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National communications and greenhouse gas inventory data from

Parties included in Annex I to the Convention

Report on national greenhouse gas inventory data from Parties included in

Annex I to the Convention for the period 1990–2007

National greenhouse gas inventory data for the period 1990–2007

Note by the secretariat**

Summary

In 2009, all 41 Annex I Parties included in Annex I to the Convention (Annex I Parties) submitted their greenhouse gas (GHG) inventory common reporting format tables, 34 of them by the deadline of 15 April; all 41 Parties provided a national inventory report, 30 of them by the deadline.

Between 1990 and 2007, total aggregate GHG emissions excluding emissions/removals from land use, land-use change and forestry (LULUCF) for all Annex I Parties decreased by 3.9 per cent; GHG emissions/removals including LULUCF decreased by 5.2 per cent. For Annex I Parties with economies in transition (Annex I EIT Parties), GHG emissions excluding LULUCF decreased by 37.0 per cent; GHG emissions including LULUCF decreased by 42.2 per cent. For Annex I non-EIT Parties, GHG emissions excluding LULUCF increased by 11.2 per cent and GHG emissions including LULUCF increased by 12.8 per cent.

* Exact dates within the sessional period are subject to confirmation.

** This document was submitted after the due date in order to take into account the latest submissions from Parties.

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I. Introduction

A. Mandate

1. The Conference of the Parties (COP), by its decisions 9/CP.2, 3/CP.5 and 18/CP.8, requested that Parties included in Annex I to the Convention (Annex I Parties) submit national inventory data on greenhouse gas (GHG) emissions by sources and removals by sinks by 15 April each year. Under the UNFCCC “Guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention” adopted by the COP in decision 19/CP.8, the secretariat is requested¹ to prepare annually a report on GHG inventory data submitted by Annex I Parties for consideration by the COP and the Subsidiary Body for Implementation (SBI).

B. Scope of the note

2. Information provided in this document is based on the GHG inventories from Annex I Parties received by the secretariat by 15 September 2009. This document shows the status of reporting of GHG inventories by Annex I Parties in 2009 (chapter II) and provides a summary of the latest available data on GHG submissions and removals from Annex I Parties for the period 1990–2007 (chapter III).

3. Data are provided for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), as well as for hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) taken together. Data are also provided for total² aggregate³ GHG emissions, both including and excluding net GHG emissions/removals from land use, land-use change and forestry (LULUCF).

C. Possible action by the Subsidiary Body for Implementation

4. The SBI may wish to take note of the information contained in this document and seek further guidance from the COP, as appropriate.

II. Status of reporting

A. Timeliness and completeness of submissions

5. In accordance with the UNFCCC reporting guidelines on annual inventories,⁴ Annex I Parties are required to submit annually a national inventory report (NIR) and common reporting format (CRF) tables containing data from the base year up to two years before the year of submission, that is, from 1990 up to 2007 in the 2009 submission.

6. Table 1 presents the status of reporting of GHG inventory submissions for 2009. All 41 Annex I Parties provided CRF tables, generated using CRF Reporter software, for all years from 1990⁵ to 2007, as well as NIRs. Thirty-four sets of CRF tables and 30 NIRs were received by the due date of 15 April.

¹ FCCC/CP/2002/8, annex II, paragraphs 42 and 43.

² The term ‘total’ implies that emissions from sectors of the common reporting format are summed; the inclusion of land use, land-use change and forestry into the sum is indicated separately.

³ The term ‘aggregate’ implies that GHG emissions/removals are calculated as a weighted sum of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆; the sum is made using the global warming potentials agreed under the Convention (1 for CO₂, 21 for CH₄, 310 for N₂O, and specific values for individual HFCs, PFCs and SF₆).

⁴ “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories”.

⁵ The Parties that may use a base year other than 1990, as stipulated in decisions 9/CP.2 and 11/CP.4, have also provided data for their respective base years. These Parties and their base years are Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

