Transition Risk

The COP30 Net Zero Atlas

LSEG

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COP30 – a defining juncture for global climate cooperation

Over the past decade, the Paris Agreement's central mechanism, the Nationally Determined Contribution (NDC) process, has coordinated meaningful emissions commitments across sovereign states. The Agreement's ultimate goal – limiting global warming to well below 2°C and pursuing efforts toward 1.5°C – remains out of reach under present pledges. However, despite the absence of a formal enforcement mechanism, the process has steadily raised ambition and lowered projected global emissions.

On conclusion of the Agreement in 2015, 195 Parties submitted initial 2030 emissions reduction targets (NDCs 1.0). 174 Parties subsequently revised these 2030 pledges (with the enhanced pledges referred to as NDCs 2.0). While the NDC 1.0 aimed for annual emissions to hit 70% above 1990 levels by 2030, the updated NDC 2.0 reduced this to c. 50%, with a peak before 2030 – a target that remains within reach (see Box 1).[1]

Now, the five-year review process of the Agreement asks countries to set a new, third generation of commitments for 2035, known as the NDCs 3.0.

For the first time, this will require governments on record to outline concrete national GHG reduction trajectories for the coming decade. These national targets will shape the transition risk environment for investors and companies. Ultimately, they also define global emission pathways, making them key to gauging temperature outcomes and physical-risk exposure over the coming decades (see our Physical Risk chapter).

This makes the COP30 Summit, where governments are meant to formalise the NDCs 3.0 commitments, a critical litmus test. Whatever its outcome, it will send a powerful policy signal to companies and investors about governments' decarbonisation intentions and their ability to effectively collaborate on global climate action.

Stress testing the Paris Agreement

Political fragmentation and geopolitical tensions have significantly delayed the submission of new NDCs in the run up to the Summit in Belém, leaving the Paris process hanging in the balance.

After the **US** – the world's largest economy and second-largest emitter – withdrew from the Paris Agreement in January 2025,[2,3] most other signatories missed the formal February UNFCCC deadline for NDC submission. A few notable exceptions included the **UK**, **Japan**, and COP-host **Brazil**.

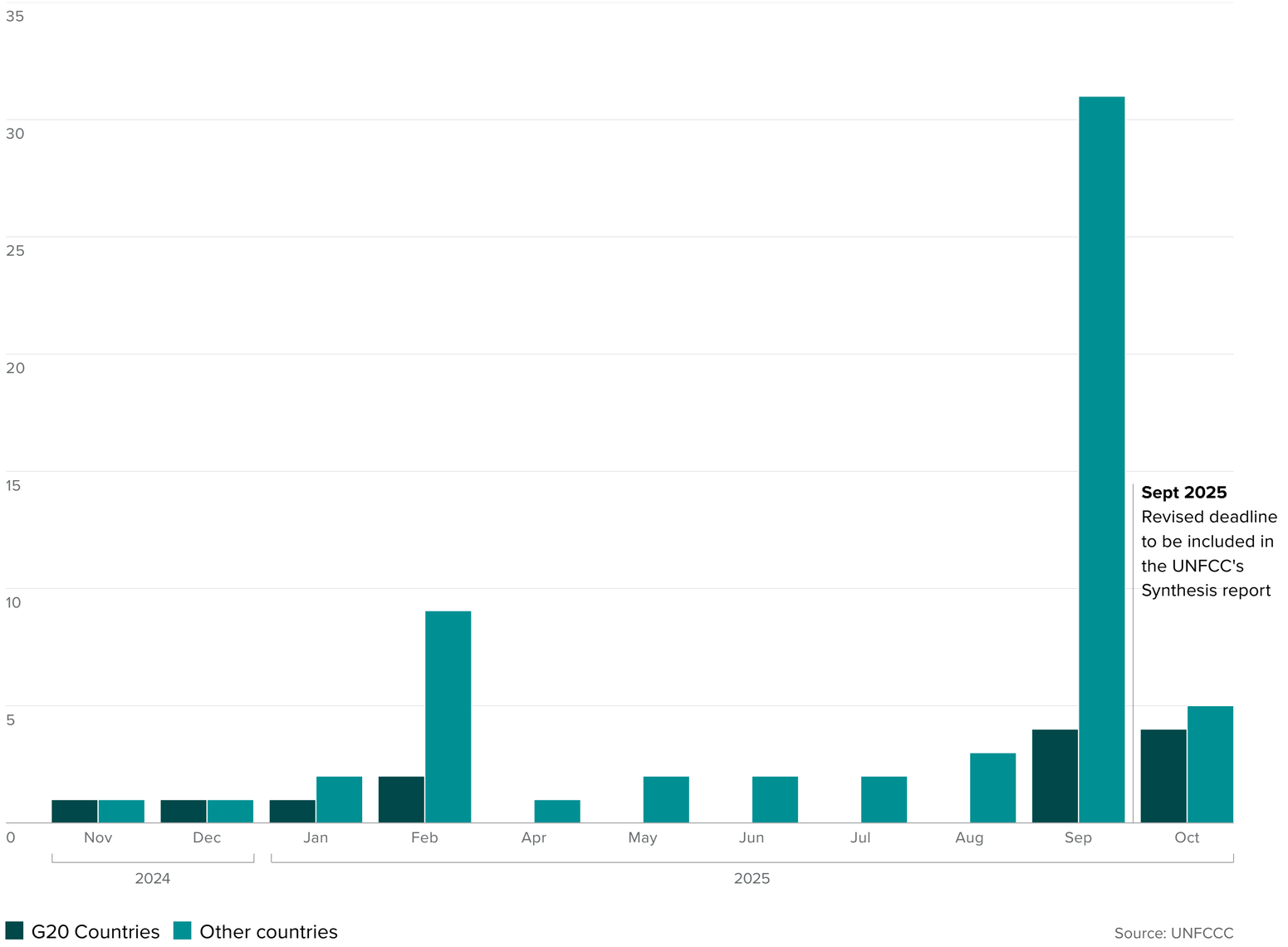
Meanwhile, persistent tensions within and among EU Member States have repeatedly stalled the formal adoption of a 2035 target for the bloc.[4] To date, the world's fourth-largest GHG emitter has issued only a non-binding statement of intent for its NDC 3.0. This delay has further undermined momentum, given the EU's historic role in driving global negotiations through early, ambitious climate goals.

However, a string of recent announcements in September and October have shifted the landscape. Over 70 countries have now either formally submitted new 2035 targets, informally outlined their new commitments, or publicly committed to the NDCs (Figure 2).[5]

This includes key emerging economies, with new UNFCCC submissions from **Indonesia**, **Russia** and **South Africa**; and recent public announcements outlining new targets from the **EU**, **China**,[6] **Türkiye**,[7] and **South Korea**.[8] **India**[9] and **Mexico**[10] have signaled they are in the process of preparing their submissions but specifics remain undisclosed. Among G20 countries, this leaves only **Argentina** and **Saudi Arabia** – alongside the US – without new climate commitments in the run-up to COP30.

