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THE NEW NDCs FOR 2035

Emissions impact and ambition analysed

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Summary

In 2025, countries communicated their new Nationally Determined Contributions (NDCs; mitigation ambitions) for 2035 under the Paris Agreement, with the intention of keeping the increase in global temperatures well below 2 °C while pursuing efforts to limit the increase to 1.5 °C. The Paris Agreement prescribes that NDCs should reflect the highest possible ambition while simultaneously reflecting common but differentiated responsibilities and capabilities in light of varying national circumstances. In this policy brief, we evaluate the impact of the new NDC emission reduction targets for 2035 on global emissions. Furthermore, we assess their ambition levels, focusing on G20 economies.

Our results show that:

- **The aggregated global emission reductions by 2035 resulting from the new NDCs are not sufficient to be in line with reductions by 2035 on Paris aligned pathways.** Together, the new NDCs are expected to lead to global greenhouse gas emission reductions of about 8–9% (unconditional NDCs) or 11–12% (including conditional NDCs) by 2035 compared to 2019 levels, which is not sufficient to be in line with scenarios limiting temperature increase to 1.5 °C (with >50% chance) or to likely below 2 °C (>67% chance).
- **The new NDC targets for 2035 increase the emissions gap with Paris aligned pathways compared to the NDC targets for 2030.** Full implementation of NDCs for 2035 leads to larger emissions gaps with scenarios limiting temperature increase to 1.5 °C and likely below 2 °C compared to NDCs for 2030.
- **Several of the new NDC targets for 2035 of G20 economies align with the net zero targets and with one or more possible reduction targets to limit temperature increase to likely below 2 °C. Only few align with possible reduction targets for limiting temperature increase to 1.5 °C.** Various approaches can be used to assess ambition levels of NDCs. We evaluate G20 economies' new unconditional NDCs by comparing them to reductions on linear pathways to their net zero targets and reductions on pathways limiting temperature increase to 1.5 °C and likely below 2 °C that are allocated cost effectively and via fairness principles based on equality, responsibility, and capability. It should be noted that not all approaches are consistent with the Paris Agreement's temperature goal and its notion of common but differentiated responsibilities and capabilities. Of the fourteen NDCs for 2035 that are submitted by these countries, eight are in line with a linear trajectory towards their net zero target. For the others, a stronger rate of mitigation will be needed after 2035. The new NDCs are mostly insufficient to limit global warming to 1.5 °C (with limited overshoot), as only five of them are in line with any of the corresponding allocations. In more cases, they are aligned with limiting global warming to likely below 2 °C, with almost all of them in line with at least one of the corresponding allocations. However, it should be noted that if NDCs align with different allocations, this does not imply that their sum is sufficient to meet required reductions.

A need for ambitious new NDCs

In 2025, countries stated Nationally Determined Contributions (NDCs; mitigation ambitions) under the Paris Agreement, with the intention to achieve its global goal of keeping the increase in temperatures well below 2°C while pursuing efforts to limit the increase to 1.5 °C. Many countries communicated new NDCs containing emissions-reduction targets for 2035, ideally alongside strengthened targets for 2030. Of the 180 Parties[1] that have an active NDC, 104 submitted new NDCs with 2035 mitigation targets by end of March 2026 (UNFCCC 2026). Only around 15 Parties, collectively contributing to about 1% of global emissions, updated their existing NDC-2030 targets in these submissions (ClimateWatch 2026).

The Paris Agreement prescribes that NDCs should reflect a country's highest possible ambition. Additionally, targets should reflect common but differentiated responsibilities and capabilities in light of different national circumstances (UNFCCC 2026). This was reiterated in the results of the first Global Stocktake in 2023, a process established under the Paris Agreement to assess the status of global climate policy, which concluded that the then-active NDCs were not yet in line with the reductions required to reach the temperature goal (UNFCCC 2024). In this policy brief[2], we assess whether the new NDCs fulfil these aspects of the Agreement. We analyse the emissions impact and ambition of the submitted targets for 2035 by addressing two questions: a) whether the new NDCs collectively meet the global climate goal of the Paris Agreement, and b) whether the new NDCs as submitted by individual countries are ambitious.

