Addendum to the Emissions Gap Report 2021:

A preliminary assessment of the impact of new or updated nationally determined contributions, other 2030 pledges and net-zero emissions pledges announced or submitted since the cut-off dates of the Emissions Gap Report 2021[1]

This note provides a preliminary assessment of the implications of the new or updated nationally determined contributions (NDCs), other 2030 mitigation pledges and net-zero announcements made after the cut-off dates used in the Emissions Gap Report 2021. More specifically, the following aspects are assessed:

1. The projected global greenhouse gas (GHG) emissions in 2030, assuming full implementation of mitigation pledges for 2030, including NDCs and other pledges.
2. The implications for the emissions gap for 2030.
3. An update on net-zero emissions pledges, with a focus on G20 members.
4. Implications for estimated global warming at the end of the century under current policies, 2030 pledges and net-zero scenarios.

The potential impacts of additional sectoral and non-state pledges made during the first week of COP26 are not considered in this update. First, several of these are global announcements rather than national pledges and therefore they cannot be attributed to individual countries. Second, analyses of previous Emissions Gap Reports have demonstrated that there can be significant overlap between such announcements and what is covered as part of national mitigation pledges for 2030.

Update of projected global greenhouse gas emissions for 2030

This update considers 33 new mitigation pledges for 2030 (31 in NDCs and 2 in other announcements as of 4 November 2021) made since the cut-off date applied in the Emissions Gap Report 2021. The total number of mitigation pledges for 2030 considered is now 152, covering 88% of global greenhouse gas emissions. Figure 1 provides an update of the projected impact of unconditional NDCs and other 2030 pledges (for G20 members individually and for non-G20 members as a group) on 2030 global emissions, compared with previous nationally determined contribution submissions or with current policies, if emissions under current policies are estimated to be lower than under the new or updated 2030 pledge.[2, 3]

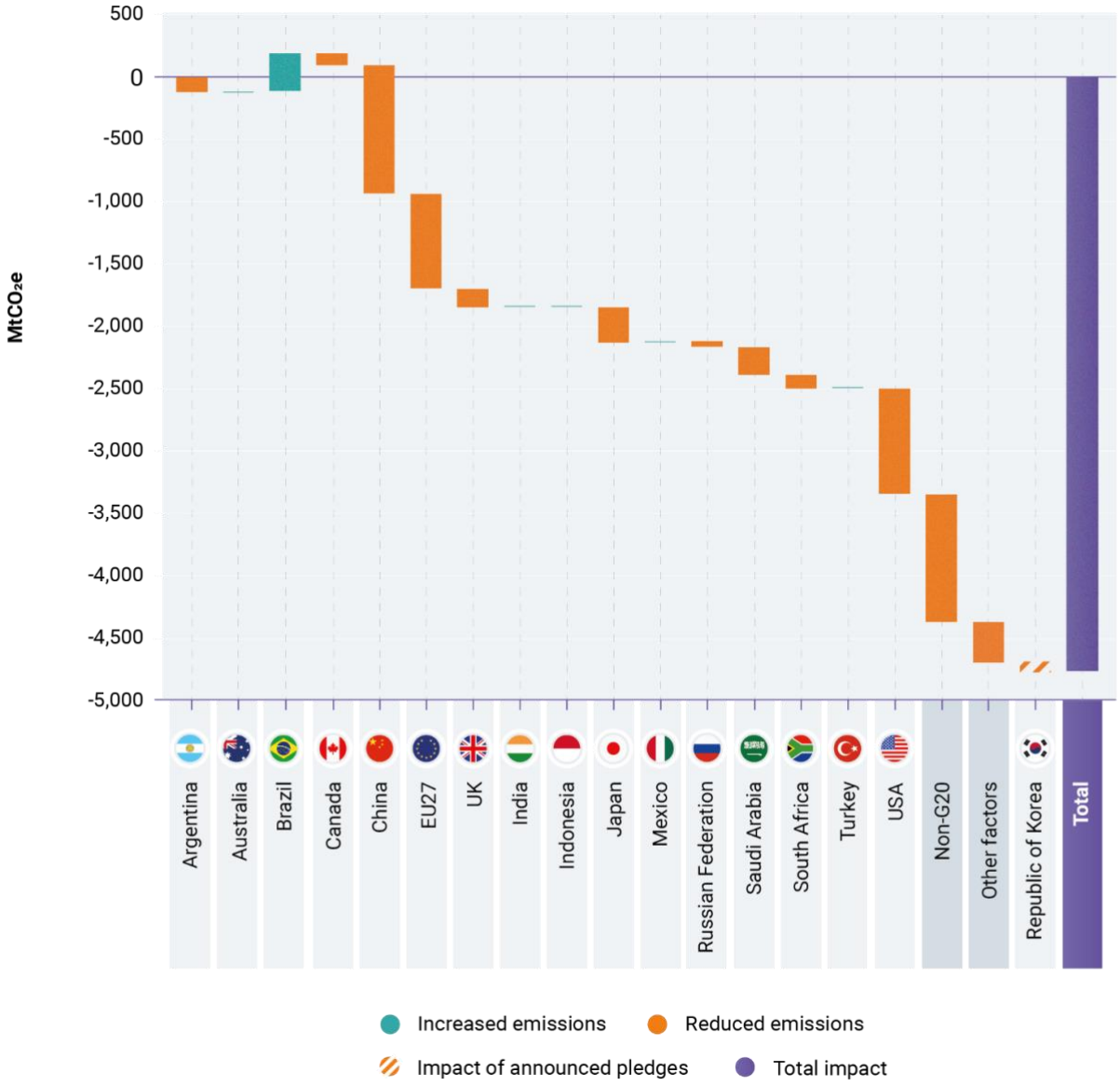
[1] Prepared by authors of the Emissions Gap Report 2021.