Against a backdrop of geopolitical strains and acrimonious negotiations over climate finance,[11] an inconclusive summit in Belem could still derail the NDC process – and even call the foundations of the Paris Agreement itself into question. Conversely, a COP30 anchored by firmed up 2035 commitments from major actors could keep the Paris process on track and underscore the resilience of the NDC mechanism despite significant headwinds.

Figure 2. No. of submissions of NDCs 3.0. To date, only one third of Parties have set a 2035 target



Source: UNFCCC

G20 countries' NDCs 3.0 submissions

Nov 2024	Brazil
Dec 2024	United States
Jan 2025	United Kingdom
Feb 2025	Canada Japan
Sep 2025	Australia China* European Union* Russia
Oct 2025	Indonesia South Africa South Korea* Türkiye*

* NDC 3.0s from these states are not yet formally submitted to the UNFCCC registry or are in preliminary draft form

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Box 1. Are the G20 still on track for the 2030 NDC 2.0 milestone?

While governments deliberate new NDCs, we analyse how countries have been progressing towards their existing 2030 targets (NDCs 2.0).

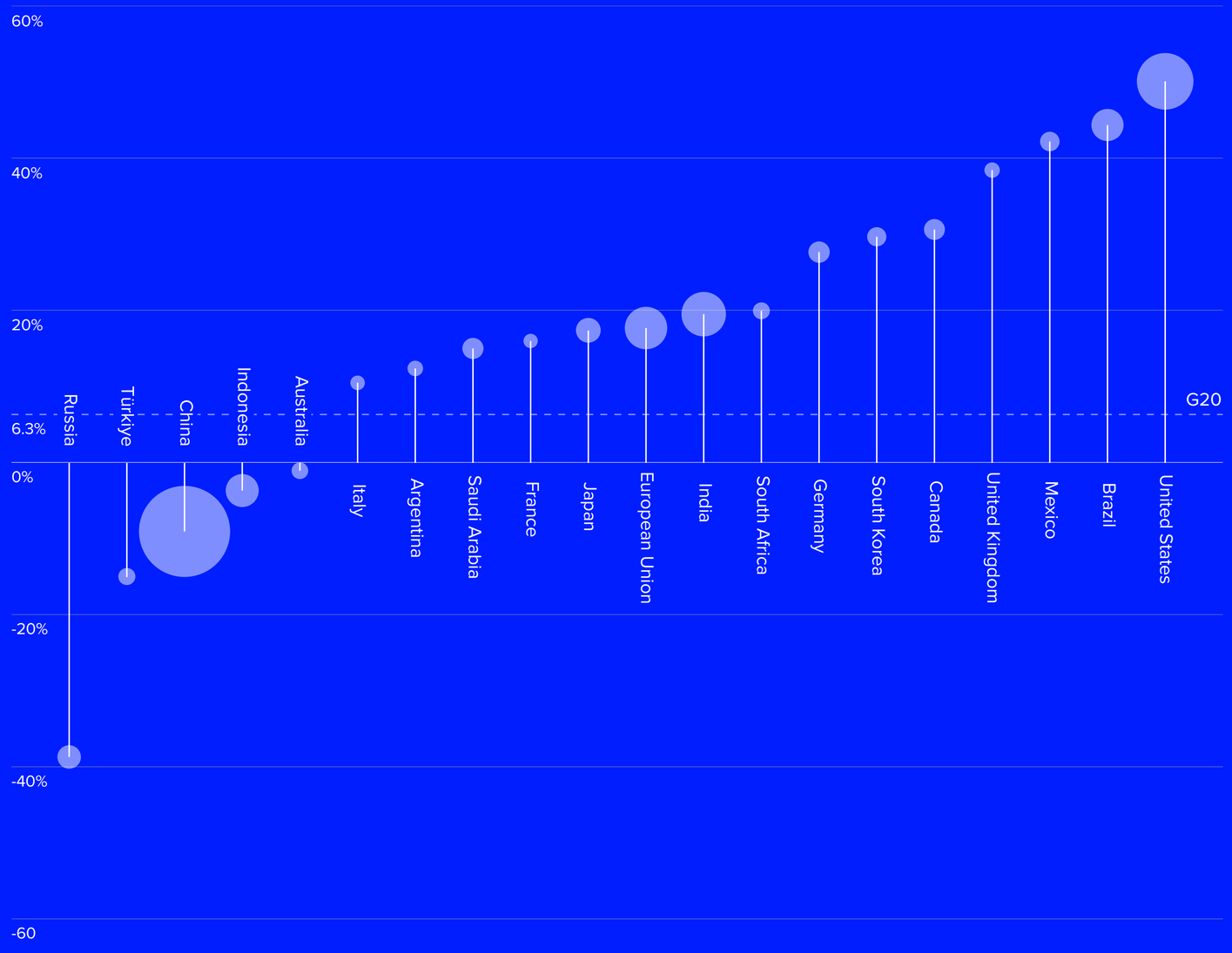
For this, we work with experts from the NewClimate Institute to project G20 countries' 2030 emissions based on currently enacted policies (rather than future targets). The gap between these 'Current Policies' projections and the 2030 NDCs is a measure of the 'implementation gap' – how close countries are tracking towards achieving their self-set climate goals.

Our data shows that while the G20 are not yet on track to deliver on the NDCs 2.0, they remain within reach. Without further policy action, G20 GHG emissions would reach 34.6 $GtCO_2e$ by 2030 – exceeding their aggregated 2030 NDC target by 2.1 $GtCO_2e$ (or c. 6%). This would align with a 2.5°C trajectory for Current Policies compared with 2.4°C for the 2030 NDCs.

However, compared to last year's analysis, this gap between NDCs 2.0 and current policies has widened by 0.4 $GtCO_2e$ for the G20. Key drivers are the USA (+0.6 $GtCO_2e$) and India (+0.35 $GtCO_2e$) – reflecting, respectively, rollbacks related to the One Big Beautiful Bill Act[12] and slower than anticipated renewables deployment coupled with ongoing growth in fossil fuel use.[13] By contrast, in Türkiye, the newly introduced 2035 Renewable Energy Roadmap is set to drive meaningful (0.2 $GtCO_2e$) additional emission cuts by 2030.[14]

Figure 3 shows that this 'implementation gap' differs significantly across the G20. This reflects diverging levels of policy effort, but also differences in the ambition levels of targets. While some G20 members surpass modest commitments, others struggle with the ambitious goals they set for themselves.

Figure 3. 2030 emissions gap relative to NDC 2.0



Note: the size of the circles are proportional to each country's current emissions. The bars positive values show emissions above the NDC 2.0 level.

Source: LSEG

How ambitious are the NDCs announced so far?

