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SUBSIDIARY BODY FOR IMPLEMENTATION

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Agenda item 9

**NATIONAL COMMUNICATIONS FROM PARTIES INCLUDED IN ANNEX I TO THE  
CONVENTION: GREENHOUSE GAS INVENTORY DATA FROM 1990 TO 1998**

**Basic inventory data for Annex I Parties, 1990-1998**

**Note by the secretariat**

## I. INTRODUCTION

### A. Mandate

1. The Subsidiary Body for Implementation (SBI), at the first part of its thirteenth session, considered the information on national greenhouse gas inventory data reported by Annex I Parties for 1990-1998 and compiled in document FCCC/SBI/2000/11. To assist in the consideration of this information, the SBI requested the secretariat (FCCC/SBI/2000/10, para.31), to prepare for consideration at its resumed thirteenth session, a document containing graphical and tabular presentations of the information contained in the above-mentioned document.

### B. Scope of the note

2. The present note provides graphs and data of a summary nature for total aggregate emissions of all greenhouse gases. Information on hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and emissions from land-use change and forestry is provided separately. In some instances, the graphs are accompanied by data or text for greater clarity.

## II. PRESENTATION OF DATA

3. The graphs and data below are based on information received from 38 Annex I Parties in annual greenhouse gas (GHG) emission inventories or national communications. The information is presented for the years 1990-1998 in terms of trends and for 1998 in terms of levels of emissions. Document FCCC/SBI/2000/11 contains the data for each individual Annex I Party and information on the sources of the data.

4. The year 1998 is the latest for which most Parties have reported data. However, for the following Parties the latest year for which data have been reported is:

**Iceland:** 1995

**Japan:** 1997

**Liechtenstein:** 1990

**Luxembourg:** 1995

**Romania:** 1994

**Russian Federation:** 1996

**Slovenia:** 1990

5. For these Parties, with the exception of Liechtenstein and Slovenia, the data for the above years are used in this document in lieu of 1998 data. In instances where information is presented for years other than 1990 or in comparison to 1990, Liechtenstein and Slovenia have been excluded.

6. In several graphs aggregate emissions are presented. To the extent possible, aggregate emissions consist of CO<sub>2</sub> (excluding emissions and removals from LUCF), CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>. For reasons of comparability, the secretariat used IPCC 1995 global warming potentials to present information in terms of CO<sub>2</sub> equivalents. Information on the availability of data on a gas-by-gas basis for individual Annex I Parties is provided in document FCCC/SBI/2000/11.

The following chemical symbols and abbreviations are used:

<b>CH<sub>4</sub></b>	methane
<b>CO<sub>2</sub></b>	carbon dioxide
<b>N<sub>2</sub>O</b>	nitrous oxide
<b>HFCs</b>	hydrofluorocarbons
<b>PFCs</b>	perfluorocarbons
<b>SF<sub>6</sub></b>	sulphur hexafluoride

The following unit of mass is used:

<b>Gg</b>	gigagram (10 <sup>9</sup> grams)
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The following other abbreviations have been used:

