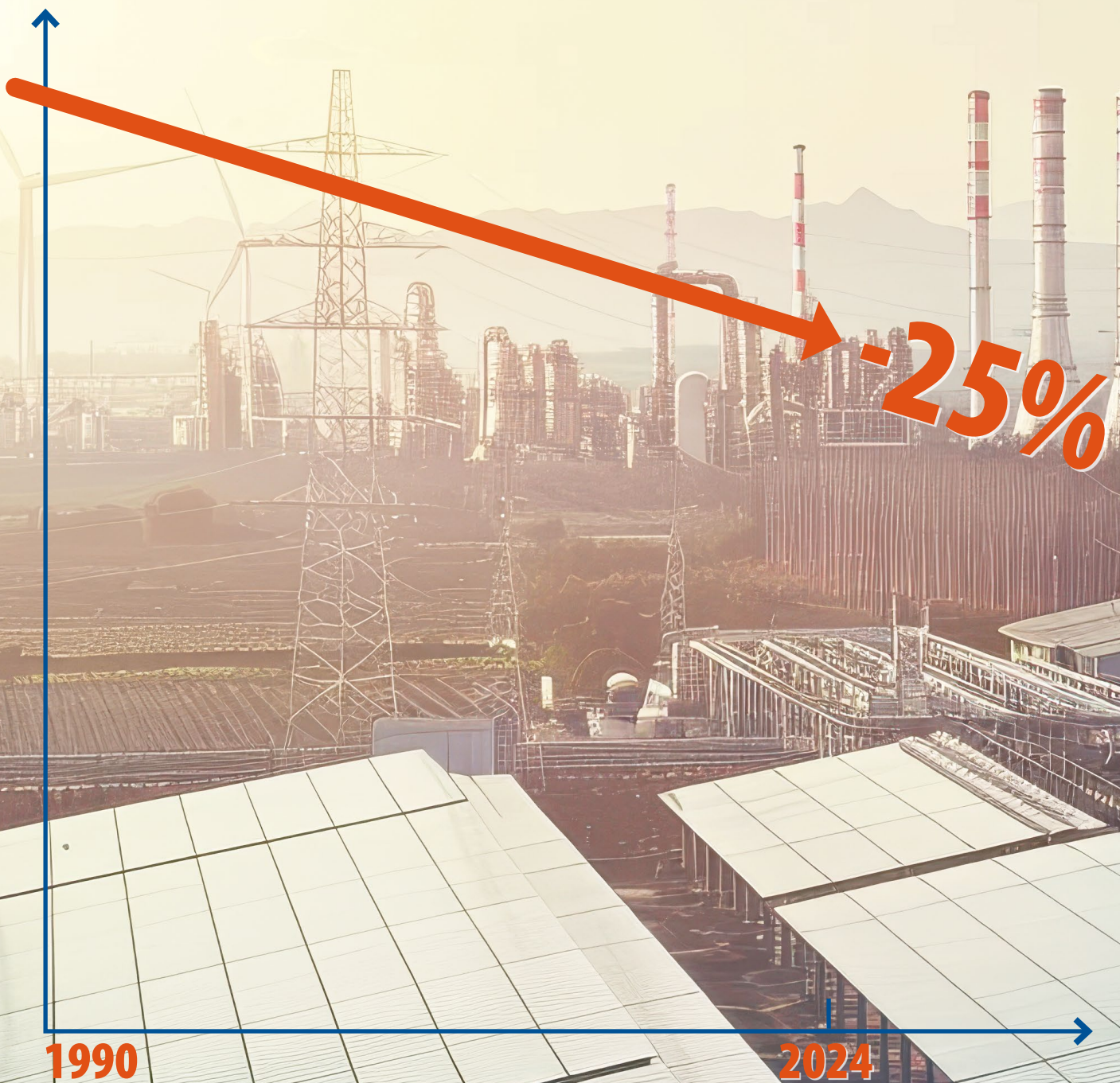


The Kyoto Protocol was not a failure

By Wendel Trio, June 2024



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The Kyoto Protocol was not a failure

In the run up to COP28 in Dubai, countries closed the Second (and last) Commitment Period of the Kyoto Protocol. Under the Kyoto Protocol, industrialised countries took binding commitments to limit or reduce greenhouse gas emissions over a certain period of time. The First Commitment Period ran from 2008 to 2012 and had 41 participating countries, representing 38% of global emissions in 1997 (when the Kyoto Protocol was adopted). The Second Commitment Period, which ran from 2013 to 2020, had 34 participating countries (originally 37 but Belarus, Kazakhstan and Ukraine dropped out), representing 11% of global emissions in 2012 (when the Second Commitment Period was agreed).

