

G7+EU INDCs: some improvement, but a large emissions gap remains

Climate Action Tracker policy brief

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Summary

- Current policies in the G7+EU are projected to stabilise emissions through to 2030 at close to present levels, and do not yet show a decline in emissions, which is needed to move towards below 2°C and 1.5°C emission pathways.
- The projected combined effect of G7+EU INDCs for 2025, and 2030, if implemented, would bring the group 20-30% of the way to 2°C-consistent emissions in this period.
- The G7+EU 2020 pledges only bring emissions 5% of the way towards emissions levels consistent with 2 and 1.5°C in that year.
- While the remaining gaps still represent important mitigation challenges (roughly 6.5, 7.6 and 7.8 GtCO₂e/year in 2020, 2025 and 2030 respectively or 21%, 24% and 25% of 1990 emissions levels excl. forestry), there is a clear, but as yet insufficient, improvement in ambition.
- The inadequacy of the post-2020 INDC commitments compared to emissions levels consistent with 2 and 1.5°C reinforces the need to:
 - Significantly improve upon the INDCs submitted to date before Paris.
 - Upgrade efforts to reduce emissions by 2020 in order to make it easier to rapidly reduce emissions in the 2020s.
 - Limit INDC commitments to five years (2021-2025) to avoid locking in later emissions levels that are inconsistent with the 2.0°C and 1.5°C emission pathways, and to develop deeper emission reduction plans for the next stage (post-2025) of the ADP Agreement before 2020.

Introduction

The 2015 G7+EU¹ Summit, (Germany, 7-8 June) will see Heads of State meet to discuss, among other issues, the Paris Summit and the post-2015 climate agreement.

Ambitious greenhouse gas reduction proposals by the G7+EU states are central for a successful outcome in Paris. These countries are responsible in aggregate for around 30% of global greenhouse gases emissions² and 40%³ of global GDP.

The political and economic significance of the G7+EU means this group could take a lead in putting the world on a path towards meeting the globally-agreed long-term goal of holding warming below 2°C and set an example for other governments. In 2009, the G8 first adopted the 2°C limit, ahead of a global adoption of that limit a few months later in Copenhagen.

In 2015, all governments “in a position to do so” have been asked to submit an “intended nationally determined contribution” (INDC) to the future international climate agreement. The intention is that all governments transparently present their proposed action.

All G7+EU members have already presented their INDCs to the UNFCCC with the exception of Japan,¹ which has informally announced its intended mitigation contribution to the national and international media. The EU's G7 members - France, Germany, Italy and the UK - are covered by the EU INDC, and these four countries account for 55% of total EU emissions, excluding LULUCF.⁴

For the first time, the Climate Action Tracker (CAT) has analysed the aggregate effect of G7+EU INDCs on closing the 2°C and 1.5°C emissions gap in the period 2020-2030.

The G7+EU emissions gap measures the distance between where emissions (measured in billion tonnes of annual greenhouse gas emissions in a specific year) are headed, based on current policies, and where they need to be in order to be on a 2°C (or 1.5°C) emissions pathway consistent with a fair and equitable level of effort.

Closing this gap is very important in order to ensure that limiting global warming below 2°C, and reducing to 1.5°C, remains technically and economically feasible. There is a significant emissions gap at the global level, and the G7+EU, which is responsible for nearly a third of global emissions, has a substantial role to play in closing it. The extent to which the INDCs close this gap is a good measure of the G7+EU's contribution to setting the world on a below 2°C pathway.

¹ By G7, we mean Canada, France, Germany, Italy, Japan, United Kingdom, United States, and, for this briefing the G7 *plus the European Union*.

² Based on emissions in 2012 GHG emissions excluding forestry (CRF, 2014).

³ Gross Domestic Product (PPP) in 2012, based on World Bank data (World Bank, 2015).

⁴ Calculations for the G7 presented here include the EU as a whole, including all member states. As Japan did not yet submit an INDC we assumed a reduction of 23.3% below 2013 levels for sectors excluding LULUCF, resulting from the CAT interpretation of the draft INDC that is in public consultation. The difference to the proposed 26% target below 2013 levels in the INDC can be explained by the planned use of credits and debits from LULUCF.