The 2035 targets set by G20 economies already represent substantial new climate commitments. Covering fifteen G20 members and 71% of G20 emissions, our data shows they imply a 3.3 to 4.4 $GtCO_2e$ reduction compared to 2030 NDCs. This equates to a 13-18% additional reduction commitment over 5 years.[15]

In aggregate, the announced 2035 targets are broadly consistent with a straight-line trajectory from 2030 targets to countries' long-term commitments, aligning with a temperature increase of 2.2-2.3°C, compared with 2.4°C under G20 NDCs 2.0. The quality and comparability of new targets have also increased, with most NDCs 3.0 now covering all GHG emissions, being economy-wide and expressing commitments in terms of absolute emission reductions.[16]

The new targets also imply an acceleration in emission cuts. For countries with new pledges, average emission reductions are projected to increase from -0.5 to -0.7% per annum in 2023-30 (under NDCs 2.0) to -2.6 to -3.5% p.a. in 2030-35 (under NDCs 3.0).

This is primarily driven by peaking emissions in several emerging economies, including China, Indonesia and Türkiye. Among countries where emissions have already peaked, the 2035 pledges imply faster decarbonisation in some G20 economies (the UK and Australia) offset by decelerating emission cuts in others (Canada and Japan).

Table 1. Announced 2035 targets suggest acceleration in emissions cuts[17]

	Historical (2018–2023)	NDC 2.0 (2023–2030)	NDC 3.0 (2030–2035)
Continuing to decarbonise	Average annual emissions change (% p.a. relative to 2023 emissions)		
Brazil	2.2	-4.3	-1.8 to – 4.1
Canada	-1.5	-4.5 to – 5.3	-1.1
European Union	-3.8	-4.8	-2.8 to – 4.7
France	-3.9	-4.7	-2.8 to – 4.8
Germany	-4.8	-5.6	-2.6 to – 4.3
Italy	-1.7	-4.2	-2.8 to – 5.0
Japan	-3.3	-4.2	-3.7
South Africa	-1.7	-1.5 to – 3.6	-1.3 to – 1.7
Accelerating decarbonisation			
Australia	-1.9	-3.5	-5.0 to – 7.2
South Korea	-2.8	-4.5	-4.6
United Kingdom	-3.7	-4.8	-5.4
Emissions peak			
China	2.2	0.4	-1.9 to – 2.5
Indonesia	4.7	2.5 to 4.3	-0.1 to – 1.5
Russia	-3.2	10.6	-16.2 to – 17.3
Türkiye	0.9	3.6	-1.9
No 2035 NDC Commitment yet			
Argentina	0.7	-1.3	
India	2.5	0.4	
Mexico	2.5	-2.8	
Saudi Arabia	1.1	-0.4	
United States	-2.1	-5.4 to – 5.7 (withdrawn)	-2.8 to – 3.5 (withdrawn)
G20 Total	**0.5**	**-1.2 to – 1.4**	
G20 Total (announced NDC3.0 only)	**0.8**	**-0.5 to – 0.7**	**-2.6 to – 3.5**

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Comparing G20 ambitions

Implied Temperature Rise (ITR) scores (in °C) provide a useful lens for comparing the NDC ambitions across G20 countries. They indicate the global implied temperature increase that would result if every country adopted targets or policies with the same level of ambition as the studied country.[18]

The metric is derived by comparing the cumulative emissions implied by a country's target to its remaining emissions budget (assuming no further reductions beyond the target). The resulting temperature outcome is then calculated, assuming that all other countries would over/undershoot their respective carbon budgets to the same degree.[19]

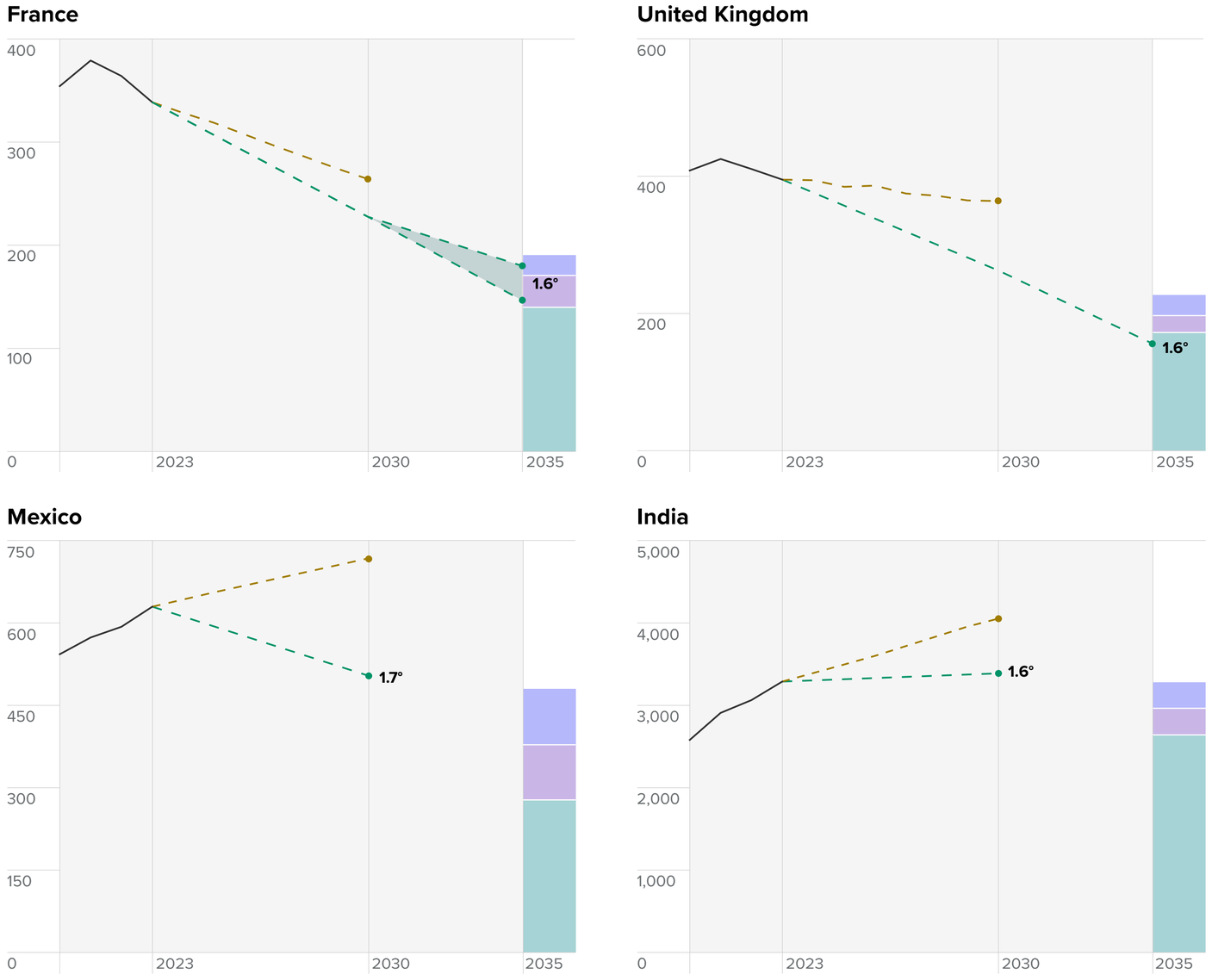
Closest to 1.5°C alignment

Four G20 countries NDCs are currently aligned with the Paris Agreement's 1.5°C goal. **France** and the **UK** both improve slightly from 1.7°C in 2030 to 1.6°C in 2035. **Mexico** and **India** have not yet announced their new 2035 NDCs, but modest historical emissions currently imply low 2030 ITRs at 1.7°C and 1.6°C respectively. As emissions in the latter two countries have not yet peaked, their 2035 targets could result in higher ITRs.