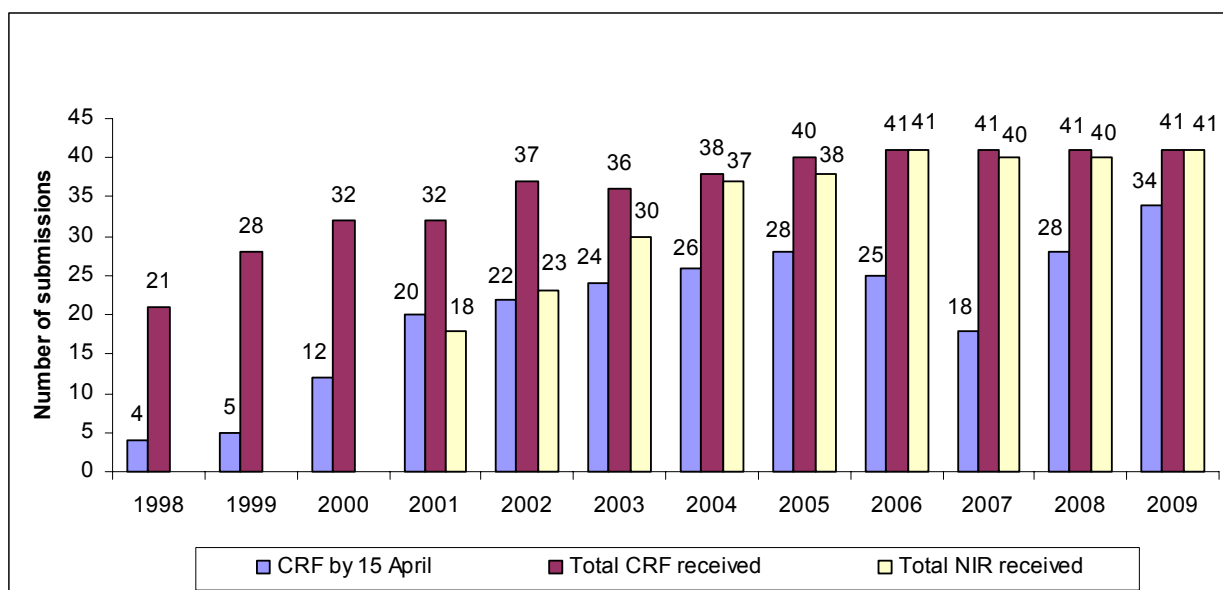
Table 1. Greenhouse gas inventory submissions from Annex I Parties in 2009

Party	CRF submission date ^a	Years reported
Australia	<i>26 May 2009</i>	1990–2007
Austria	15 April 2009	1990–2007
Belarus	15 April 2009	1990–2007
Belgium	15 April 2009	1990–2007
Bulgaria	13 April 2009	1988–2007
Canada	<i>17 April 2009</i>	1990–2007
Croatia	<i>26 May 2009</i>	1990–2007
Czech Republic	14 April 2009	1990–2007
Denmark	15 April 2009	1990–2007
Estonia	15 April 2009	1990–2007
European Community	15 April 2009	1990–2007
Finland	8 April 2009	1990–2007
France	6 April 2009	1990–2007
Germany	8 April 2009	1990–2007
Greece	14 April 2009	1990–2007
Hungary	15 April 2009	Average of 1985–1987, 1985–2007
Iceland	<i>27 April 2009</i>	1990–2007
Ireland	9 April 2009	1990–2007
Italy	15 April 2009	1990–2007
Japan	<i>30 April 2009</i>	1990–2007
Latvia	15 April 2009	1990–2007
Liechtenstein	2 April 2009	1990–2007
Lithuania	9 April 2009	1990–2007
Luxembourg	<i>19 May 2009</i>	1990–2007
Monaco	9 April 2009	1990–2007
Netherlands	15 April 2009	1990–2007
New Zealand	15 April 2009	1990–2007
Norway	15 April 2009	1990–2007
Poland	15 April 2009	1988–2007
Portugal	15 April 2009	1990–2007
Romania	13 April 2009	1989–2007
Russian Federation	15 April 2009	1990–2007
Slovakia	14 April 2009	1990–2007
Slovenia	15 April 2009	1986–2007
Spain	14 April 2009	1990–2007
Sweden	7 April 2009	1990–2007
Switzerland	15 April 2009	1990–2007
Turkey	13 April 2009	1990–2007
Ukraine	<i>25 May 2009</i>	1990–2007
United Kingdom	15 April 2009	1990–2007
United States	13 April 2009	1990–2007

Abbreviation: CRF = common reporting format.

^a The date of submission of the national inventory report may be different. Dates after the submission deadline of 15 April 2009 are shown in italics.

7. After the initial submissions, five Parties sent a revised version of their CRF tables to include improvements made to the GHG estimates, and nine Parties resubmitted their NIR.
8. All Parties submitted their CRF tables within six weeks after the submission deadline. Two Parties (Luxembourg and Turkey) submitted their NIR more than six weeks late.
9. Figure 1 displays the number of national inventory submissions from Annex I Parties since 1998. It shows an almost continuous increase in the number of submissions. Since 2006, all Annex I Parties have submitted their CRF tables annually.