The G7+EU emissions gap

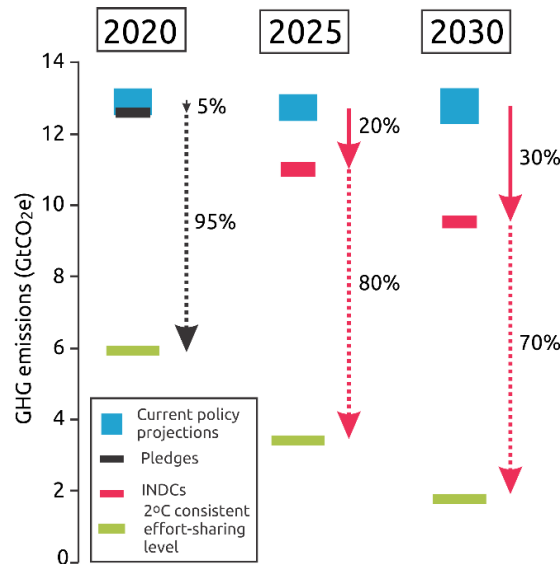


Figure 1. G7+EU emissions gap in 2020, 2025 and 2030 based on 2020 pledges and submitted INDCs

Figure 1 shows the emissions gap in 2020, 2025 and 2030. The gaps are calculated as the difference between the G7+EU pledge (for 2020) or INDC level (for 2025 and 2030⁵) and the emissions levels consistent with a 2°C pathway according to a variety of effort-sharing proposals that suggest a “fair” contribution of these countries to the 2°C limit. It can be achieved through domestic reductions or by helping others to reduce their emissions by the same amount.⁶

Compared to a baseline level of emissions (the CAT’s ‘current policies pathways’), the INDCs contribute to bringing the G7+EU closer to its 2°C-consistent emissions level by 20% and 30% in 2025 and 2030. The older G7+EU 2020 pledges only bring them 5% of the way⁷. While the remaining gaps still represent very substantial mitigation challenges (roughly 6.5, 7.6 and 7.8 GtCO₂e/year in 2020, 2025 and 2030 respectively or 21%, 24% and 25% of 1990 emissions levels excl. forestry), our assessment indicates a step towards achieving 2°C in the post-2020 framework, compared to pre-2020.

The CAT also identifies substantial differences in how far each of the G7+EU members is from achieving its INDC, under their current policies, and hence what the scale of the required emission reduction task is in each case - just to reach the emissions levels implied by the INDCs.

- Current policies bring the EU close to achieving its INDC (23-35% **below** 1990 levels by 2030, excl. LULUCF) compared to the 40% **below** 1990 levels it proposes.

⁵ For the governments that have only provided an INDC for 2030, we infer 2025 levels from linear interpolation between 2020 pledge levels and 2030 INDC level for the individual country. For governments that have only submitted an INDC for 2025 (e.g. USA), we infer 2030 levels from a linear interpolation between 2025 and the 2050 long-term target.

⁶ The 2°C consistent effort-sharing emissions level is the sum of the limit between CAT’s “Medium” and “Sufficient” category for the individual G7 countries. For details, refer to section ‘Calculation of the factor to differentiate between medium and sufficient’ in <http://climateactiontracker.org/methodology/85/Comparability-of-effort.html>.

⁷ As the reference used for calculating this gap includes currently implemented policies, the narrower gap in 2020 could be explained by progress towards meeting the 2020 pledges.

- Canada's current policies are far from meeting its INDC objectives, as they would bring emissions to 35% **above** 1990 levels by 2030 whereas the INDC proposes a reduction of 2% **below** 1990 emissions levels (excl. LULUCF)⁸ by 2030.
- In the USA, currently implemented policies still lead to an increase in emissions. However, with full implementation of policies under Obama's Climate Action plan, the country would reduce its emissions by 10% **below** 1990 levels in 2025 and would be close to meeting the required reductions of 14-17% **below** 1990 implied by its INDC.
- Japan's current policies also fall short of putting it on track to meeting the target proposed in the draft INDC (of 23.3% below 2013 by 2030, excl. LULUCF⁹): emissions will be at around -7/+3% of 1990 levels in 2030 compared to the required 13% reduction **below** 1990 emissions (excl. LULUCF).

This clearly indicates that climate action in the G7+EU needs to be strongly upgraded if the group is to meet its promised levels.

2°C least-cost pathway and effort-sharing

It is clear that the G7+EU still has a long way to go to be in line with its 2°C compatible effort-sharing emissions level (Figure 1). The aggregate emissions levels the G7+EU INDCs would deliver are at the unambitious end of the range coming from global least-cost scenarios (those that assume global reductions in line with 2°C in the countries and sectors where they are the cheapest¹⁰, Figure 2). But all this tells us is that the least-cost pathways make up, at best, 50% of the way towards a fair effort sharing contribution.