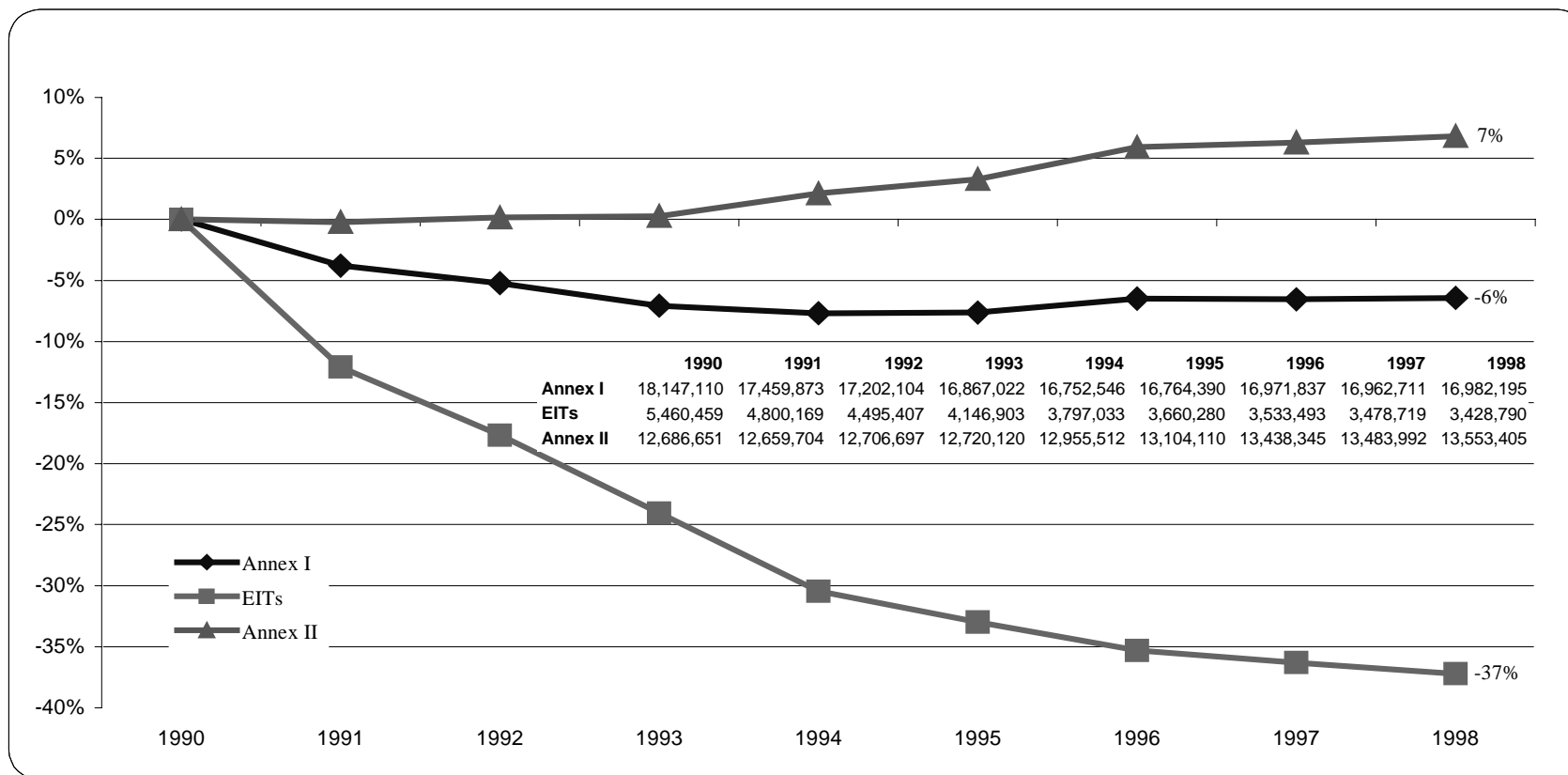
<b>EITs</b>	Parties with economies in transition
<b>GHG</b>	greenhouse gas
<b>GWP</b>	global warming potential
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>LUCF</b>	land-use change and forestry

### III. GRAPHS AND TABLES

7. The majority of graphs and tables presented in this note are self-explanatory. In some of the graphs indicating percentage change, tables with values in gigagrams were added for completeness and clarity.