While the Protocol still exists, and some of its institutions, such as the Adaptation Fund are still active, no new commitments were made for the period after 2020, as countries decided, through the Paris Agreement, that in future all countries, including developing countries, should take on emission reduction targets. These new targets (called NDCs, Nationally Determined Contributions) are, however, very different in nature: they are not legally binding, some are economy-wide but not all, and they are end-year targets (mostly referring to the desired level of greenhouse gas emissions in 2030) as opposed to the cumulative targets of the Kyoto Protocol (which set an average emission reduction for a number of years compared to the baseline, mostly based on emissions in 1990).

It is definitely worthwhile that the Kyoto Protocol infrastructure is kept alive. In an ideal (but probably rather unrealistic) scenario, countries could, at some time, move away from the voluntary nature of the Paris pledges into accepting again binding economy-wide cumulative emission reduction targets, covering all the countries of the world.

The binding nature and the economy-wide scope of the targets as well as the cumulative approach are all features that made the Kyoto Protocol commitments more interesting than the Paris Agreement pledges. But the Kyoto Protocol's First and Second Commitment Periods were limited in coverage (with the Second Commitment Period mainly being an EU exercise as the EU made up over 85% of all emissions covered), while containing too many cheap tricks and loopholes. The latter refers to the use of flexibility mechanisms allowing countries to offset emissions by sometimes doubtful measures such as picking and choosing certain land-based activities, the use of dubious credits from projects in developing countries and the carry-over of unused allowances from the First Commitment Period.

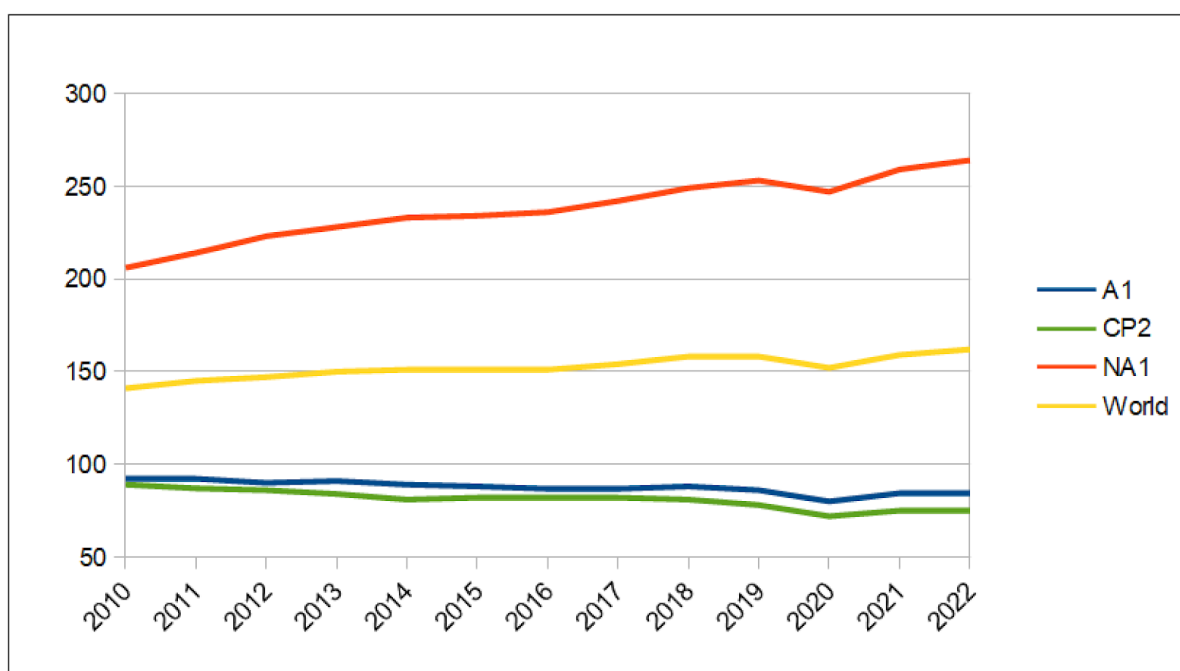
Despite these limitations, the overall performance of countries in the Second Commitment Period is positive, mainly thanks to the EU and the UK largely overachieving their targets (note that the EU, including the UK, took a joint commitment with Iceland and so they report collectively on their results). Other countries, such as Norway and Switzerland, had to make use of the flexibility mechanisms referred to above to achieve their targets.