Note: NDC 3.0 Ambition Scenarios are detailed on page 17

Figure 4. Emissions trajectories ($MtCO_2e$) and ITRs (°C) implied by announced NDCs

Source: LSEG



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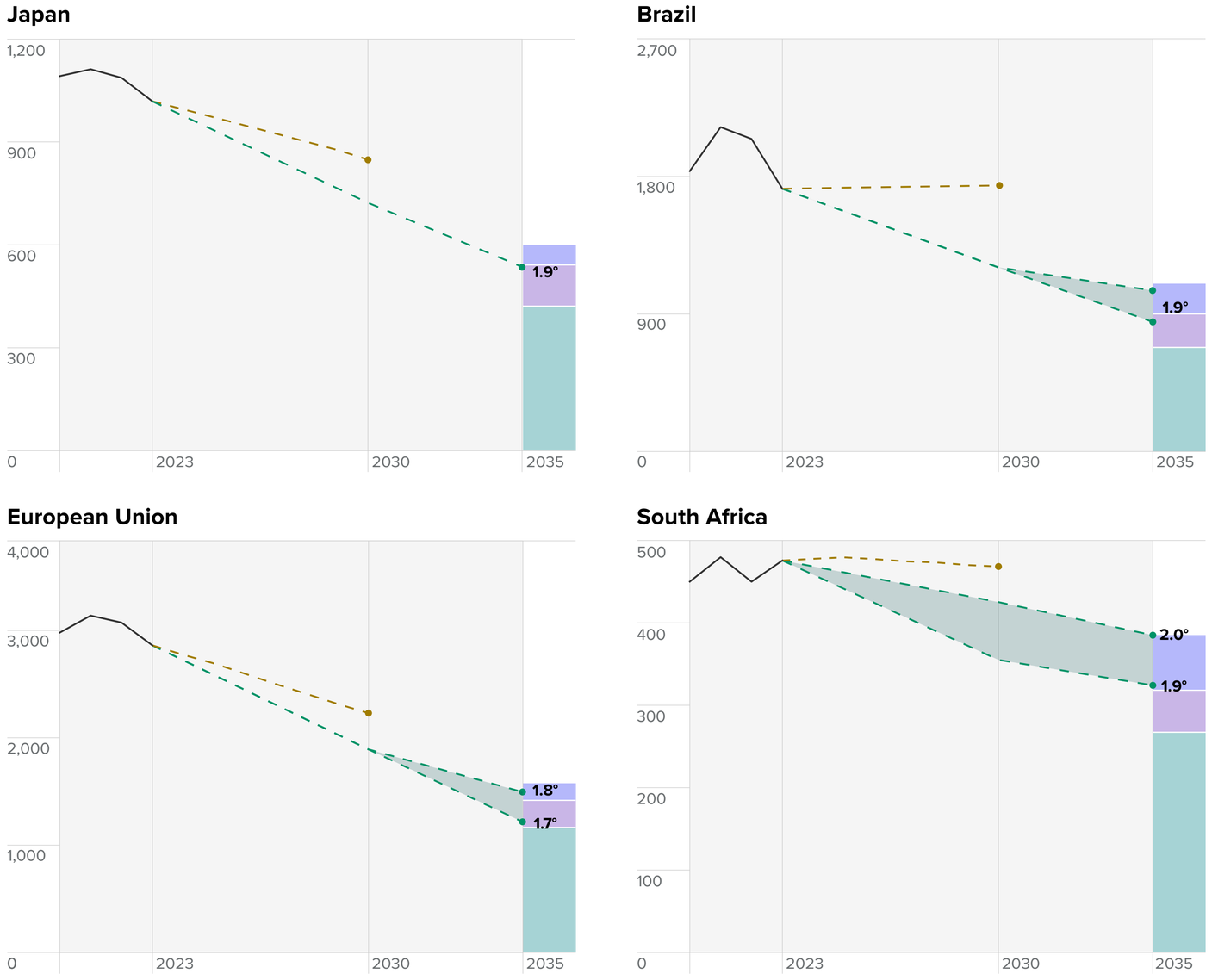
Aligning with below 2°C

Japan's new 2035 NDC, which aligns with a linear decarbonisation pathway to its 2050 net zero target, moves from 2.1°C to 1.9° C, with **Brazil** showing a modest improvement between its 2030 and 2035 NDCs, moving from 2.0°C to 1.9°C. **Germany** and **Italy** move into the below 2°C category with an ITR of 1.8–1.9°C and 1.7–1.8°C respectively. **South Africa**, which recently announced its 2035 target, aligns with 1.9–2.0°C.

Figure 4. Emissions trajectories ($MtCO_2e$) and ITRs (°C) implied by announced NDCs

