



INTERNATIONAL INSTITUTE OF REFRIGERATION

SUMMARY SHEET | Kyoto Protocol

INTRODUCTION

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC).

The UNFCCC was adopted at the Rio Earth Summit in 1992 and entered into force on March 21, 1994. The Convention commits its Parties to reduce greenhouse gas (GHG) emissions by setting internationally binding emission reduction targets.

The Kyoto Protocol was adopted in 1997 and entered into force on February 16, 2005. It implements the objective of the UNFCCC to stabilise GHG concentrations “at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system”¹, setting a heavier burden on developed nations under the principle of “common but differentiated responsibilities”², because of their historical responsibility for current levels of greenhouse gases in the atmosphere.

[Kyoto Protocol Full Text](#)

¹ United Nations Framework Convention on Climate Change - [The Convention](#)

² United Nations Framework Convention on Climate Change - [Kyoto Protocol webpage](#)



INTERNATIONAL INSTITUTE OF REFRIGERATION

SUMMARY SHEET | Kyoto Protocol

CHRONOLOGY

The **Earth Summit** held on June 4, 1992 in Rio de Janeiro led to the signature of three conventions. Among them, the United Nations Framework Convention on Climate Change (**UNFCCC**) aims at the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would stop dangerous anthropogenic interference with the climate system”. The UNFCCC was signed by 154 parties divided into two categories: Annex I parties (including developed countries), and non-Annex I parties (concerning developing countries).

The parties that have ratified the Convention meet every year at the Conference of Parties (COP). The Kyoto Protocol was adopted on December 11, 1997, at COP-3. Since then, a Conference of the Parties Serving as the meeting of the Parties to the Kyoto Protocol (CMP) is held in parallel with each COP.

To enter into force, the Protocol had to be ratified by 55 countries. In addition, Annex I Parties ratifying the Protocol were required to account for at least 55% of the GHG emissions of all Parties included in this Annex on the basis of emissions calculated in 1990. The ratification of Russia on February 16, 2005 brought the Protocol into force. In 2017, 192 Parties had ratified the Protocol. The status of ratification is available [here](#).

During a first commitment period from 2008 to 2012, the Parties decided to reduce their total greenhouse gas emissions by at least 5% from the 1990 level.

A second commitment period extending from 1 January 2013 to 31 December 2020 was then decided at COP-18 and CMP-8 in Qatar in 2012, which resulted in the [Doha Amendment](#).

MEASURES FORESEEN BY THE KYOTO PROTOCOL

The 6 greenhouse gases subjected to Kyoto-controlled limitations and reductions are:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)

Commitments concerning limitations or reductions in greenhouse-gas emissions vary on a per-Party basis and are expressed as a percentage of emissions during the base year. The base year is 1990 for CO₂, CH₄ and N₂O. For HFCs, PFC and SF₆, countries can opt for 1990 or 1995.



INTERNATIONAL INSTITUTE OF REFRIGERATION

SUMMARY SHEET | Kyoto Protocol

A common unit allows the calculation of emissions of greenhouse gases: the CO₂ equivalent. The Global Warming Potential (GWP) was developed to make it easier to compare the potential impacts of different greenhouse gases on global warming. By convention, CO₂ is assigned a GWP of 1 for a period of 100 years. By comparison, methane has a GWP of 25 for the same period.

Quantified emissions limitation or reduction in greenhouse-gas emissions commitments (as a % of base-year emissions) foreseen by the Kyoto Protocol apply to 39 industrialized countries and to the European Community as follows:

Party	% of base-year emissions	Party	% of base-year emissions
Australia	108	Liechtenstein	92
Austria	92	Lithuania	92
Belgium	92	Luxembourg	92
Bulgaria	92	Monaco	92
Canada	94	Netherlands	92
Croatia	95	New Zealand	100
Czech Republic	92	Norway	101
Denmark	92	Poland	94
Estonia	92	Portugal	92
European Community	92	Romania	92
Finland	92	Russian Federation	100
France	92	Slovakia	92
Germany	92	Slovenia	92
Greece	92	Spain	92
Hungary	94	Sweden	92
Iceland	110	Switzerland	92
Ireland	92	Ukraine	100
Italy	92	United Kingdom	92
Japan	94	USA	93
Latvia	92		



INTERNATIONAL INSTITUTE OF REFRIGERATION

SUMMARY SHEET | Kyoto Protocol

Article 4 of the Kyoto Protocol authorizes Parties to act jointly in the framework of a regional economic integration organization “bubble” and to redefine differentiated objectives for each country within this bubble, provided that they achieve the total combined level of emission reductions.

European-Union countries have implemented such joint action within a “European bubble”.

MAIN KYOTO PROTOCOL MECHANISMS

The Kyoto Protocol has introduced three “flexibility” mechanisms providing Parties with more flexibility in meeting their GHG emissions limitations or reductions.

- **Joint implementation (Article 6 of the Protocol):** A mechanism whereby “any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy” provided some conditions defined in the Article 6 of the Protocol.
- **Clean development mechanism (Article 12):** “The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments.”
- **Emissions trading (Article 17):** “The Parties included in Annex I may participate in emissions trading for the purposes of fulfilling their quantified emission limitation and reduction commitments. Any such trading shall be supplemental to domestic actions for the purpose of meeting these commitments.”

DOHA AMENDMENT

In 2012, the objectives of the Kyoto Protocol were reached, even if the USA never ratified, and despite the withdrawal of Canada in 2011. Nevertheless, a second commitment period was decided at COP-18 in Doha, Qatar, in 2012. Nitrogen trifluoride (NF₃) was added to the list of greenhouse gases controlled under the Kyoto Protocol.

The Doha amendment sets new targets to reduce jointly or individually the GHG emissions of each affected party. The amendment only affects 14% of emissions as only the Member States of the European Union, the Republic of Iceland and Australia have commitments. 144 instruments of ratification are required for the entry into force of the amendment. The list of parties having made this ratification is available [here](#).

During Doha COP-18, governments decided to strengthen their commitments in order to establish a universal climate in 2015, thus announcing the Paris Agreement.

[Doha Amendment full text](#)