Table 1 below shows the greenhouse gas emissions from all countries participating in the Second Commitment Period without taking into account LULUCF (Land Use, Land Use Change and Forestry) emissions and removals.

Table 1: comparison of commitments under the Kyoto Protocol's Second Commitment Period and actual reported emissions (before the use of flexibility mechanisms) in the relevant countries

Country	KP 2013–2020 reduction target	Realised 2013–2020 emission reduction
Australia	95.5%	95.2%
EU27+UK+Icelandc	80%	71.8%
Liechtenstein	84%	84.1%
Monaco	78%	85.1%
Norway	84%	101.1%
Switzerland	84.2%	89.3%
TOTAL	81.1%	74.2%

Targets expressed as maximum % of emissions compared to baseline emissions (mostly based on



emission levels in 1990) as an average for the years 2013 up and including 2020, as indicated in the Doha Amendment. Realised emission reduction based on UNFCCC True-up period information report (here) and reported as an average of emissions for the years 2013 up to and including 2020 as compared to the baseline. Note the EU28 and Iceland made a joint commitment, with the UK remaining part of this commitment after Brexit.

Overall, the countries that participated in the Second Commitment Period of the Kyoto Protocol have overachieved their collective target, and will achieve a reduction of their 2013–2020 greenhouse gas emissions by over 25% as compared to the base year (1990) emissions. This corresponds to an overall emission reduction of 28% in 2020 (compared to 1990 emissions). This compares to a reduction of greenhouse gas emissions in 2020 by 15% in those industrialised countries that did not join the Second Commitment Period, and an overall emission reduction of 19% in all industrialised countries (based on EDGAR database). Developing countries on the other hand saw their emissions increase by 150% in the same period, leading to a 50% increase in global emissions in 2020 as compared to 1990 levels.

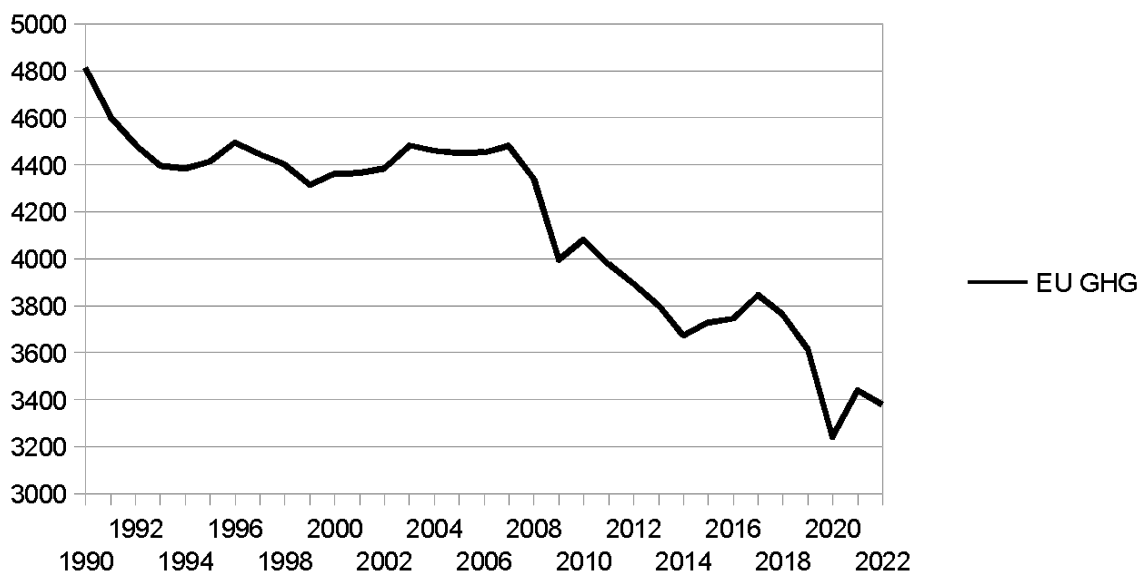
Graph 1: evolution of emissions from different country groupings between 2010 and 2022 taking 1990 levels as the benchmark (based on EDGAR database)