Source: LSEG



2.0°C or slightly above

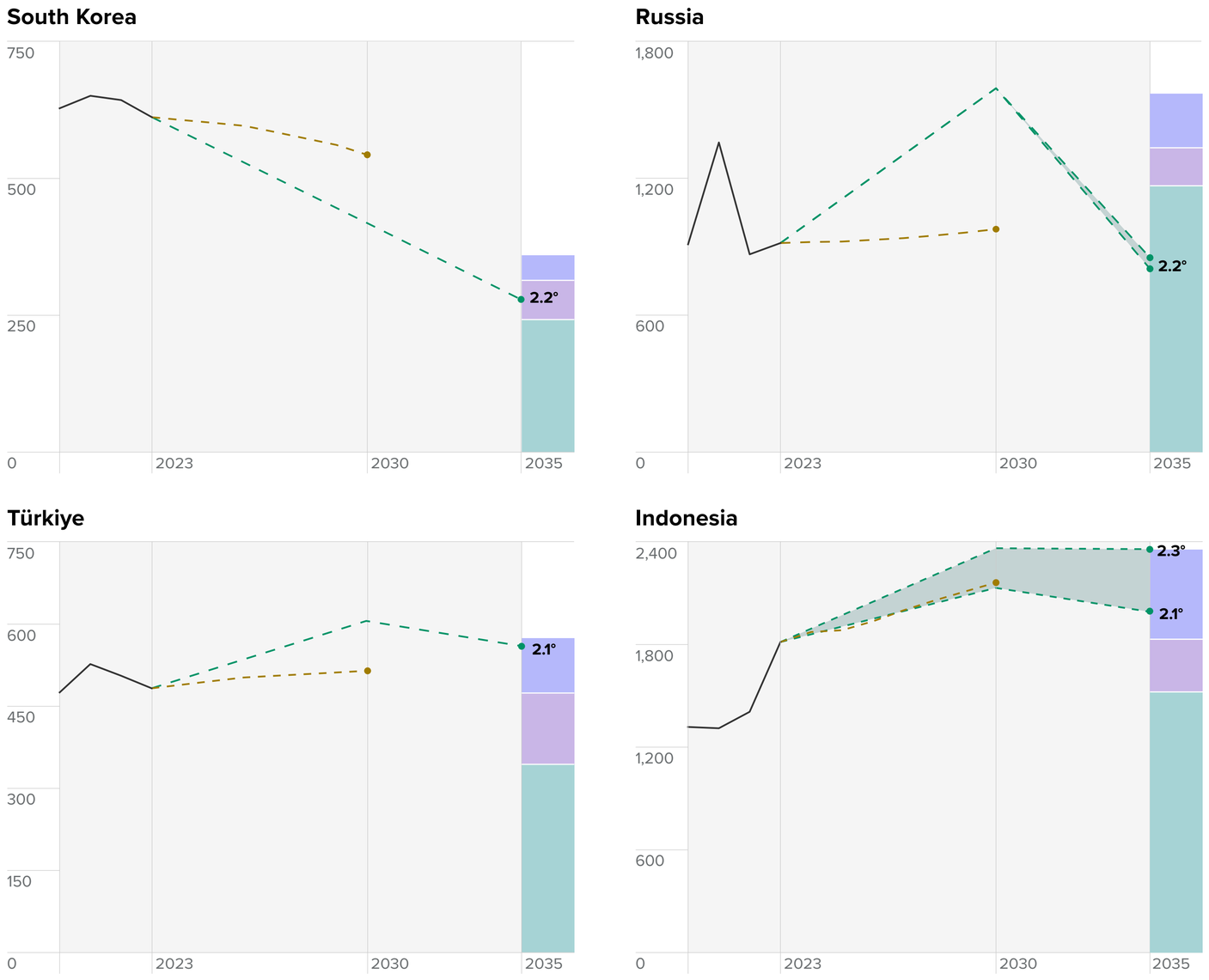
South Korea's new 2035 target, which broadly traces a straight-line from its NDC 2.0 to its net zero target in 2050, lowers its ITR from 2.4°C to 2.2°C. Under its new NDC, **Russia's** ITR drops from 2.7°C to 2.2°C. However, we note that these revisions follow mainly from the government's 2024 restatement of its LULUCF (land use, land-use change, and forestry) inventory, rather than new climate policies.[20]

In **Türkiye**, the 2035 target emissions levels announced by President Erdogan aligns to 2.1°C. This would also imply peak emissions in the early 2030s instead of the current official target of no later than 2038. **Indonesia**, which refined its 2030 and 2035 targets in its recent NDC 3.0, now aligns with a 2.1-2.3°C.

Argentina, which has not yet set a 2035 target, has a 2030 NDC that implies a temperature of 2.3°C.

Figure 4. Emissions trajectories ($MtCO_2e$) and ITRs (°C) implied by announced NDCs

Source: LSEG



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Well above 2°C

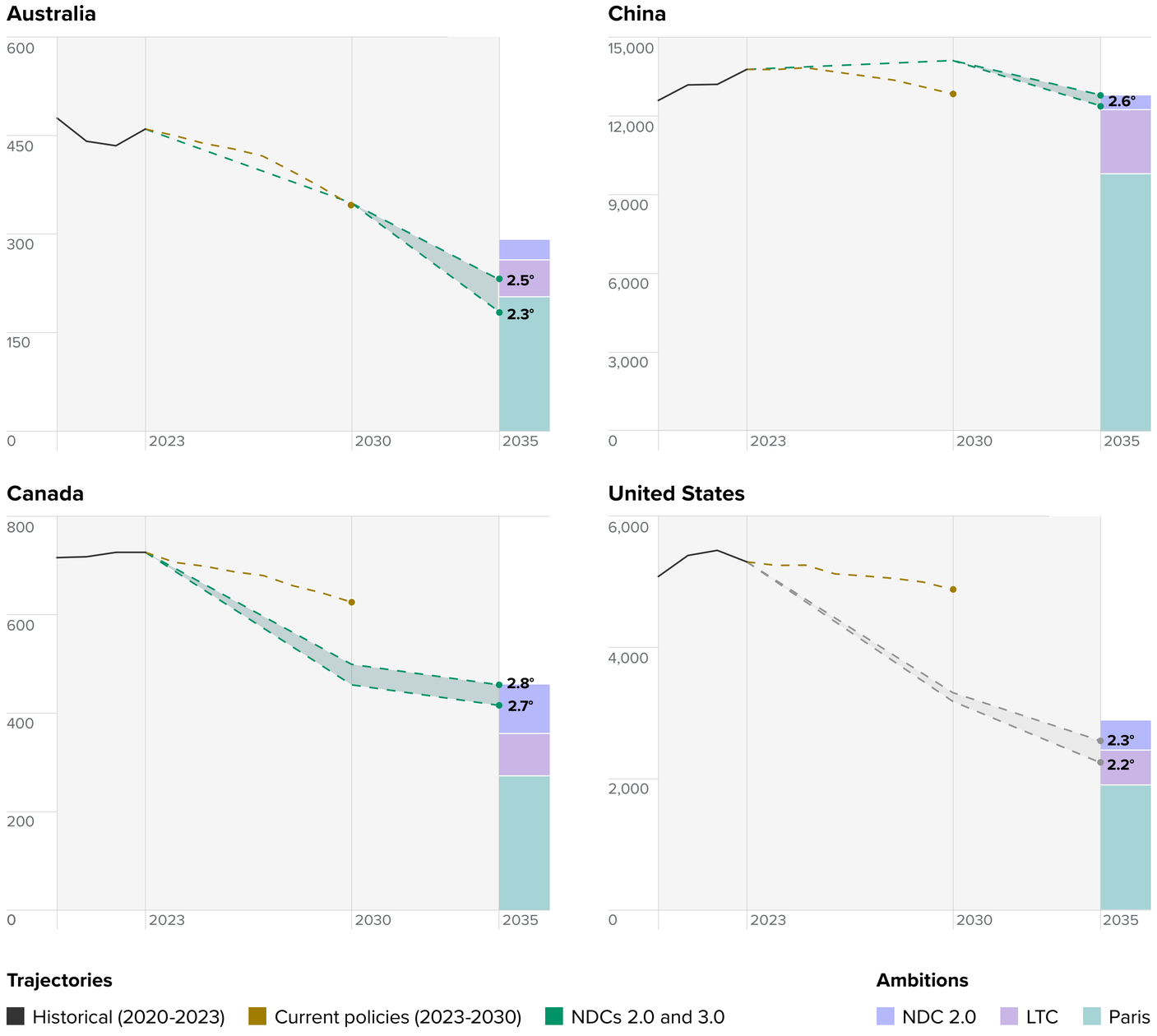
In this group, **Australia** has announced the most ambitious 2035 NDC, resulting in a marked improvement in its ITR from 2.9°C in 2030 to 2.3–2.5°C in 2035.