[2] The announcement of India is assessed to lead to a reduction of about 1 $GtCO_2e$ compared to its first NDC. However, as the new announced 2030 pledge is still above the current policies scenario estimate for 2030, it is not estimated to lead to further reductions in global GHG emissions in this preliminary assessment.

[3] The announcement of Brazil on 1 November 2021 to reduce its emissions by 50% below 2005 levels is not included, as this was not included in the updated NDC submission of Brazil of 31 October 2021.

The aggregate impact of all new or updated unconditional NDCs and other announced pledges is estimated to lead to a total reduction in 2030 global GHG emissions of about 4.8 $GtCO_2e$ compared with prior pledges (Figure 1). This reduction is about 0.7 $GtCO_2e$ greater than that reported in the Emissions Gap Report 2021. It is mainly due to additional reductions from Saudi Arabia (about 30%), non-G20 members (30%), China (updated NDC) (30%) and other factors, including lower projections of international aviation and shipping emissions, and adjustments of countries that are projected to overachieve their NDC targets.

Figure 1. Preliminary update of the impact of unconditional 2030 pledges (NDCs and other pledges) on 2030 global emissions compared with the first round of nationally determined contributions.



Note: some of the details are yet to be furnished and the exact interpretation depends on those details.

Update of the emissions gap for 2030

Projected emissions in 2030 under the unconditional NDC and pledge scenario are 51.5 $GtCO_2e$ (median estimate). This is about 0.5 $GtCO_2e$ lower than the median estimate in the Emissions Gap Report 2021.[4]

Emissions under the conditional NDC and pledge scenario are estimated at 48 $GtCO_2e$. This is about 1.5 $GtCO_2e$ lower than in the Emissions Gap Report 2021.

On these revised estimates, by 2030, annual emissions need to be 12.5 $GtCO_2e$ (range: 9–15 $GtCO_2e$) lower than updated unconditional NDCs and announced pledges imply for a 2°C goal, and 27 $GtCO_2e$ (range: 24–29 $GtCO_2e$) lower for the 1.5°C goal. Both estimates are for a 66% chance of staying below the stated temperature limit. If conditional NDCs are also considered, these gaps are reduced to around 9 $GtCO_2e$ and 23.5 $GtCO_2e$ respectively.

In conclusion, the communicated and announced unconditional pledges made between the September cut-off date of the Emissions Gap Report 2021 and 4 November 2021 have narrowed the gap with respect to 2°C and 1.5°C by about 0.5 $GtCO_2e$; whereas the gap assuming the conditional pledges are also fully implemented has been narrowed by about 1.5 $GtCO_2e$.

These changes do not affect the conclusion of the Emissions Gap Report 2021 that a significant increase in 2030 mitigation pledge ambition and acceleration of action is required to get the world on a path consistent with the Paris Agreement temperature goal. Even considering the recent updated pledges for 2030, annual global GHG emissions would need to be roughly halved by 2030 to become consistent with a 1.5°C least-cost pathway.

Updated net-zero pledges with a focus on G20 members

Since the cut-off date of the Emissions Gap Report 2021, 25 additional countries have announced net-zero emissions pledges, implying that 76% of global domestic emissions are now covered by net-zero announcements as opposed to 57% by the cut-off date of the Emissions Gap Report 2021. Seventeen G20 members covering 69% of global domestic emissions (as opposed to 12 G20 members covering 54% of global domestic emissions considered in the report) have firmly pledged a net-zero target as indicated in Figure 2.

Despite some G20 members publishing further detail, net-zero pledges still show a number of ambiguities. As stated in the Emissions Gap Report 2021, these include sectors and gases covered, inclusion of offsets and of international aviation and shipping emissions, and lack of transparency regarding the plans for achievement and on reporting and reviewing progress. Furthermore, few of the G20 members' NDC targets put emissions on a clear path towards net-zero pledges. There is an urgent need to back up these pledges with near-term targets and actions that give confidence that net zero emissions can ultimately be achieved and the remaining carbon budget kept.