New NDCs increase the gap with pathways in line with the Paris goal

The adoption of the new NDCs provides a significant framework to reduce greenhouse gas emissions (GHG) on a global scale. There are both conditional and unconditional NDCs[3]; the implementation of new unconditional NDCs leads to projected global greenhouse gas emissions of around 51–51.5 $GtCO_2eq$ by 2035, which implies a reduction of about 8–9% compared to 2019 levels (Figure 1). When we also consider new NDCs that are conditional to international support, global emissions decrease by around 1.5 $GtCO_2eq$, thereby increasing the reduction compared to 2019 to around 10–11%. This total emission reduction estimation is higher than the simple aggregation of NDCs. This is because emissions projections resulting from current policies scenarios are applied for

[1] The European Union and its 27 individual Member States are considered as one Party.

[2] This policy brief is based on research described in more detail in den Elzen et al. (2026).

[3] Some countries have (in some cases additional to an unconditional NDC) conditional NDCs, meaning they depend on various conditions, such as the ability of national legislatures to enact necessary laws, ambitious action from other countries, realisation of finance and technical support, and other factors.

countries where these projections lead to lower emissions than those based on the submitted NDC target (e.g. China, India, and the Russian Federation) [4]. Emissions resulting from current policies scenarios are also assumed for countries without any active NDC (such as the United States of America), while levels as communicated in the NDC for 2030 are assumed for countries that did not submit a new NDC for 2035 yet.

To evaluate the progress towards achieving the global climate goal of the Paris Agreement, we compare the collective impact of the new NDCs to global scenarios limiting end-of-century global warming to 1.5° C (with >50% chance) and likely below 2° C (>67% chance). The projected reductions resulting from the new NDCs are not sufficient to align with the 59% (median of range 52–65%) below 2019 levels that is required to limit global warming to 1.5 °C with limited overshoot (IPCC AR6 climate category C1) according to pathways collected in the IPCC AR6 scenario database. They are also not in line with the 33% (median of range 27–43%) that these scenarios require to limit global warming to likely below 2 °C (IPCC AR6 climate category C3).

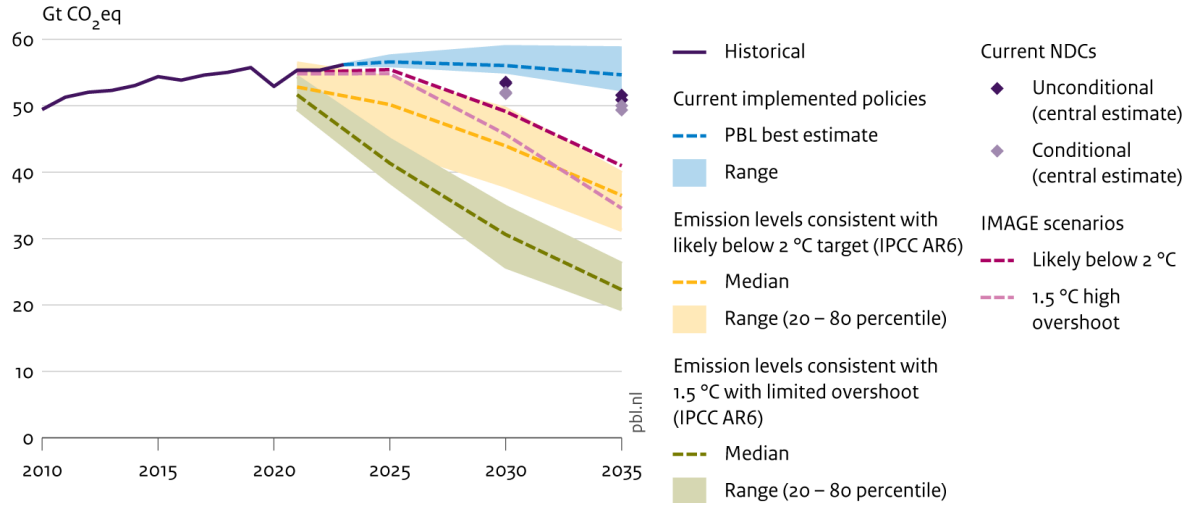
Global emission levels resulting from the new NDCs represent an additional reduction of around 2.5 $GtCO_2eq$ by 2035 compared to the levels expected from NDCs by 2030. However, at the same time, the 2035 targets of the new NDCs imply a significant increase of the ambition gap between the NDC emission levels and emission levels on median pathways of IPCC AR6 scenarios, compared to the ambition gap in 2030 (on which new submissions that have updates for 2030 have limited influence). For unconditional[5] NDCs, the ambition gap by 2035 is 28–29 $GtCO_2eq$ when comparing to scenarios in line with 1.5 °C (with limited overshoot) (see Figure 1, green line), 6 $GtCO_2eq$ higher compared to 2030. The gap is 14–15 $GtCO_2eq$ for pathways limiting to likely below 2 °C (see Figure 1, yellow line), increasing by 5 $GtCO_2eq$ compared to 2030.