The 2035 NDCs for **China** and **Canada** align closely with the ambition levels previously expressed in their NDC 2.0 targets, with the former edging down slightly from 2.7°C to 2.6°C while the latter's ITR shows virtually no movement, at 2.7–2.8°C.

The **United States** has rescinded its NDC commitments, including its 2030 target that was aligned with 2.5°C. **Saudi Arabia**, which has not yet announced a 2035 NDC, has a 2030 NDC that aligns with 3.7°C.

Figure 4. Emissions trajectories ($MtCO_2e$) and ITRs (°C) implied by announced NDCs

Source: LSEG



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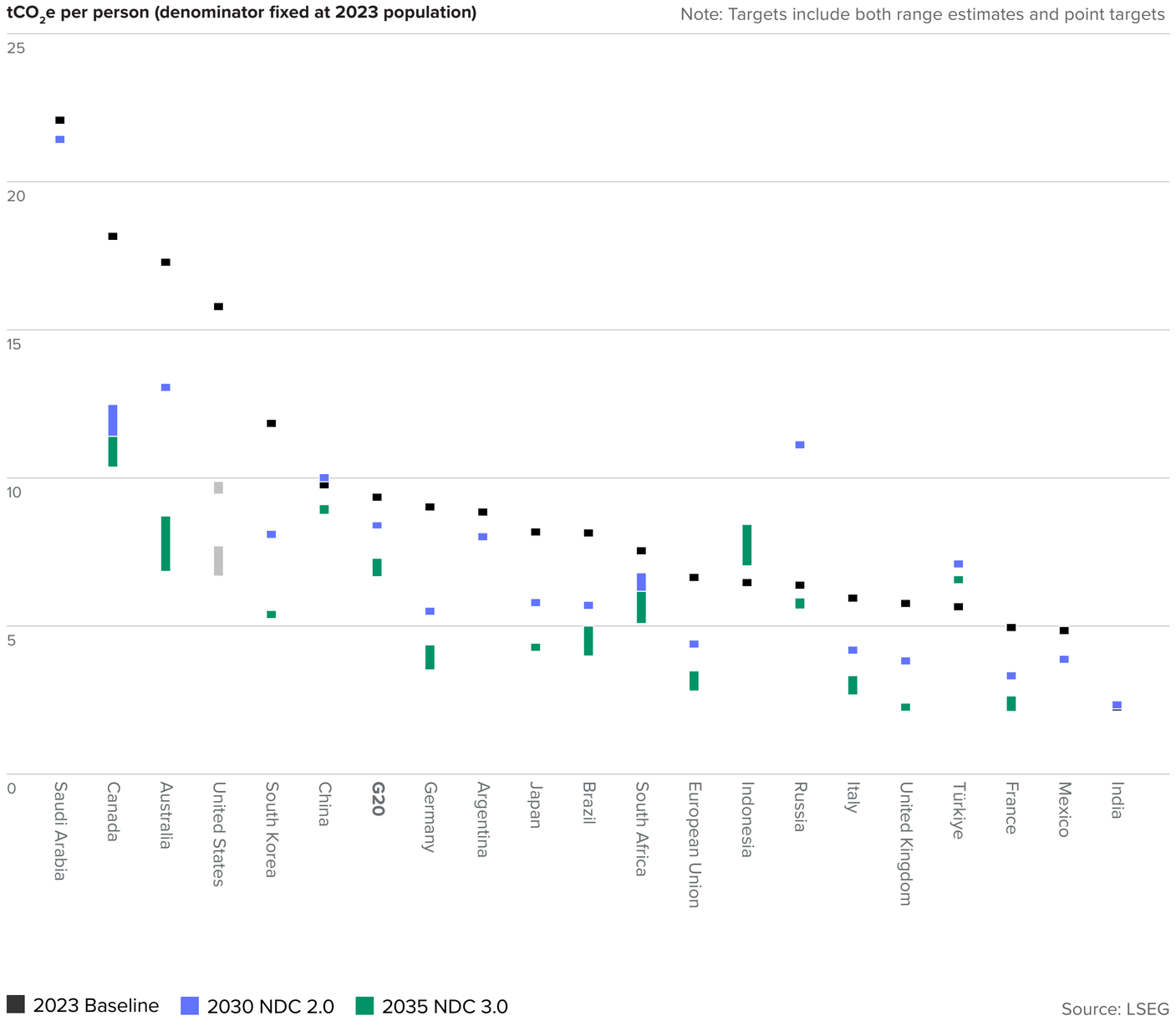
Per-capita emissions: Delivering 2030 and 2035 NDCs would narrow the spread across the G20.

Targets expressed as per-capita emissions levels provide a further useful alternative metric to help indicate where a country is on its decarbonisation journey. High values typically reflect fossil production or carbon-intensive power systems (e.g., Saudi Arabia, Canada, and Australia), whereas lower values can reflect modest energy use per person and less carbon-intensive economies.
On one hand, advanced economies have started trending down through targeted policy, cleaner power, and decarbonisation of their industry and transport sectors. On the other, many emerging economies show flat or rising paths as industrialisation, energy access, and population growth lift demand despite significant deployment of low carbon technologies.

As Figure 5 shows, among countries with 2035 targets, Canada and Australia currently sit highest (about 18 and 17 tCO_2 per person) and are likely to remain among the top per-capita emitters through 2035. For China, achieving its 2030 intensity goal would likely see a per-capita peak around 2030 and a decline by 2035 (from 10 to 9 tCO_2e per person) as the country moves to a less carbon intense energy mix. Lower-intensity advanced economies – the EU, UK, and Japan – project steady, incremental declines (to 2-4 tCO_2e per person), while rapidly developing economies such as India could still see increasing emissions in per capita terms.

Figure 5. G20 emissions per capita in 2023 and as implied by NDC 2.0 in 2030 and NDC 3.0s in 2035



Source: LSEG

Annex

Transition Risk

This annex includes a description of the data, methodologies and references used in our Implied Temperature Rise (ITR) evaluations and physical risk assessments.

A) Climate Liabilities Assessment Integrated Methodology (CLAIM) model

The methodology to define national greenhouse gas (GHG) budgets is critical in calculating the Implied Temperature Rise (ITR) for a country. We rely on the Climate Liabilities Assessment Integrated Methodology (CLAIM) model developed by LSEG.[1] It enables the computation of national GHG budgets compliant with any global temperature target and time horizon (for this report a 1.5°C scenario is selected).