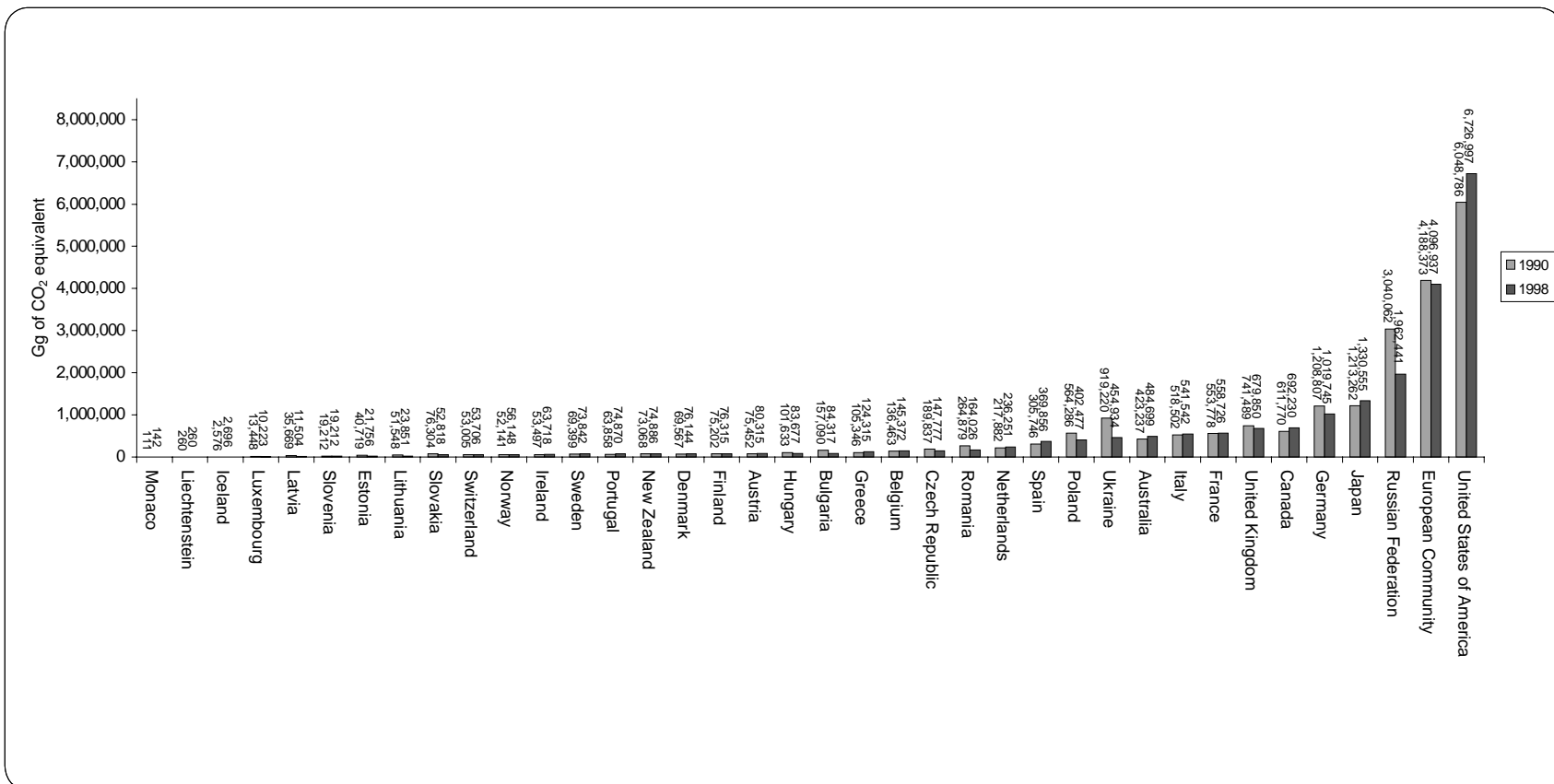
8. In figures 4 and 5, data on the contribution of individual Annex I Parties to the increase or decrease in total aggregate GHG emissions in the period 1990-1998 were calculated as follows. For those Parties that reported an increase or decrease in emissions, the corresponding amounts of increase or decrease were added and the contribution of each Party to the increase or decrease was calculated as a percentage of the total