[4] The 0.2 $GtCO_2e$ difference between the global median estimates and the estimates in the previous section is due to a methodological change, as Figure 1 is based on averaged estimates of five model studies, and the global emissions calculations are based on the median estimates of eight model studies.

Figure 2. Updated preliminary analysis of net-zero targets of G20 members

Country	Year	Target status	Refers to fairness	All gases	All Sectors	Int. aviation & shipping	Excludes offsets	Published plan	Review Process	Reporting Progress	Separate targets	Removals transparency
Argentina	2050	Government announcement	○	?	?	?	?	○	○	○	○	○
Australia	2050	In policy document	○	●	●	○	○	●	●	Annually	○	○
Brazil	2050	In policy document	○	?	?	?	?	○	○	○	○	○
Canada	2050	In law	○	●	●	?	?	●	●	Not annually	○	○
China	2060	In policy document	○	?	●	?	?	○	○	○	○	○
European Union	2050	In law	○	●	●	?	●	●	●	Not annually	○	●
France	2050	In law	●	●	●	○	●	●	●	Annually	●	●
Germany	2045	In law	○	●	●	○	○	●	●	Annually	●	○
India	2070	Government announcement	○	?	?	?	?	○	○	Not annually	○	○
Italy	2050	Government announcement	○	?	?	?	?	○	○	○	○	○
Japan	2050	In law	○	●	●	?	?	●	●	Not annually	○	○
Republic of Korea	2050	In law	○	●	?	?	●	●	●	Not annually	●	●
Russian Federation	2060	Government announcement	○	?	?	?	?	○	○	Not annually	○	○
Saudi Arabia	2060	Government announcement	○	?	?	?	?	○	○	Not annually	○	○
Turkey	2053	Government announcement	○	?	?	?	?	○	○	○	○	○
UK	2050	In law	○	●	●	●	○	●	●	Annually	○	●
USA	2050	In policy document	○	●	●	○	?	●	●	Annually	○	●

Update of the estimated global warming at the end of the century under current policies, 2030 pledges and net-zero scenarios

As there have been no assessment of updates to current policies, a continuation of current policies is projected to limit global warming to 2.8°C with a 66% probability over the course of the 21st century with a range of 2.3°C–3.3°C due to uncertainties about how emissions would continue after 2030.

This is identical to the Emissions Gap Report 2021 and warming would continue to rise thereafter, as emissions have not been brought down to net zero yet.

When the effects of full implementation of the latest updates of unconditional and conditional NDCs are projected out to 2100, warming over the 21st century is projected to be limited to 2.7°C (range: 2.2°C–3.1°C) and 2.5°C (range: 2.1°C–3.0°C), respectively, with a 66% probability. These estimates remain very similar to the estimates published in the Emissions Gap Report 2021 due to limited changes to 2030 emissions.

Finally, when the full implementation of all net-zero pledges and announcement to date are taken into account in addition to the updated unconditional and conditional NDCs, warming over the 21st century is projected to be limited to 2.1°C (range: 1.9°C–2.3°C) and 1.9°C (range: 1.9°C–2.2°C), respectively, with a 66% probability. For a 90% probability, projected temperatures are 2.5°C (range: 2.3°C–2.8°C) and 2.4°C (range: 2.2°C–2.7°C), respectively. For a 50% probability, global warming is estimated at 1.9°C (range: 1.8°C–2.1°C) and 1.8°C (range: 1.7°C–2.0°C), respectively.

As noted in the Emissions Gap Report 2021, given the lack of transparency of net-zero pledges, the absence of a reporting and verification system and the fact that few 2030 pledges put countries on a clear path to net zero emissions, it remains uncertain if net zero pledges will be achievable.

DISCLAIMER: This is a preliminary assessment - figures may be updated in future assessments

The views expressed in this document are those of the authors and do not necessarily reflect the views of the United Nations Environment Programme. We regret any errors or omissions that may have been unwittingly made.

The update is based on the following sources:

Climate Action Tracker (2021). *Glasgow's 2030 credibility gap: net zero's lip service to climate action*. Warming Projections Global Update November 2021. Climate Analytics and NewClimate Institute.

Climate Watch (2021). Explore nationally determined contributions (NDCs). https://www.climatewatchdata.org/ndcs-explore Accessed 5 November 2021.

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Joint Research Centre (2021). Global Energy and Climate Outlook 2021: Advancing towards climate neutrality, Luxembourg: Publications Office of the European Union, 2021, doi:10.2760/410610

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Net Zero Tracker https://zerotracker.net