Figure 1. Greenhouse gas inventory submissions from Annex I Parties, 1998–2009

Abbreviations: CRF = common reporting format, NIR = national inventory report.

B. Recalculations

10. In accordance with the UNFCCC reporting guidelines, Parties should conduct recalculations, when necessary, in order to improve the quality of emission estimates and ensure the consistency of the time series. All 41 Parties performed recalculations in 2009 reflecting changes in activity data, emission factors and methodologies used.

11. The impact of recalculation on GHG emissions in the base year varied widely (table 2). For total aggregate emissions excluding LULUCF, the change was less than 1 per cent for 37 Parties and more than 2 per cent for one Party. For total aggregate GHG emissions including LULUCF, the change was less than 1 per cent for 21 Parties and more than 3 per cent for nine Parties.

III. Overview of emission trends and sources in Annex I Parties

A. Total aggregate greenhouse gas emissions

12. From 1990⁶ to 2007, the total aggregate GHG emissions excluding emissions/removals from LULUCF for all Annex I Parties decreased by 3.9 per cent, from 18,848.0 to 18,112.1 Tg⁷ CO₂ equivalent (figures 2 and 3). Total aggregate emissions including LULUCF decreased by 5.2 per cent from 17,459.6 to 16,547.1 Tg CO₂ equivalent. Between 2000 and 2007, GHG emissions from Annex I Parties increased by 3.1 per cent (excluding LULUCF) and by 0.9 per cent (including LULUCF). From 2006 to 2007, emissions excluding LULUCF increased by 0.9 per cent and emissions including LULUCF increased by 1.4 per cent.

⁶ Unless otherwise specified, base year data are used in totals instead of 1990 data (in accordance with decisions 9/CP.2 and 11/CP.4) for Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

⁷ One teragram (Tg) equals one million tonnes.

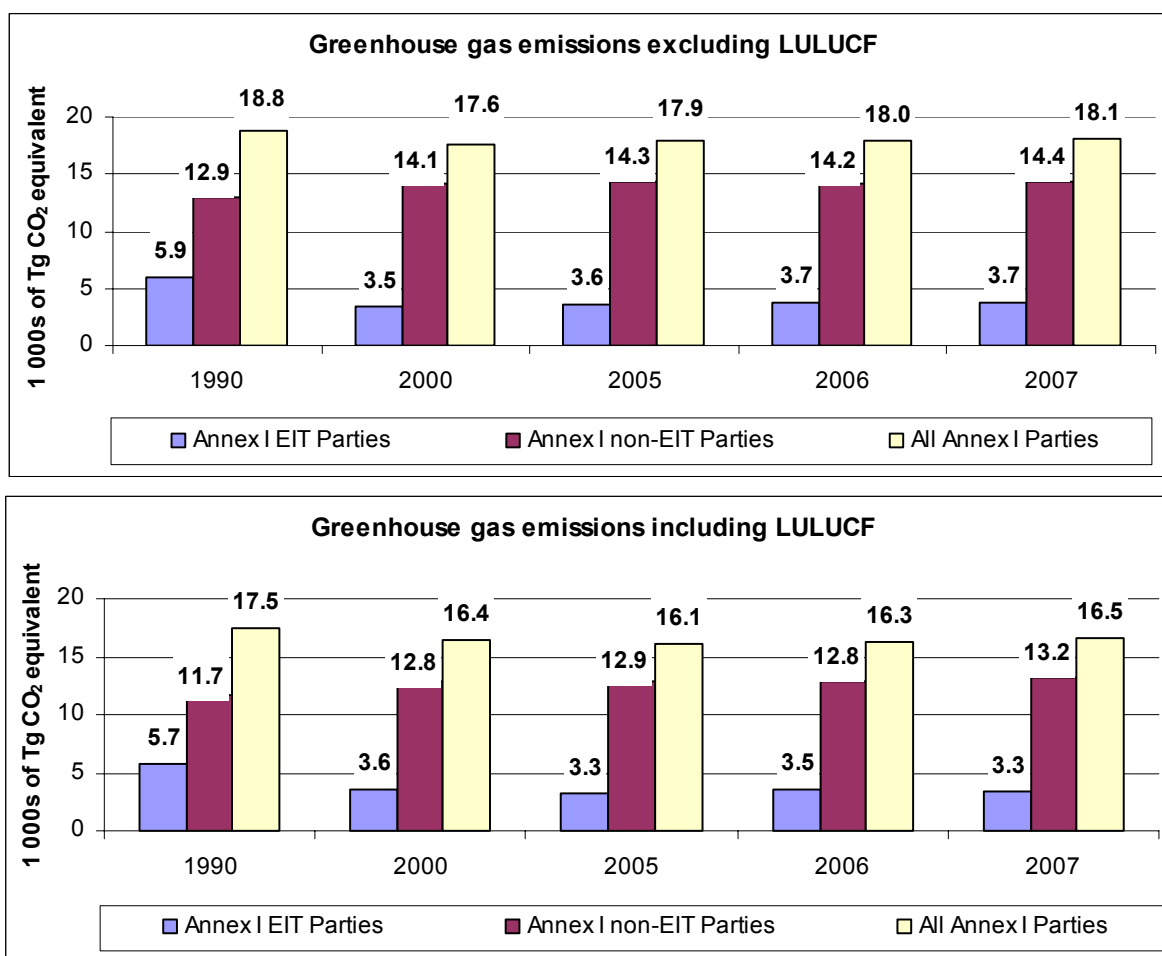
Table 2. Inventory recalculations by Annex I Parties in 2009