Allocating shares of global emissions budget between countries is a source of scientific and diplomatic controversy. There are two main methodologies: 1. the egalitarian approach and 2. the grandfathering approach. Hybrid approaches are also possible (see Giraud et al. 2017 for further details[2]). The egalitarian approach allocates the same right to GHG emissions to every human being, while the grandfathering approach relies on the idea that the global GHG budget should be divided along the criterion of current emissions, meaning that the weight of each country in global emissions remains stable over time. The CLAIM model does not assign a national budget following a unique criterion, such as 'capacity' or 'responsibility'. Instead, it offers a statistical, and non-normative approach, which avoids choosing between egalitarian or grandfathering sharing.

B) Implied Temperature Rise (ITR) model

The country-level temperature metrics (denoted in °C) presented in this report indicate the global Implied Temperature Rise (ITR) that would result if every country that has a commitment or set of policies with the same level of ambition as the studied country. However, they do not imply that those countries alone can have such an influence on global temperature.

Interpreting these temperature metrics, it is important to note that two countries with a Nationally Determined Contribution (NDC) or long-term commitments, which indicates the same level of emissions reduction, may not share the same ITR. As the methodology also considers historical cumulative emissions, a country that has already used a significant portion of its carbon budget will need to decarbonise at a faster rate than a target year (e.g. 2050) to remain in line with the Paris Agreement’s objectives.

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Method

1. First, we estimate the annual emissions of each country for NDCs, current policies, and for long-term commitments. We calculate this based on the reductions implied by the announced NDCs and long-term commitments, assuming countries meet their goals. For the current policies, we use projections developed by the International Institute for Applied Systems Analysis (IIASA) and NewClimate Institute.[3] These projections operate under the assumption that no additional mitigation measures will be undertaken beyond the policies already in place.

2. We then calculate each country's share of the global 'carbon budget' – the total available emissions budget consistent with a 1.5°C scenario.

    a. We first choose a future emissions pathway that gives a global carbon budget that aligns with a 1.5°C rise in global temperature. The pathway used here is the Net Zero 2050 scenario from the MESSAGEix-GLOBIOM model as presented in the latest phase (Phase IV) of the Network for Greening the Financial Systems (NGFS)'s Climate Scenarios.[4]

    b. We then distribute the annual global carbon budget between countries to obtain a carbon budget per country per year that would align with a 1.5°C trajectory. To do this, we use LSEG's proprietary Climate Liabilities Assessment Integrated Methodology (CLAIM) model which estimates the budget using a statistical approach that factors in historical and current emission levels to determine the remaining GHG allowance for each country.

3. Next, we determine the gap in cumulative emissions between a country's projected emissions for its commitments or current policies and its carbon budget under the 1.5°C scenario from the present until 2060. This 'emissions gap' is the main variable in assessing the alignment of a country with a global warming target.

$$GAP_i = \frac{\sum_{y}^{2060} E_{i,p,y}}{\sum_{y}^{2060} E_{i,1.5,y}}$$

Where i is the given country, y is the current year, p is the projected emissions and 1.5 is the 1.5°C GHG emissions budget as calculated using CLAIM and the global 1.5°C emissions pathway.

4. Lastly, we calculate the ITR above pre-industrial levels for each country and scenario, respectively. This calculation is based on an equation that effectively converts estimated future GHG emission volumes into an ITR for each country. The implied temperature rise is given by the equation:

$$\mathbf{T_i = T_{CO2} + T_{non\text{-}CO2}(T_{CO2})}$$

with $\mathbf{T_{CO2} = TCRE * (GAP_i * B_{tot,1.5}) + T_{hist}}$

and $\mathbf{T_{non=\text{-}CO2} = 0.4085 * T_{CO2} - 0.3942}$

Where T_i is the implied temperature rise of a country, and T_{CO2} and $T_{non-CO2}$ are the implied temperature rise due to CO_2 and non-CO_2 greenhouse gases respectively.

We base the 'allowable' emissions under a 1.5°C scenario – denoted by B_{tot} – on the latest Net Zero 2050 NGFS scenario, defines the global emissions pathway that would keep globally averaged temperature rise to 1.5°C above pre-industrial levels in the year 2100.

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C) Database of decarbonisation targets, trajectories, and policies

The ambition assessments presented within this report focus on the G20 countries.

Historical emissions

Our historical GHG emissions inventories includes the land use, land-use change and forestry (LULUCF) sector. The emissions inventories from this sector are collected by the International Institution for Applied Systems Analysis (IIASA) based on the United Nations Framework Convention on Climate Change (UNFCCC) and the Food and Agriculture Organization (FAO) reported emissions.[5] The emissions from the other sectors are based on the PRIMAP-hist[6] database of the Potsdam Institute (mostly emissions from energy-use, industry and agriculture).

NDCs 2.0 (2030 targets)

The 195 parties to the Paris Agreement have submitted a Nationally Determined Contribution (NDC), as required. However, only 132 of the 2030 NDCs (NDCs 2.0) are concrete enough to be quantifiable, representing 96% of global emissions. The commitments of some developing countries have both conditional (to financing) and unconditional parts. In our assessments, we consider only the unconditional component of the NDC targets.

For NDCs that are based on a percentage reduction from a base year, we calculate the 2030 target using the percentage reduction provided by the country and applied to our own historical inventories for the base year.

Current policies

In this report, we use ‘current policies’ emissions trajectories constructed by the NewClimate Institute and IIASA that provide annual emissions estimates from 2023 to 2030. Both institutes have a long history in estimating the impact of current policies on future GHG emissions. The methods used for developing the current policy scenarios are presented in detail in Nascimento et al. (2021)[7] and described in detail elsewhere (Nascimento L. et al., 2023;[8] Kuramochi et al., 2021;[9] den Elzen et al., 2019;[10] Fekete et al., 2021[11]). The NewClimate Institute/ IIASA database of current policy trajectories update for this report covers the G20 countries, accounting for 77% of global emissions. Our ‘current policies’ emissions trajectories are based on the growth rates (between 2023 and 2030) deduced from the trajectories provided by NewClimate and IIASA and harmonised on our historical inventories. See Figure 1.