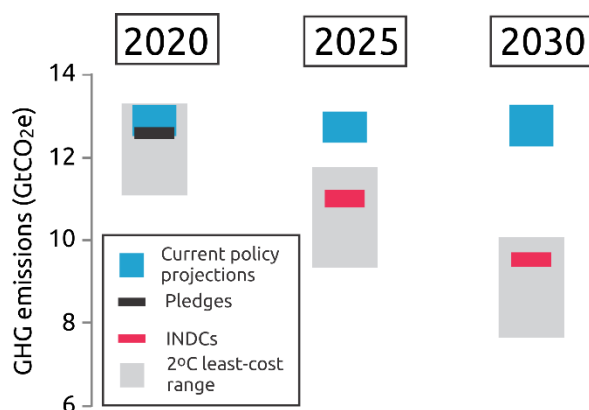


Figure 2 G7+EU 2020, 2025 and 2030 least-cost range consistent with 2°C.

It is widely understood that achieving a global agreement sufficient to limit warming below 2°C (or 1.5°C) will require effort sharing by the wealthier countries. For those countries which - on any fairness and equity index - would need to contribute more to the global effort than their present

⁸ According to CAT assessment, after accounting for LULUCF credits and debits: <http://climateactiontracker.org/countries/canada.html>.

⁹ The CAT interpretation of draft INDC (currently in public consultation) is a reduction 23.3% below 2013 levels for sectors excluding LULUCF. The difference to the proposed 26% target below 2013 levels in the INDC can be explained by the planned use of credits and debits from LULUCF.

¹⁰ The range of 2°C-consistent emissions shown in Figure 2 is derived from scenarios from the LIMITS project (<http://www.feem-project.net/limits/>): scenario names 450, RefPol-450, StrPol-450 from models IMAGE and Aim-Enduse, with resolution for largest emitters (Japan) and regions North America and European Union.

share of global emissions, this means that the level of proposed action needs to exceed what is termed the “least-cost emissions pathway” for that country. Why?

Least-cost emissions pathways are developed using global cost optimisation models, so that each country reduces emissions to the point where the marginal cost of reducing emissions in that country is no higher or lower than the marginal cost of any other country. In other words, if all countries were economically equal, the least-cost emissions pathway for each country would be the appropriate level of action to take. However, least-cost global pathways do not take into account the different levels of capacity, capability or responsibility between countries, all of which need to go into the mix to determine the overall level of action that is appropriate to each country.

Consequently, if a wealthier country reduces emissions only to its least-cost emissions level, it will generally not be contributing enough of its share in global effort to overcome the disadvantages and cost experienced by other, less wealthy, countries. We emphasise this because it is sometimes argued that some large countries’ emission reductions commitments approach a 2°C pathway, however this is only with respect to a global least-cost approach (see Figure 2).

Another important element is that the least-cost pathways only reflect the level of *domestic* emissions reductions by the G7+EU, while INDCs can include reductions in other countries through emissions trading. If governments take on emission reduction commitments that are deeper than the least-cost pathways, emissions reductions could be achieved in other countries with lower costs through emissions trading, or direct financing of projects and activities that reduce emissions in other countries.

The Climate Action Tracker is an independent science-based assessment that tracks the emission commitments and actions of countries. It is a joint project of the following organisations:

Climate Analytics

Climate Analytics is a non-profit organization based in Berlin, Germany. It has been established to synthesize climate science and policy research that is relevant for international climate policy negotiations. It aims to provide scientific, policy and analytical support for Small Island States (SIDS) and the least developed country group (LDCs) negotiators, as well as non-governmental organisations and other stakeholders in the 'post-2012' negotiations. Furthermore, it assists in building in-house capacity within SIDS and LDCs. Contact: Dr. h.c. Bill Hare, +49 160 908 62463

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Ecofys – Experts in Energy

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Potsdam Institute for Climate Impact Research (PIK)

The PIK conducts research into global climate change and issues of sustainable development. Set up in 1992, the Institute is regarded as a pioneer in interdisciplinary research and as one of the world's leading establishments in this field. Scientists, economists and social scientists work together, investigating how the earth is changing as a system, studying the ecological, economic and social consequences of climate change, and assessing which strategies are appropriate for sustainable development. Contact: Dr. Louise Jeffery, louise.jeffery@pik-potsdam.de

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NewClimate Institute

NewClimate Institute is a non-profit institute established in 2014. NewClimate Institute supports research and implementation of action against climate change around the globe, covering the topics international climate negotiations, tracking climate action, climate and development, climate finance and carbon market mechanisms. NewClimate Institute aims at connecting up-to-date research with the real world decision making processes. Contact: Dr. Niklas Höhne, +49 173 715 2279

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