increase or decrease. The number thus obtained indicates the share of a given Party in the overall increase or decrease of GHG emissions of those Annex I Parties as a whole.

**Figure 1. Trends in GHG emissions, 1990-1998, percentage change relative to 1990 (Gg of CO<sub>2</sub> equivalent)**



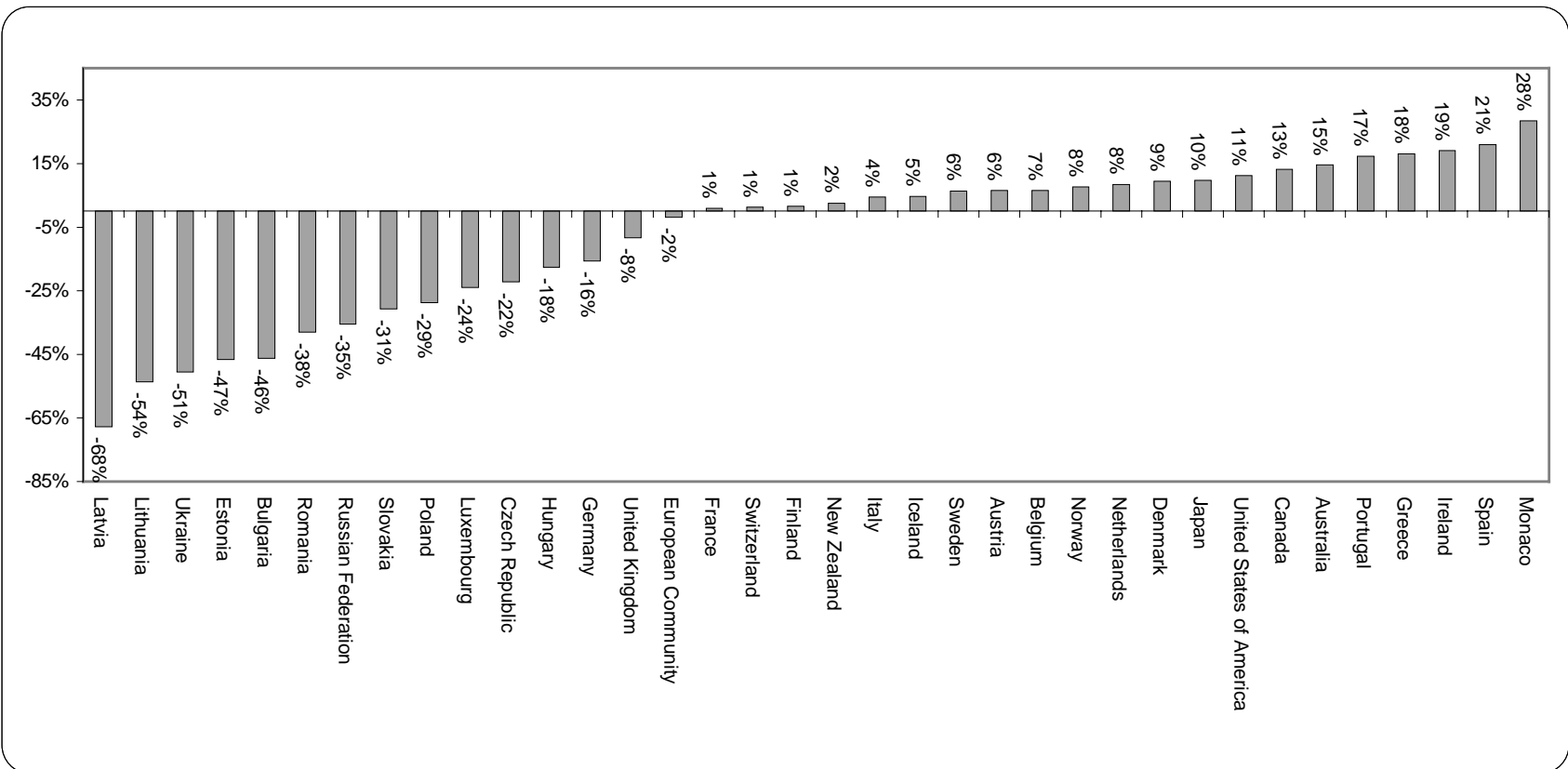
The table contains estimates of the total aggregate emissions for all greenhouse gases in Gg of CO<sub>2</sub> equivalent (1995 GWPs).

