Kyoto Protocol that are covered by the EU Emissions Trading System (EU ETS)

In Annex I to this decision, point 2 (Joint fulfilment of the commitments under Article 3 of the Kyoto Protocol for the second commitment period of the Kyoto Protocol) is it clarified that: if land use, land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 for any Member State or Iceland, the relevant member shall, pursuant to Article 3(7bis) of the Kyoto Protocol, include in its emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in the base year or period from land use, land-use change and forestry for the purpose of calculating the joint assigned amount of the members determined in accordance with Article 3 (7bis), (8) and (8bis) of the Kyoto Protocol. This is the case for The Netherlands. More information on this is provided below under (d) calculation of the assigned amount.

D. Calculation of the assigned amount

	tonnes of carbon dioxide equivalent	tonnes of carbon dioxide equivalent
A. Emission level allocated to The Netherlands		919,963,374
B. All emissions by sources minus removals by sinks reported in relation to deforestation *8 (year)*0,8 (equal to 20% reduction)		4,814,528
All emissions by sources minus removals by sinks reported in relation to deforestation	752,270	
a) The change from forest land to other land, 1990	763,675	
b) Estimated net CO2 emissions related to deforestation 1971-1989	-11,404	
C. Total Assigned Amount (A+B)		924 777 902

A. Emission level allocated to The Netherlands

Pursuant to Annex I to Decision 3/CMP.11, section I, B para 2 those Parties that have reached an agreement in accordance with Article 4 to fulfil their commitments under Article 3 jointly shall use the respective emission level allocated to each of the Parties in that agreement instead of the percentage inscribed for it in the third column of Annex B.

This emission level is for The Netherlands 919,963,374 tonnes of carbon dioxide equivalent (as presented ahead in section C).

B. All emissions by sources minus removals by sinks reported in relation to deforestation

Land-use change and forestry (all emissions by sources and removals by sinks under category 4 as contained in the common reporting format tables) constituted *a net source* of greenhouse gas emissions in the base year (1990). The reported emissions are 6,081,030 tonnes of carbon dioxide equivalent.

All emissions by sources minus removals by sinks reported in relation to the conversion of forests (deforestation) in the base year (1990) are 752,270 tonnes of carbon dioxide equivalent and are estimated as follows.

- a. The change from forest land to other land for the year 1990

The change from forest land to other land as reported in the CRF Tables 4B-4F and separate estimate for forest land converted to wetlands for the year 1990 are 763,675 tonnes of CO₂ (see Table 1)

Table 1: Net emissions from forest land converted to other land-uses in 1990

Land-use category	Net CO ₂ emissions/ removals (kt)
4B 2.1 Forest land converted to cropland	37.558
4C 2.1 Forest land converted to grassland	411.326
Forest land converted to wetlands*	44.899
4E 2.1 Forest land converted to settlements	249.386
4F 2.1 Forest land converted to other land	20.506
Total	763.675

*CRF table 4E does not provide a specification of emissions and removals from forest land converted to wetland, this is calculated separately, see table 2.

CRF table 4E does not provide a specification of emissions and removals from forest land converted to wetland, so these had to be estimated based on CRF table 4.1, Land transition matrix, which provides the area of forest land converted to wetland for the year 1990. The emissions and removals from forest land converted to wetland are calculated based on outputs from the Dutch LULUCF model. The specification of the calculated emissions for the year 1990 is presented in table 2.

Table 2: CO₂ emissions for Forest land converted to wetlands, 1990

CHANGES IN CARBON STOCK AND NET CO ₂ EMISSIONS/REMOVALS FROM SOILS							Net CO ₂ emissions/ removals
	Carbon stock change in living biomass				Net carbon stock change in soils		
	(kt C)						(kt)
	Gains	Losses	Net change	Net CSC in dead organic matter	Mineral soils	Organic soils	
Forest land converted to wetlands	0.00	-8.49	-8.49	-3.76	0.00	NO	44.899

- b. Estimated net CO₂ emissions relation to deforestation 1971-1989

Inherited emissions and removals from land deforested in the period 1971-1989 are not reported in the CRF and are estimated to be a net emission of -11,404 tonnes of CO₂ (for 19 years).