The comparison with the IPCC AR6 database is valuable because it contains an elaborate set of scenarios that is widely used. However, these scenarios assume that ambitious emissions reductions start from 2020 and already result in strong reductions in global GHG emissions during 2020–2025. Therefore, we also make a comparison with more recent scenarios developed with the IMAGE model, since these start with mitigation efforts in 2025. Starting mitigation efforts by 2025 makes it infeasible to limit global warming to 1.5 °C with limited overshoot (IPCC AR6 climate category C1) (Reisinger et al. 2025); therefore, we use a scenario that limits global warming to 1.5 °C with high overshoot (IPCC AR6 climate category C2). The IMAGE scenarios project smaller reductions: 37% by 2035 to limit global warming to 1.5 °C with high overshoot and 25% to limit global warming to likely below 2 °C. The ambition gaps compared to more recently developed IMAGE scenarios are smaller but still significant: 16 $GtCO_2eq$ when comparing unconditional NDCs to the 1.5 °C with high overshoot scenario, and 10 $GtCO_2eq$ when comparing to the scenario that limits global warming to likely below 2 °C. Compared to the ambition gaps by 2030 with the same IMAGE scenarios, the gaps by 2035 represent an increase of around 8.5 $GtCO_2eq$ for 1.5 °C with high overshoot, and around 5.5 $GtCO_2eq$ for likely below 2 °C.

[4] Not taking into account overachievement of NDCs with current policies leads to an increase in global emissions of 6.0-6.8 $GtCO_2eq$ in emissions for unconditional new NDCs, 5.6-6.4 $GtCO_2eq$ when also including conditional new NDCs. Including these emissions leads to full implementation of the NDCs even exceeding the global emissions projections of current policies.

[5] When also including conditional NDCs, ambition gaps are around 1.5 $GtCO_2eq$ smaller. Comparing the gaps with those for 2030 yields similar results as for unconditional NDCs.

Figure 1
Global greenhouse gas emissions (including emissions from land use) for NDCs and under different scenarios[6], derived from Den Elzen et al. (2026).