(A1) referring to all countries from the A1 group (excl. Turkey); (CP2) referring to all countries that joined the Kyoto protocol’s Second Commitment Period; (NA1) referring to all countries who are not part of the A1 group;

Graph 1 above shows that overall, while far from ambitious enough, industrialised countries that joined the Kyoto Protocol’s Second Commitment Period achieved substantial reductions in their greenhouse gas emissions, greater than the reductions achieved in other industrialised countries, while quite a few countries from the Economies in Transition group (such as Ukraine, Russia and Belarus), who did not join the Second Commitment Period, also saw very substantial reductions in their greenhouse gas emissions. Overall, the graph shows that despite their action being insufficient in light of what is needed to limit temperature rise to 1.5°C as committed to in the Paris Agreement, industrialised countries as a group have taken the lead in reducing their emissions as the trajectories of A1 and NA1 countries are widely divergent.

Table 2: comparison of average annual emission reductions/increases in specific country groupings in the period 2013 to 2022, as compared to 1990 emissions.

	CP1: 2008-2012	KPCP2: 2013-2020	2021-2022
Annex I countries with a CP2 commitment	-12%	-20%	-25%



Annex I countries without a CP2 commitment	-5%	-7%	-7%
All Annex I	-7%	-11%	-13%
Non-Annex I countries	+103%	+136%	+156%
World	+41%	+53%	+61%

European Union

Graph 2 below shows the evolution of emissions in the EU27 between 1990 and 2022, for all emissions (including international aviation and shipping) and removals. Early emission reductions in the period 1990 to 1995 can all be attributed to the economic collapse of former Warsaw countries that became member of the EU after the year 2000. Further reductions are visible from 2005 onwards when both the EU Emissions Trading Scheme and the First Commitment Period of the Kyoto Protocol started.

Source: EEA Greenhouse Gas Emissions Data Viewer

The Kyoto Protocol and forests

The inclusion of the land sector in the Kyoto Protocol has been controversial from the beginning. It led to the development of the so-called LULUCF (Land Use, Land Use Change and Forestry) rules, which remain controversial. Three key elements are of concern here:

- the issue of fungibility referring to the assumption that avoided emissions and removals from the land sector are interchangeable with emission reductions from fossil fuels. There is large-scale evidence pointing to the limitation of this assumption;
- the issue of the scope of land-based mitigation to be included by countries to fulfil their commitments under the Protocol. The solution is an activity-based approach, whereby countries are allowed to account for specific activities rather than land areas and also get to choose voluntarily which activities they can include or exclude from their accounting, which clearly allows countries to just include those activities most beneficial to them. In particular, the decision to characterise forest management as a voluntary activity became one of the most heavily criticised aspects of LULUCF accounting rules in the Kyoto Protocol’s First Commitment Period (2008–2012), given significant under-reporting of forest-related emissions that became possible as a result.
- the issue of baselines and reference levels. Given strong opposition against a logical net-net approach (whereby all industrial and land-based emissions and removals in the years covered by the Kyoto Protocol commitment would be compared to all industrial and land-based emissions and removals in the base year) countries agreed on a gross-net approach whereby the baseline emissions did not include land-based emissions and removals. This approach proved to be a boon for those countries (including in the EU) with low deforestation rates but with intensive forest management, given that forest management was a voluntary activity that could be excluded. As forest management became a mandatory activity in the Second Commitment Period, the gross-net baseline accounting approach was replaced by a so-called Forest Management Reference Level approach. With this, countries can propose a quantified (expected) future level of performance (in terms of net emissions from forest management) and compare this against actual emissions at the end of a commitment period. This opens up the possibility of inflating future expectations of emissions, in order to make targets easier to meet.