Figure 2. Total aggregate GHG emissions of individual Annex I Parties in CO<sub>2</sub> equivalent, 1990 and 1998 (Gg)



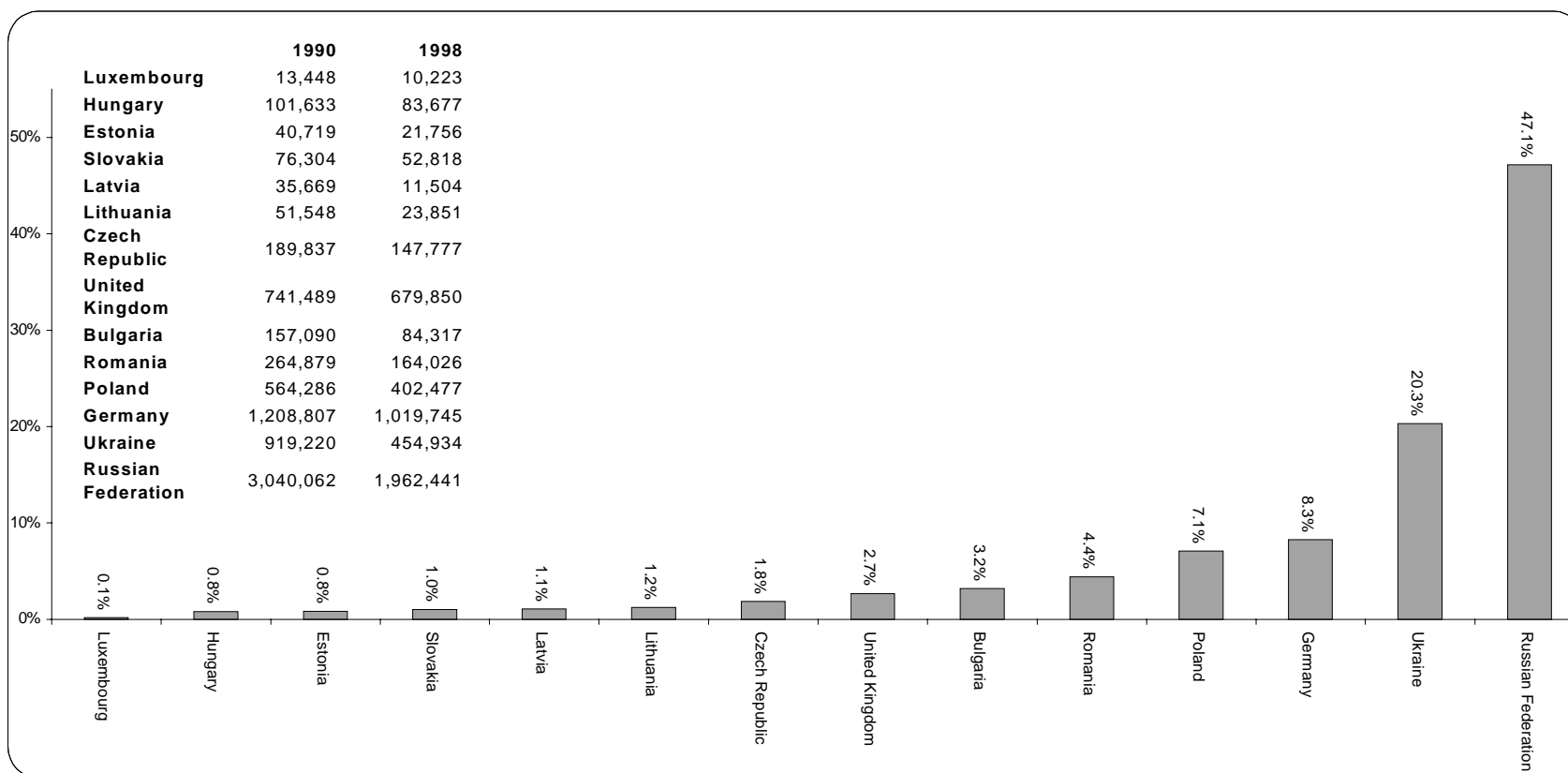
The European Community as a whole is included in this figure, as well as each of its individual member States.