The global implementation gap between projected emission levels under the NDC targets and under current implemented policies is 3–4 $GtCO_2eq$ by 2035, which does not represent a significant increase compared to the implementation gap of around 2.5 $GtCO_2e$ by 2030. Countries contribute to this implementation gap in substantially different ways. Although there are countries for which the new NDC leads to significant reduction targets and a large implementation gap compared to current policy projections (e.g. Brazil), there are also countries for which the implementation gap is limited (e.g. the EU, Japan, and South Africa), as their NDC target is in line with the emissions projected under the current policies. For another group of countries (such as China, the Russian Federation and India), the new NDC targets are less ambitious than emission levels resulting from current policies projections (i.e. a negative implementation gap). However, note that this assessment is subject to considerable uncertainty because of uncertainty ranges around current policies projections (Dafnomilis et al. (2025)).

[6] Sources are PRIMAP (Gütschow et al. 2025) for historical emissions, Byers et al. (2022) for scenarios from the IPCC AR6 scenario database, Roelfsema et al. (2026) for scenarios developed with the IMAGE model, and Dafnomilis et al. (2025) for the scenario representing current implemented policies.

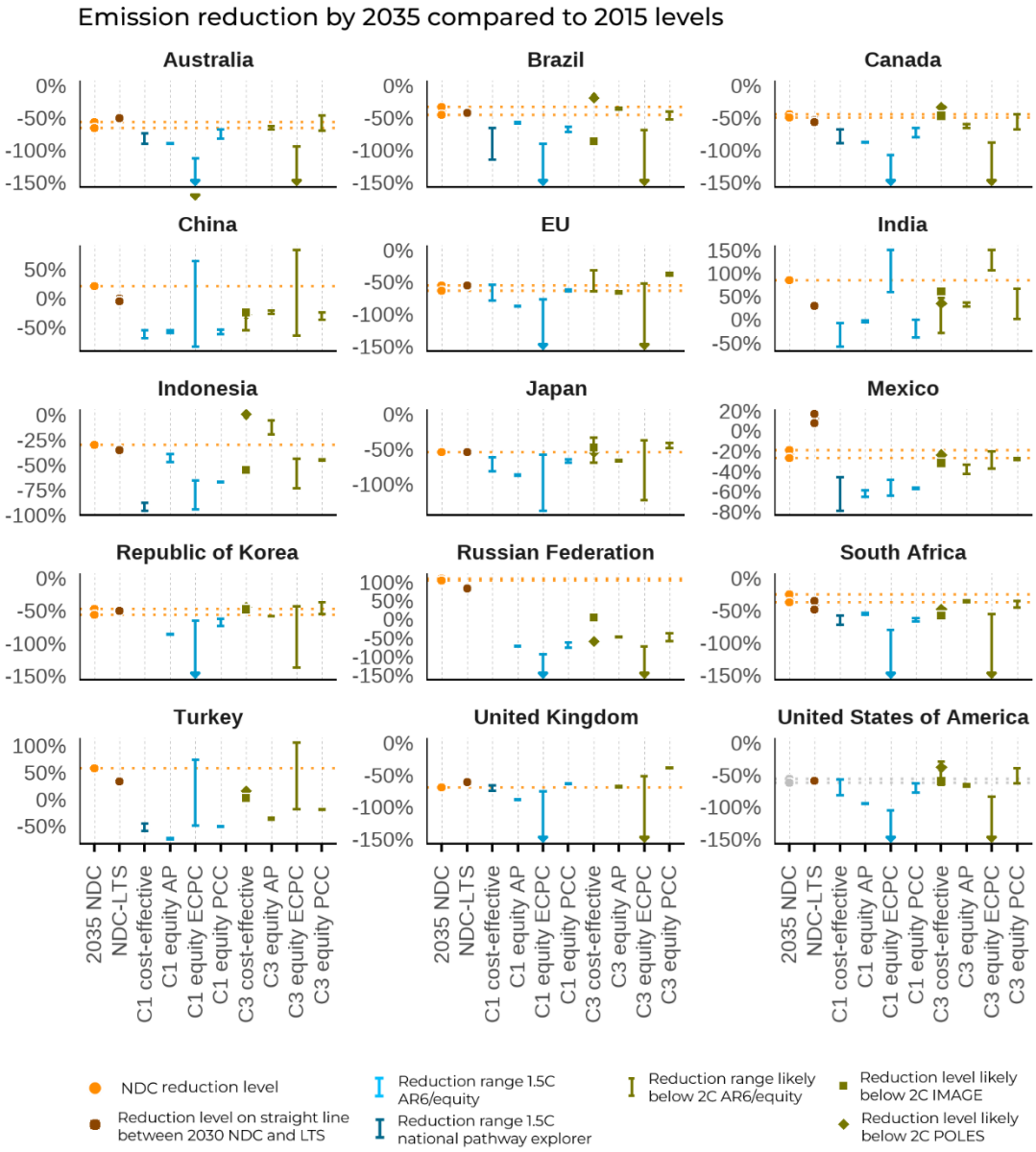
Various NDCs align with net zero targets or reductions limiting global warming to likely below 2 °C, few align with limiting warming to 1.5 °C