Party	Impact on base year GHG emissions excluding	Impact on base year GHG emissions including
	LULUCF (%)	LULUCF (%)
Australia	0.01	-12.03
Austria	-0.17	1.59
Belarus	1.39	1.68
Belgium	-0.53	-0.53
Bulgaria	0.01	18.89
Canada	-0.08	11.20
Croatia	0.09	0.11
Czech Republic	0.24	-0.08
Denmark	0.10	0.10
Estonia	0.82	-1.80
European Community	-0.26	0.90
Finland	-0.12	1.12
France	-0.16	-0.15
Germany	-1.02	-1.04
Greece	0.85	0.89
Hungary	0.52	0.99
Iceland	-0.25 ^a	0.44
Ireland	-0.26	-0.14
Italy	-0.11	2.53
Japan	-0.19 ^a	1.28
Latvia	0.84	-8.80
Liechtenstein	0.01	0.01
Lithuania	-0.60	0.05
Luxembourg	-0.52	3.37
Monaco	0.15 ^a	0.15
Netherlands	0.28	0.16
New Zealand	-0.15	5.49
Norway	-0.01	3.88
Poland	1.08	1.14
Portugal	0.27	0.26
Romania	-2.07	-2.26
Russian Federation	-0.21	-4.19
Slovakia	-0.57	-0.59
Slovenia	-0.002	-0.003
Spain	0.16	2.33
Sweden	-0.15	202.77
Switzerland	-0.17	0.28
Turkey	Less than $\pm 0.001^a$	-0.62
Ukraine	0.44	-0.26
United Kingdom	0.28	0.29
United States	-0.83	-2.83

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

^a Due to a technical error in some common reporting format (CRF) tables, there is a discrepancy between the values for the impact on the base year GHG emissions excluding LULUCF presented in this report and the values presented in the relevant CRF tables.

13. For Annex I Parties with economies in transition (Annex I EIT Parties), total aggregate emissions excluding LULUCF decreased by 37.0 per cent, from 5,907.6 Tg CO₂ equivalent in 1990 to 3,721.5 Tg CO₂ equivalent in 2007; GHG emissions including LULUCF decreased by 42.2 per cent over the same period. From 2000 to 2007, GHG emissions from these Parties increased by 7.8 per cent excluding LULUCF and decreased by 7.5 per cent including LULUCF. Between 2006 and 2007, emissions increased by 0.3 per cent excluding LULUCF and decreased by 5.7 per cent including LULUCF.