In the calculation of deforestation in the base year 1990 as reported in the CRF no inherited emissions and removals from land deforested in the period 1971-1989 (20 year conversion period) were included. This is due to the fact that no reliable source of land-use is available that is directly

comparable to the 1990 land-use map. Because neglecting the inherited removals to mineral soils (for 19 years as the 1990 emissions/removals for soil is already included in the CRF tables 1990) may potentially result in an overestimation of the emissions for Deforestation in the base year, the inherited emissions and removals from mineral soils were estimated. This was done on the basis of the actual emissions and removals as reported for the period 1990-2004 (in 2004 a new land use map is available). These are considered to reflect the emissions and removals under the assumption that the rate and type of deforestation as calculated for the period 1990-2004 is representative for the period 1971-1990. This results in a net emission of -11,404 tonnes of CO₂ (for 19 years) based on a yearly net removal of 0.164 ktC in mineral soils (see table 3) .

Table 3: Estimated Inherited carbon stock changes (CSC) and net CO₂ emissions from mineral soil on land converted to Cropland, Grassland, Wetland, Settlement, Other land during the period 1971-1989²

Land-use category	Yearly CSC (ktC)	19 years CSC (ktC)	19 years net CO ₂ emissions (kt)
4B 2.1 Forest land converted to cropland	-0.010	-0.194	0.711
4C 2.1 Forest land converted to grassland	0.631	11.989	-43.959
4D 2.1 Forest land converted to wetlands	NO	NO	NO
4E 2.1 Forest land converted to settlements	-0.313	-5.942	21.788
4F 2.1 Forest land converted to other land	-0.144	-2.742	10.0550.00
Total	0.164	3.110	-11.404

C. Total Assigned Amount

The emission level allocated to The Netherlands of 919,963,374 tonnes of carbon dioxide equivalent plus 4 814 528 (752,270*8*0.8) tonnes of carbon dioxide equivalent all emissions by sources minus removals by sinks reported in relation to the conversion of forests (deforestation) results in a total of **924 777 902** tonnes of carbon dioxide equivalent as the assigned amount.

E. Calculation of commitment period reserve

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 calculations of the commitment period reserve for The Netherlands are follows.

Method 1: 90 % of assigned amount results in:

$0.90 * 924\,777\,902 = 832\,300\,112$ tonnes of carbon dioxide equivalent

² The emissions for mineral soils for the year 1990 are included in the CRF file

Method 2: 100% of most recently reviewed inventory, taken the 2016 submission as the most recently reviewed inventory, multiplied by 8 results in:

$222,182,482 * 8 = 1,777,459,856$ tonnes of carbon dioxide equivalent

The commitment period reserve consequently amount to **832 300 112** tonnes of carbon dioxide equivalent.

F. Identification of single minimum values under Article 3(3) and 3(4) of the KP

As The Netherlands selected already a definition of forest for the first commitment period, this definition shall be the same.

The complete forest definition the Netherlands uses for Kyoto reporting is: "Forest is land with woody vegetation and with tree crown cover of more than 20% and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ. They may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground, or open forest formations with a continuous vegetation cover in which tree crown cover exceeds 20%. Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 20% or tree height of 5 m are included under forest as areas normally forming part of the forest area which are temporally unstocked as a result of human intervention or natural causes but which are expected to revert to forest. Forest land also includes:

- forest nurseries and seed orchards that constitute an integral part of the forest;
- roads, cleared tracts, firebreaks and other small open areas, all narrower than 6 m, within the forest;
- forests in national parks, nature reserves and other protected areas, such as those of special environmental, scientific, historical, cultural or spiritual interest, with an area of more than 0.5 ha and a width of more than 30 m;
- windbreaks and shelter belts of trees with an area of more than 0.5 ha and a width of more than 30 m.

This excludes tree stands in agricultural production systems; for example, in fruit plantations and agro-forestry systems."

G. The identification of election of additional activities under article 3(4) of the KP for inclusion in the accounting for the second commitment period

The Netherlands did not elect any activity under Article 3, paragraph 4 of the Kyoto Protocol for the first commitment period.

The Netherlands does not elect any activity under Article 3, paragraph 4 of the Kyoto Protocol for the second commitment period, taken into consideration that forest management is an obligatory activity.

H. Accounting annually or for the entire commitment period for activities under Article 3(3) and 3(4) of the KP

The Netherlands will account for the entire second commitment period for activities under Article 3, paragraphs 3 and 4 of the Kyoto Protocol

I. Information on Forest Management Reference Level

The “Submission of information on forest management reference levels by the Netherlands” of 20 April 2011, which is published at <https://unfccc.int/bodies/awg-kp/items/5896.php> holds the information of the FMRL as original submitted.