We assess the ambition of new NDCs of G20 economies by evaluating their alignment with three approaches: national net zero targets, globally cost-effective 1.5 °C and likely below 2 °C pathways, and 1.5 °C and likely below 2 °C pathways allocated via fairness principles. It is important to apply multiple approaches, as each of them has specific benefits and disadvantages, as discussed below.

To assess alignment with *national net zero targets*, we compare projected 2035 emissions levels from the new NDCs with emission levels on a linear path between the 2030 NDC emission levels and the net zero targets[7]. This evaluation has value in the national context; for many countries, the NDC for 2035 is key in aligning short-term mitigation with long-term strategies, as it marks the midpoint between when they started NDC implementation in 2020 and their net zero year planned by (usually) mid-century. However, comparing a linear path to net zero emissions is less suitable for countries that have not yet peaked in emissions and expect an increase in emissions before they progress towards their net-zero pledges. Additionally, this approach does not provide any information about the contribution of a NDC in the context of global climate goals: both the net zero target and the linear trajectory leading to it may not align with that goal. This is better represented when comparing to scenarios limiting global warming to 1.5 °C and likely below 2 °C. *Globally cost-effective 1.5 °C and likely below 2 °C scenarios* show the most cost-effective emission reductions among Parties. However, these scenarios do not necessarily provide an allocation of emissions reductions among different Parties that can be considered as fair. *Fairness principles* can be applied to allocate the global emissions budget across countries in a fair way. While reduction targets allocated via these principles illustrate what fair targets might look like, the results can be ambiguous due to the lack of a joint vision on which fairness principle and parameter settings to apply, with outcomes highly dependent on that (Robiou du Pont et al. 2017, Dekker et al. 2025b). Additionally, deviating from cost optimal implementation may increase the costs of reaching the global temperature goals and may give rise to feasibility concerns for domestic implementation. Robiou du Pont et al. (2025) and Dekker et al. (2025b) therefore suggest that the difference between cost-optimal reductions and fair shares can be interpreted as emission allowances that countries ideally buy or sell to achieve their NDC, as facilitated by Article 6 of the Paris Agreement.

[7] As of the end of March 2026, 107 Parties have pledged to reach net zero emissions in their Long Term Strategy. We derived details on net zero years and coverage from the net zero tracker (Lang et al. 2025). For countries with unspecified GHG coverage, we determined two varieties: one in which we assume the target implies net-zero GHG emissions, and one in which it implies remaining non-CO_2 emissions.

Figure 2
Emission reduction by 2035 compared to 2015 levels for G20 economies based on their unconditional 2035 NDC, a linear trend between their 2030 NDC and net zero target (NDC-LTS), cost-effective scenarios in line with global warming of 1.5°C with limited overshoot (C1 cost-effective) and likely below 2°C (C3 cost-effective), and the 1.5°C and likely below 2°C-aligned allocations based on effort-sharing rules ability to pay (C1/C3 equity AP), equal cumulative per capita (C1/C3 equity ECPC), and per capita convergence (C1/C3 equity PCC)[8]. Arrows at -150% levels indicate ranges beyond these reductions. Figure derived from Den Elzen et al. (2026).