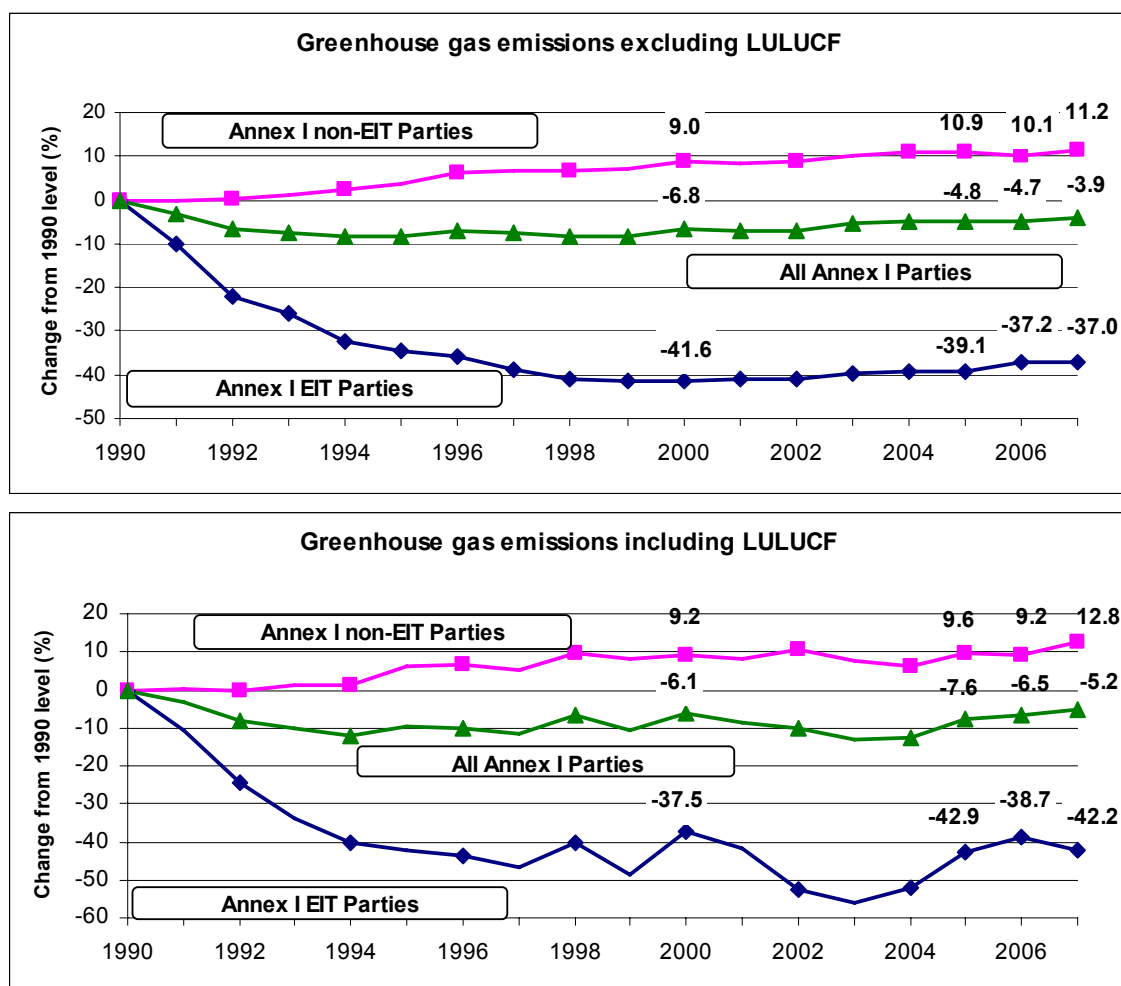
Figure 2. Greenhouse gas emissions from Annex I Parties, 1990, 2000, 2005–2007

Abbreviations: EIT Parties = Parties with economies in transition, LULUCF = land use, land-use change and forestry.

14. For Annex I non-EIT Parties, total aggregate emissions excluding LULUCF increased from 1990 to 2007 by 11.2 per cent and emissions including LULUCF increased by 12.8 per cent. From 2000 to 2007, emissions excluding LULUCF increased by 2.0 per cent and emissions including LULUCF increased by 3.3 per cent. Between 2006 and 2007, emissions increased by 1.0 per cent excluding LULUCF and increased by 3.3 per cent including LULUCF.

15. The changes in total aggregate GHG emissions from 1990 to 2007 varied considerably among countries (figure 4). Latvia has the largest decrease in emissions: 54.7 per cent for emissions excluding LULUCF and 478.3 per cent for emissions including LULUCF. On the other hand, Turkey has the greatest increase in emissions excluding LULUCF (by 119.1 per cent) and including LULUCF (by 136.7 per cent).

Figure 3. Changes in greenhouse gas emissions from Annex I Parties, 1990–2007



Abbreviations: EIT = Parties with economies in transition, LULUCF = land use, land-use change and forestry.

B. Greenhouse gas emissions by gas

16. For both 1990 and 2007, CO₂ accounted for the largest share of total emissions (80.0 per cent in 1990 and 82.8 per cent in 2007). Figure 5 illustrates the share of each GHG in total emissions excluding LULUCF for both years. It also illustrates the changes in total emissions of each GHG from 1990 to 2007. Emissions of CO₂, CH₄ and N₂O decreased, whereas emissions of HFCs, PFCs and SF₆ taken together increased by 14.8 per cent.

17. Between 2006 and 2007, emissions of all GHGs increased: CO₂ emissions by 0.9 per cent, CH₄ emissions by 0.3 per cent, N₂O emissions by 0.5 per cent and emissions of HFCs, PFCs and SF₆ taken together by 3.9 per cent.

Figure 4. Changes in total aggregate emissions of individual Annex I Parties, 1990–2007