Figure 3. Total aggregate GHG emissions of individual Annex I Partys in CO<sub>2</sub> equivalent, percentage change 1998 relative to 1990

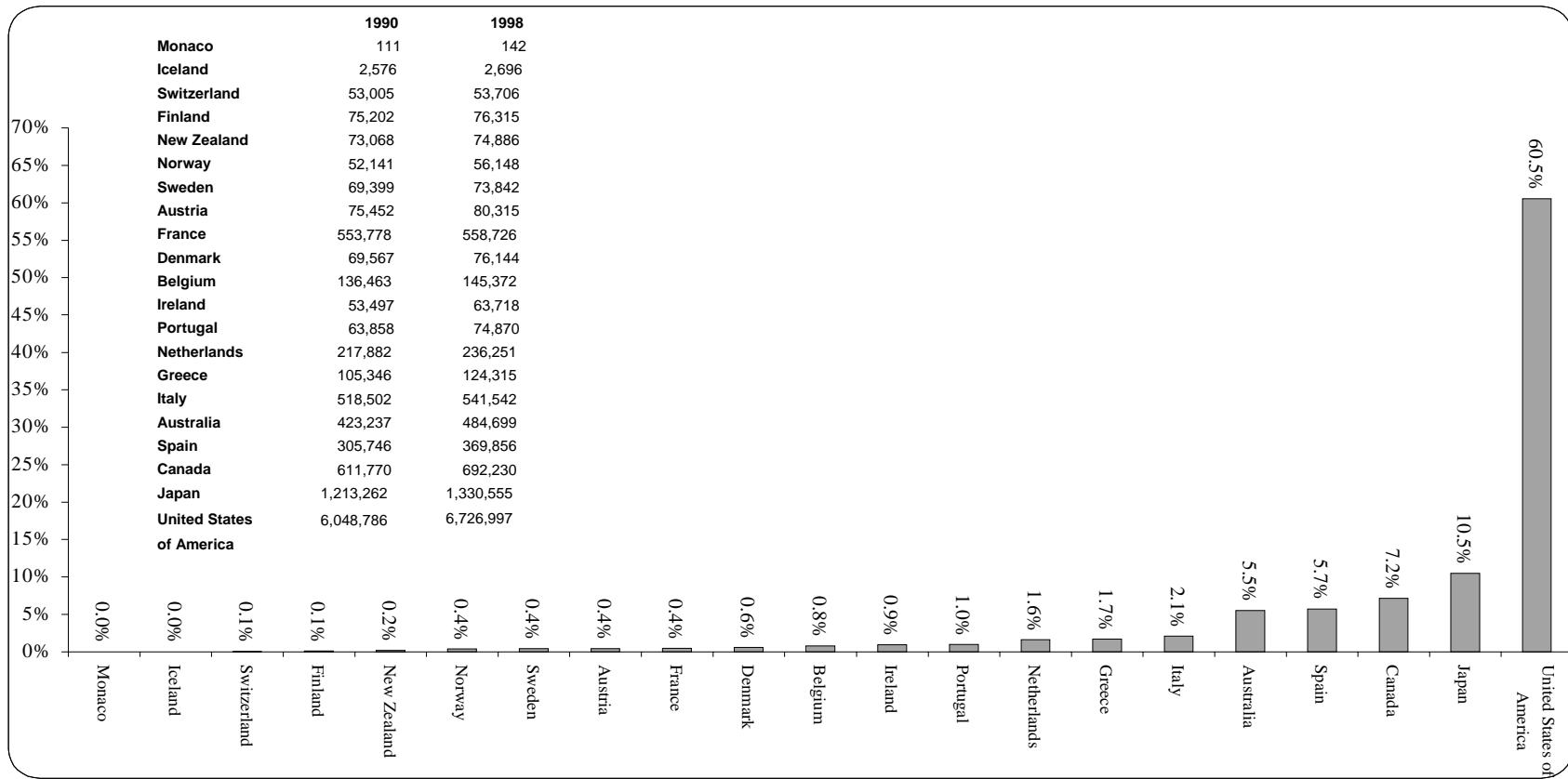


The European Community as a whole is included in this figure, as well as each of its individual member States.

**Figure 4. Contribution to decrease in total aggregate GHG emissions from Annex I Parties in the period 1990-1998  
(Gg of CO<sub>2</sub> equivalent and percentage change)**



**Figure 5. Contribution to increase in total aggregate GHG emissions from Annex I Parties in the period 1990-1998  
(Gg of CO<sub>2</sub> equivalent and percentage change)**





**Figure 6. Trends in Annex I Party HFC, PFC and SF<sub>6</sub> emissions, 1990-1998, percentage change relative to 1990, and Gg of CO<sub>2</sub> equivalent**