[8] Sources: Dekker et al. (2025a) for the allocations based on fairness principles. Cost-effective allocations are included in the figure depending on regional availability and based on Hooijschuur et al. (2025) for the range from AR6, Climate Analytics (2025) for range from the national pathway explorer, and Roelfsema et al. (2026) and Keramidas et al. (2025) range based on IMAGE and POLES respectively.

Most G20 Parties submitted new NDC mitigation targets[9] that are in line with their net zero target. For eight of the fourteen Parties[10], projected reduction levels are below a linear trajectory towards their net zero target (Figure 2). Of the six remaining Parties, most will need to increase their rate of reduction after meeting their NDC in 2035 slightly to reach their net zero target (Canada, Indonesia, the Russian Federation, Türkiye), while India and China need to increase ambition further.

The new NDCs are mostly insufficient to limit global warming to 1.5 °C (with limited overshoot); only five of them are in line with any allocation of reductions. When comparing to reductions projected for 2035 by globally cost-effective scenarios, only two Parties (the EU and United Kingdom) submitted NDCs within that range. To compare with fairness principles, three commonly used allocation rules were applied: ability to pay (AP), equal cumulative per capita (ECPC), and per capita convergence (PCC)[11] (Dekker et al. 2025b). The ECPC-based ranges can be especially wide, as results from this method are substantially impacted by the year from which historical emissions are included, how these historical emissions are weighted, and in which year historical leftovers or debts should have been accounted for (Dekker et al. 2025b). When applied to scenarios limiting global warming to 1.5 °C (with limited overshoot), no NDC is in line with ranges from allocation via AP, two are in line with the ranges from allocation via PCC (the EU and the United Kingdom), and three are in line with the ranges resulting from ECPC allocation (China, India, and Türkiye).

When comparing with reductions projected for 2035 by scenarios limiting global warming to likely below 2 °C, NDCs are aligned more often. At least half of the NDCs are within the range projected for staying likely below 2 °C by globally cost-effective scenarios (Brazil, Canada, EU, Indonesia, Japan, Mexico, and the Republic of Korea, while for Australia and the United Kingdom no information is available from the scenarios used to assess this). When effort-sharing allocation rules are applied, most NDCs are aligned with the ranges resulting from PCC allocation (nine) and/or ECPC (eight), while less NDC's are in line with the ranges from AP allocation (five). Although the NDCs of most Parties (all, except the Russian Federation) are aligned with at least one allocation, it should be noted that this does not necessarily mean they are in line with limiting global warming to likely below 2 °C collectively, as attractive allocations for one country are typically based on a fairness principle and parameter settings that lead to more stringent allocations for another (Robiou du Pont et al. 2018).

The assessment in this policy brief is based on a limited set of approaches, and more or alternative viewpoints could be explored. However, we conclude that according to multiple approaches, Parties should increase the ambition in their NDC submissions to keep the climate goal of the Paris Agreement within reach.

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[9] For China and India, emission levels resulting from NDCs are highly uncertain as they are based on unspecified peak emissions and GDP growth rates (details are provided by Den Elzen et al. (2026))

[10] Numbers exclude the United States of America, for which the NDC is no longer active.

[11] Ability to pay is an income-based allocation, reflecting the equity principle of capability. It is based on GDP per capita fractions. Per capita convergence reflects equality. It starts at the current emissions distribution, and converges over time to equal per capita emissions. Equal cumulative per capita accounts for historical emissions, reflecting responsibility. It spends a remaining budget based on historical emissions and population, and converges to a per capita allocation (Dekker et al. 2025b).

References

Byers, E., V. Krey, E. Kriegler, K. Riahi, R. Schaeffer, J. Kikstra, et al. (2022). *AR6 scenarios database.* Zenodo.