After a correction in the calculation matrix of the used HWP model, changes in the submission of information on forest management reference levels by the Netherlands were communicated on 20 May 2011. This is published at https://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_netherlands_corr.pdf. This correction holds updated values of the proposed reference levels.

During the subsequent technical assessment of the submission mentioned above, the expert review team noticed discrepancies in area data used by the models. Based on this The Netherlands rerun the models with updated area data. This resulted in a revised FMRL of $-1.464 \text{ Mt CO}_2 \text{ eq. per year}$ (average 2013–2020) assuming instantaneous oxidation of HWP and a revised FMRL of $-1.425 \text{ Mt CO}_2 \text{ eq. per year}$ applying a first-order decay function for HWP. These numbers are included in the “Report of the technical assessment of the forest management reference level submission of the Netherlands submitted in 2011”, FCCC/TAR/2011/NLD, 19 September 2011 and published at <http://unfccc.int/resource/docs/2011/tar/nld01.pdf>

These numbers are also included for The Netherlands in the Annex to Decision 2/CMP.7.

No technical corrections are incorporated in the NIR 2016.

J. Information on Harvested Wood Products

As reported in the “Submission of information on forest management reference levels by the Netherlands” correction, the contribution of harvested wood products (HWP) to the reference level of the Netherlands amounts to 0,039 Mt CO₂. It was calculated using the C-HWP-Model, which estimates delayed emissions on the basis of the annual stock change of semi-finished wood products as outlined in the 2006 GL (Rüter, 2011). The estimation uses the product categories, half lives and methodologies as suggested in para 27, page 31 of FCCC/KP/AWG/2010/CRP.4/Rev.4. The activity data (production and trade of sawnwood, wood based panels and paper and paperboard) is derived from the TIMBER database (UNECE 2011) (time series 1964-2009). In order to achieve accurate results, the HWP numbers have been calculated applying the sub-categories of sawnwood, wood based panels and paper and paperboard. Sawnwood includes the Items 1632 and 1633, wood based panels comprising of Items 1634, 1640, 1646, 1647, 1648, 1649 and 1650, and paper and paperboard corresponds to Item 1876.

More information is available in Annex A, section harvested wood products.

K. Information on exclusion of emissions from natural disturbances

The Netherlands intends to apply the provisions to exclude emissions from natural disturbances for the accounting for afforestation and reforestation under Article 3, paragraph 3, of the Kyoto Protocol and/or forest management under Article 3, paragraph 4, of the Kyoto Protocol during the second commitment period.

In the “Submission of information on forest management reference levels by the Netherlands” information is presented on how the background level of emissions associated with annual natural disturbances have been included in the forest management reference level. At present the background level of background emission levels plus margin are estimate to be for Forest Management 4.38 Gg and for Afforestation 0.012 Gg. Research is ongoing to improve the methods to ensure that the necessary data can be provided in case the provisions to exclude emissions from natural disturbances for the accounting would be applied.

L. Description of the National System

As The Netherlands already had a quantified emission limitation and reduction target in the first commitment period, a description is not required.

For change(s) to the National System we refer to the National Inventory Report 2016 (chapter 13).

M. Description of the National Registry

As The Netherlands already had a quantified emission limitation and reduction target in the first commitment period, a description is not required.

For change(s) of the National Registry we refer to the National Inventory Report 2016 (chapter 14).

N. The calculation of the difference between the assigned amount for the second commitment period and average annual emissions for the first three years of the preceding commitment period multiplied by eight

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. So no specific information for the Netherlands is to be reported.

For the joint the calculation of the average annual emissions for the first three years of the preceding commitment period is used “the gases and sources listed in Annex A to the Kyoto Protocol”.

ANNEX A Submission of information on forest management reference levels by the Netherlands and the technical assessment report

This Annex holds the information as requested by Annex I to Decision 2/CMP.8 para 1 (i) footnote 1

A.1: "Submission of information on forest management reference levels by The Netherlands" of 20 April 2011, which is published at <https://unfccc.int/bodies/awg-kp/items/5896.php>

A.2 : The correction to the submission of information on forest management reference levels by The Netherlands", as communicated 20 May 2011, which is published at https://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_netherlands_corr.pdf

A.3: The "Report of the technical assessment of the forest management reference level submission of the Netherlands submitted in 2011", FCCC/TAR/2011/NLD, 19 September 2011 and published at <http://unfccc.int/resource/docs/2011/tar/nld01.pdf>