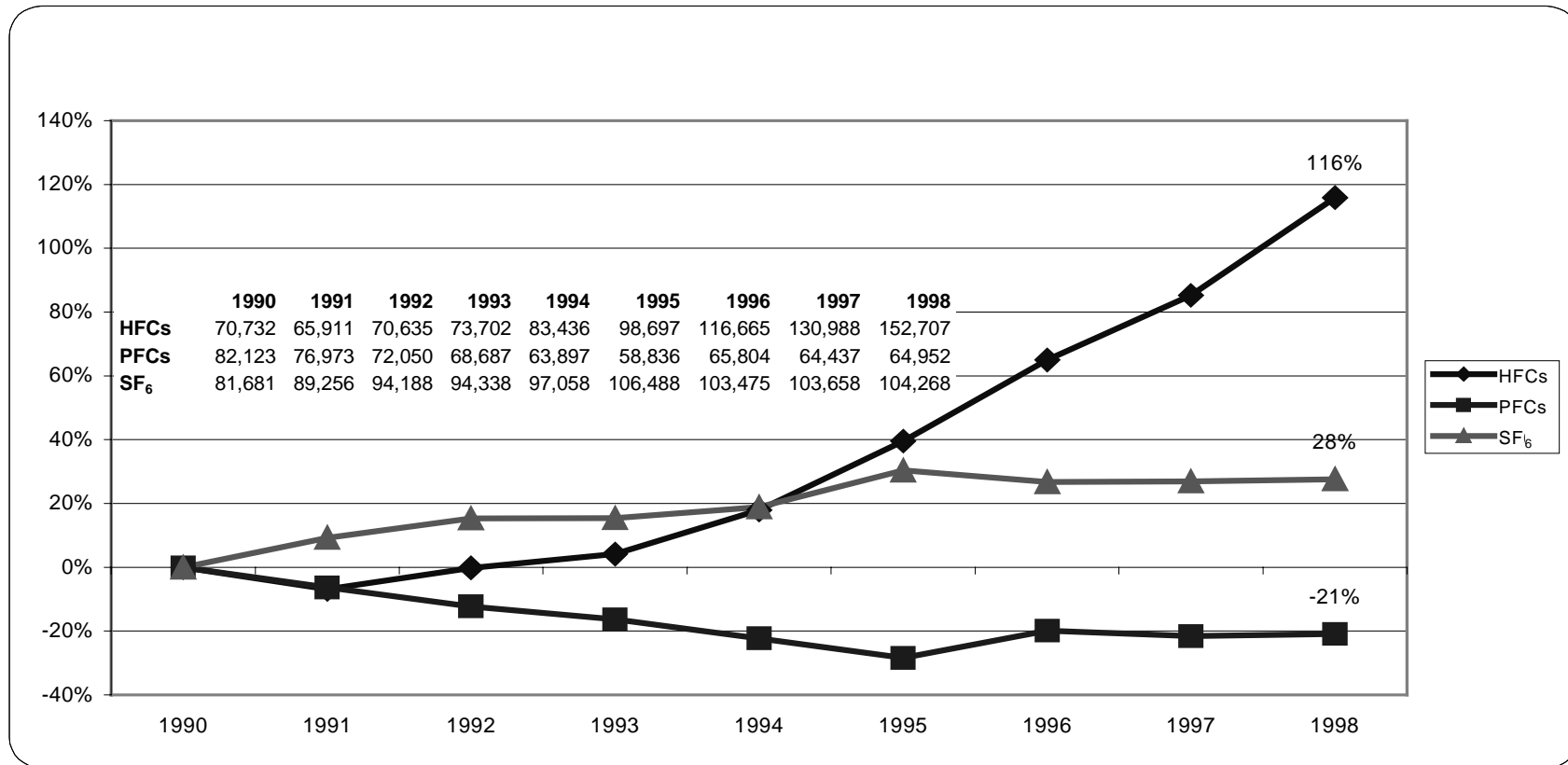
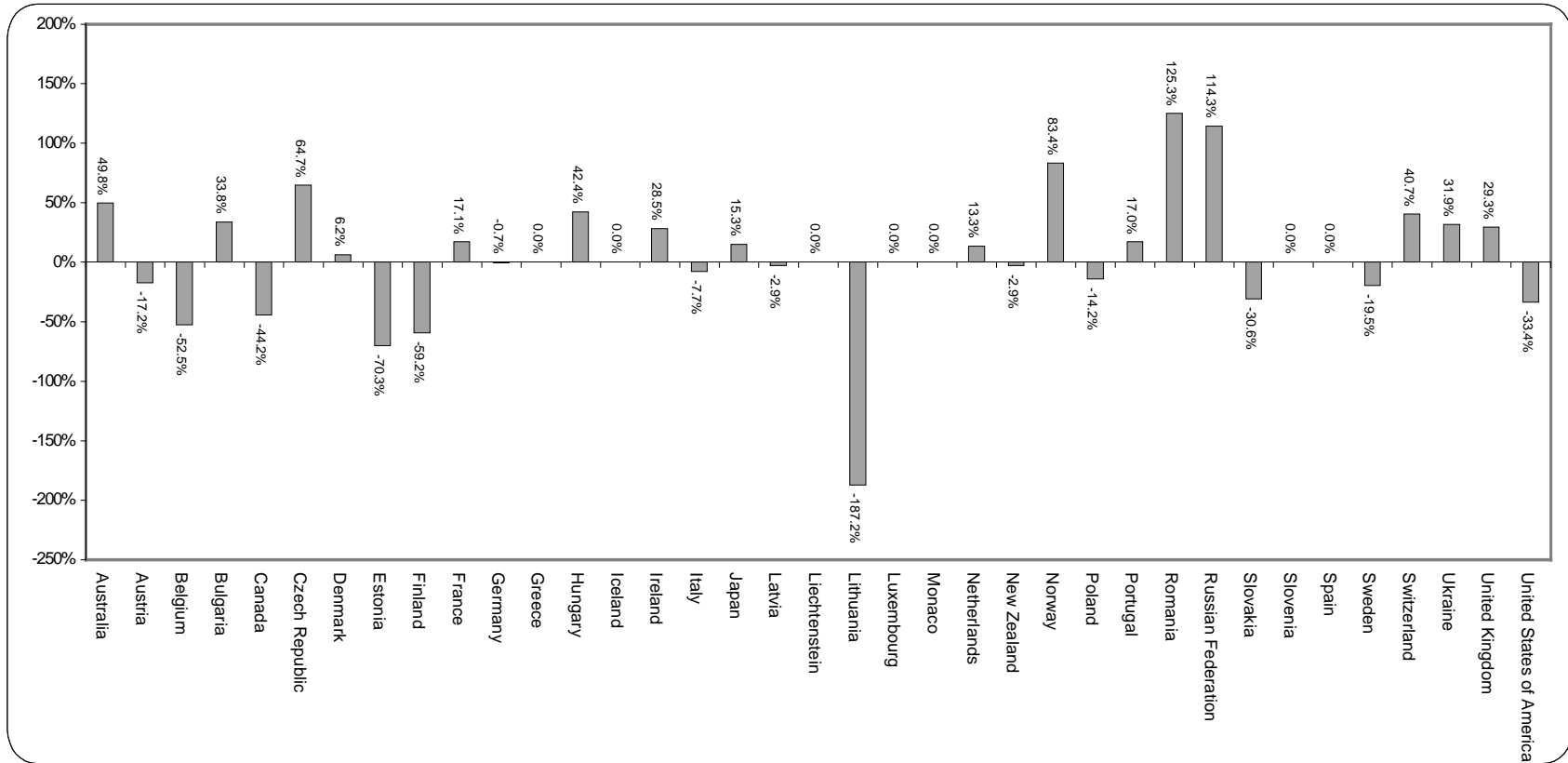
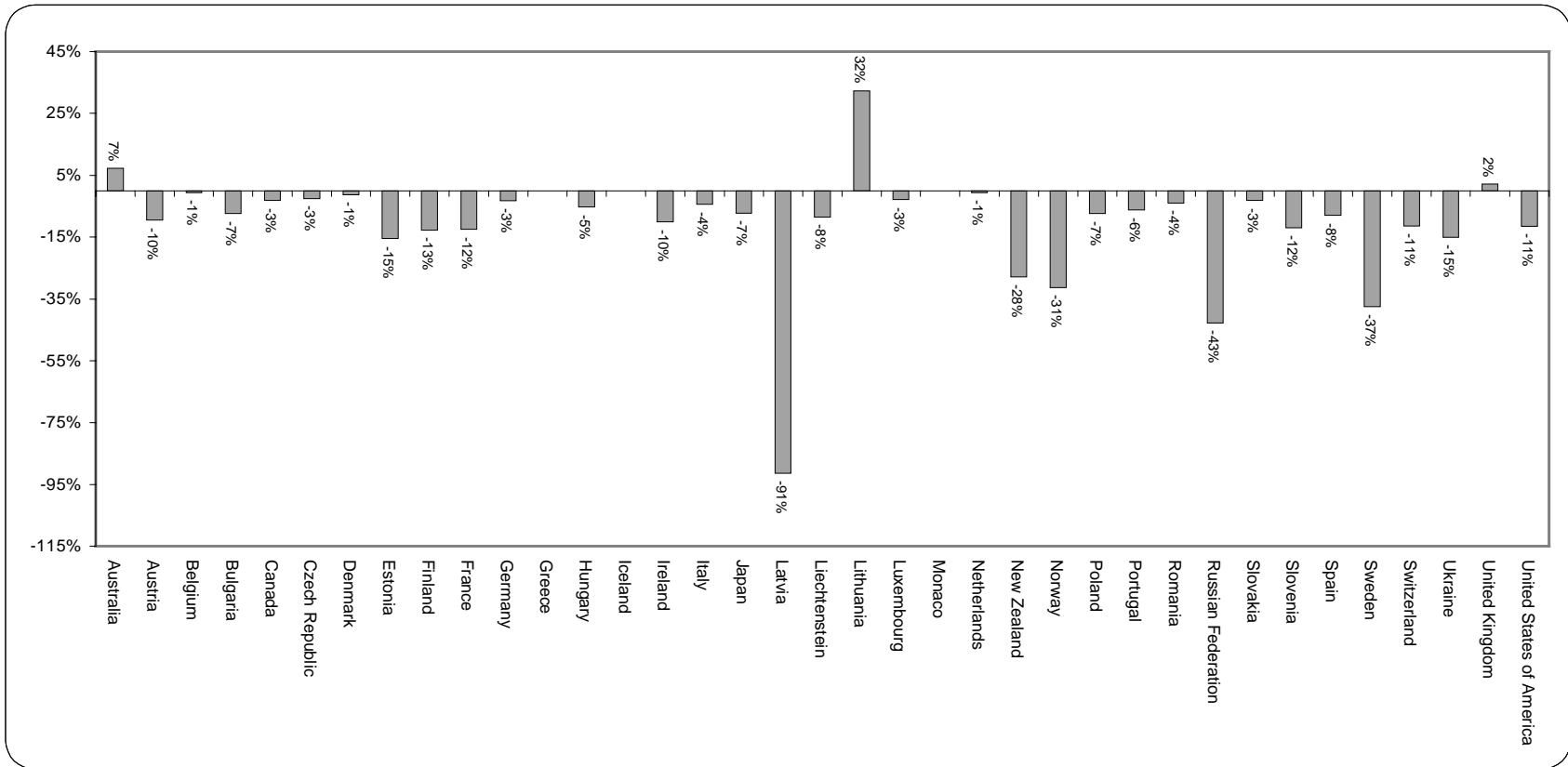


Figure 7. Percentage change in net CO<sub>2</sub> emissions or removals from land-use change and forestry, 1998 relative to 1990



For Australia and the United Kingdom, positive values correspond to a decrease in net emissions from land-use change and forestry. For other Annex I Parties, positive values indicate an increase in estimated removals by sinks, and negative values indicate a decrease in estimated removals by sinks.

**Figure 8. Net CO<sub>2</sub> emissions or removals from land-use change and forestry as a percentage of total GHG emissions excluding Land-use change and forestry, 1998**



Negative values correspond to the share of total greenhouse gas emissions which would have been offset if the LUCF sector were taken into account. Positive values indicate the percentage by which aggregate GHG emissions would have increased if the LUCF sector were taken into account.

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