Climate Analytics (2025). *1.5 °C national pathway explorer.* Berlin: Climate Analytics.

ClimateWatch (2026). *NDC tracker.* Washington, DC: World Resource Institute.

den Elzen, M.G.J., E. Hooijschuur, I. Dafnomilis et al. Analysis of the impact and ambition of the new NDCs for 2035: Paris climate goal is further out of reach, 21 May 2026, PREPRINT (Version 1) available at Research Square

Dafnomilis, I., et al. (2025). *Progress of major emitters towards climate targets: 2025 update.* Cologne: NewClimate Institute, and the Hague: PBL Netherlands Environmental Assessment Agency.

Dekker, M. C. Würschinger, R. van Heerden, E. Hooijschuur, I.S. Tagomori, and D.P. van Vuuren (2025a). *Fair emissions allocations under various global conditions* (0.4.2). Zenodo.

Dekker, M., A.F. Hof, Y. du Robiou Pont, N. van den Berg, V. Daioglou, M. den Elzen, and D.P. van Vuuren (2025b). 'Navigating the black box or fair national emissions targets.' *Nature Climate Change* 15: 752-759.

Gütschow, J., D. Busch, and M. Pflüger (2025). *The PRIMAP-hist national historical emissions time series (1750-2024).* Zenodo.

Hooijschuur, E., M.G.J. den Elzen, I. Dafnomilis, and D.P. van Vuuren (2025). 'Analysis of cost-effective reduction pathways for major emitting countries to achieve the Paris Agreement climate goal.' *Global Environmental Change Advances* 4.

Keramidas, K., F. Fosse, L. Aycart, P. Dowling, R. Garaffa, J. Ordonez, and A. Schmitz (2025). *Global Energy and Climate Outlook 2024.* Luxembourg: European Commission.

Lang, J., C. Hyslop, D. Manya, S. Smith, P. Chalkley, J.B. Galang, and H. Tatlow (2025). *Net Zero Tracker.* Oxford: Energy and Climate Intelligence Unit, Data-Driven EnviroLab.

Nascimento, L., M. den Elzen, T. Kuramochi, S. Woollands, I. Dafnomilis, M. Moisio, and A. Gutierrez (2024). 'Comparing the sequence of climate change mitigation targets and policies in major emitting economies.' *Journal of Comparative Policy Analysis* 26: 233-250.

Reisinger, A., J. S. Fuglestvedt, A. Pirani, O. Geden, C. D. Jones, S. Maharaj, E. S. Poloczanska, A. Morelli, T. G. Johansen, C. Adler, R. A. Betts, S. I. Seneviratne (2025). 'Overshoot: A Conceptual Review of Exceeding and Returning to Global Warming of 1.5°C.' *Annual Review Environment and Resources*. 50: 185-217.

Robiou du Pont, Y., M. Meinshausen (2018). 'Warming assessment of the bottom-up Paris Agreement emissions pledges.' *Nat Commun* 9.

Robiou du Pont, Y., M. Dekker, D. van Vuuren, and M. Schaeffer (2025). 'Effect of discontinuous fair-share emissions allocations immediately based on equity.' *Nature Communications* 16.

Roelfsema, M., I. Dafnomilis, M. den Elzen, M. Harmsen, H.-S. de Boer, J. Doelman, and D. van Vuuren (2026). 'Staying on track: A bottom-up Paris-aligned pathway driven by COP initiatives.' *Energy and Climate Change* 7.

UNFCCC (2015). *FCC/CP/2015/L.9/Rev.1: Adoption of the Paris Agreement.* Paris: UNFCCC.

UNFCCC (2024). *FCCC/PA/CMA/2023/16/Add.1: Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its fifth session, held in the United Arab Emirates from 30 November to 13 December 2023.* Paris: UNFCCC.

UNFCCC (2026). *NDC Registry.* Paris: UNFCCC.