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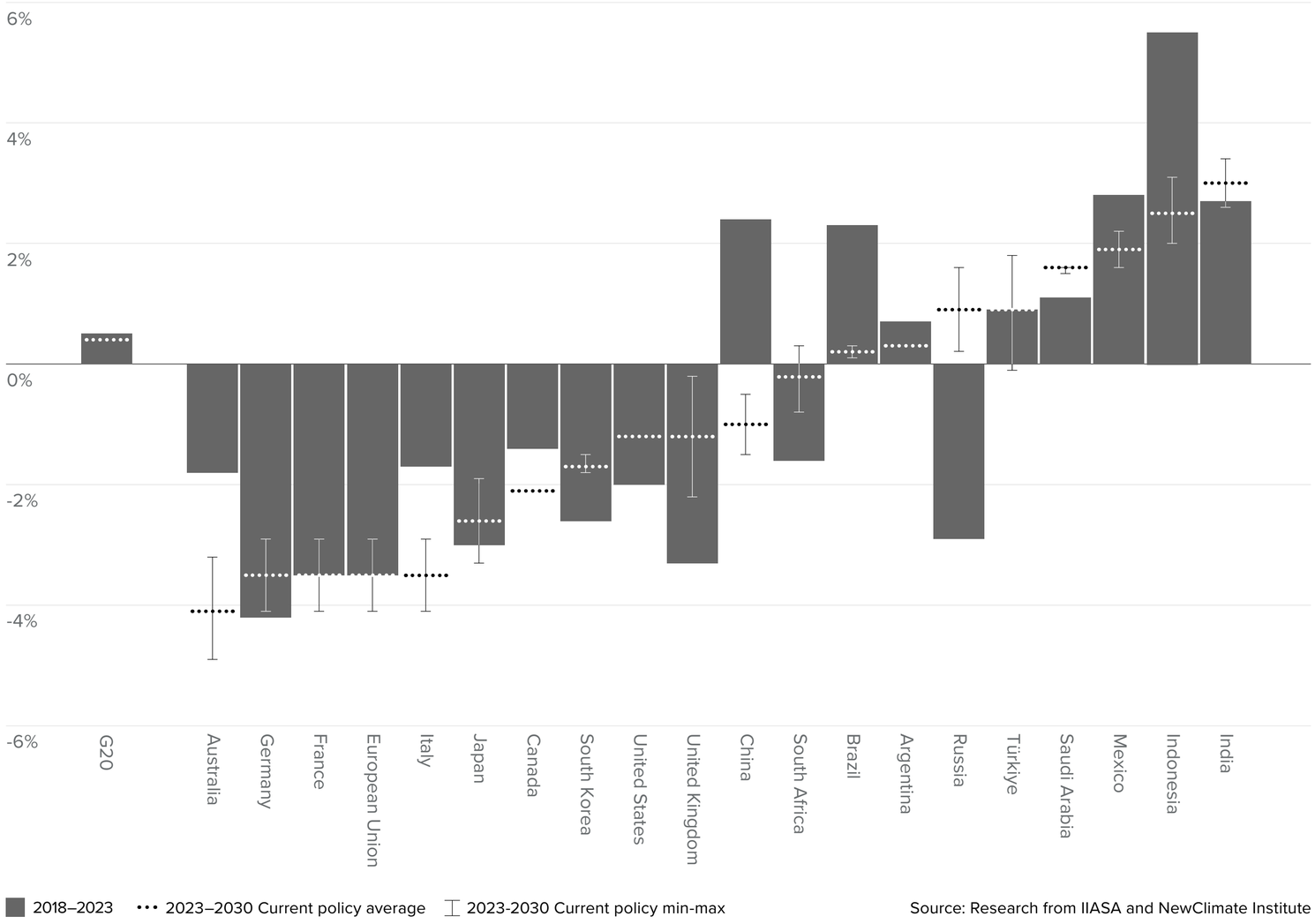
Figure 1: Comparing projected emissions growth in the G20 countries based on current policies with historical trends



Source: Research from IIASA and NewClimate Institute

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NDCs 3.0 (2035 targets)

At the time of writing, only 72 parties to the Paris Agreement have submitted a 3rd Nationally Determined Contribution (NDC 3.0), as required.[12] The commitments of some developing countries have both conditional (to financing) and unconditional parts. In our assessments, we consider only the unconditional component of the NDC targets. For NDCs that are based on a percentage reduction from a base year, we calculate the 2035 target using the percentage reduction provided by the country and applied to our own historical inventories for the base year.

Figure 2. NDC 2.0 (2030) targets versus announced NDC 3.0 (2035) targets.

Country	2030 target	2035 target
Australia	43% below 2005 levels	62-70% below 2005 levels
Brazil	53% below 2005 levels	59–67% below 2005 levels
Canada	40-45% below 2005 levels	45–50% below 2005 levels
China	65% below 2005 level (carbon intensity)	7-10% below 'peak levels' (not yet formally submitted to UNFCCC)
EU	55% below 1990 levels	66.25-72.5% below 1990 levels (not yet formally submitted to UNFCCC)
Indonesia	17.5-30.3% above 2019 levels	9.8-30.0% above 2019 levels
Japan	46% below 2013 levels	60% below 2013 levels
Russia	30% below 1990 levels	65-67% below 1990 levels
South Africa	350–420 $MtCO_2e$	320–380 $MtCO_2e$
South Korea	40% below 2018 levels	60% below 2018 levels (not yet formally submitted to UNFCCC)
Türkiye	41% below BAU level	643 MtCO2e in 2035 (not yet formally submitted to UNFCCC)
UK	68% below 1990 levels	81% below 1990 levels
USA	50-52% below 2005 levels (to be withdrawn)	61–66% below 2005 levels (to be withdrawn)

Source: LSEG

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NDC 3.0 Ambition Scenarios

For the COP29 Net Zero Atlas, we constructed a series of scenarios that allow us to estimate the emissions levels and associated ITR that a country might track towards in 2035. Explained in Figure 3, we build three scenarios based on a number of growth (reduction) assumptions, resulting in country-specific implied decarbonisation trajectories between 2030 and 2035 (see Figure 4).

Figure 3. Ambition scenarios breakdown

Scenario	Description
'NDC 2.0 ambition'	• We first calculate the annual emissions reduction (growth) rate for 2015-30, based on the countries' latest NDC and assume that its 2035 target will be set to reduce (grow) emissions at the same rate. • Secondly, we use the ITR associated with our current policies projections for 2030; and assume that countries 2035 targets will align to the same temperature outcome. • We use the average of both as the estimate for a 2035 target that is consistent with the 2030 NDCs. • A country's full emissions pathway is therefore a linear progression from current levels to its 2030 NDC, then to the calculated 2035 NDC. We assume post-2035 emissions remain constant until 2060, the end of our time domain.
'Long-term commitment (LTC) ambition'	• We assume a linear decrease in emissions from a country's 2030 NDC to its long-term commitment and assume that the 2035 NDC lies on this pathway. • For the LTC ambition, the full pathway is a linear progression from current levels to its 2030 NDC, followed by the linear decrease to its LTC. If the LTC is before 2060, then we assume emissions remain constant after its LTC until 2060, the end of our time domain.
'Paris ambition'	• We assume a level of ambition required to keep implied temperature rise in the G20 to approximately 1.8°C; however, the rate of decarbonisation is specific to the long-term commitments made by G20 members. • The decarbonisation trajectory results in 2040 emissions that are equivalent to a 90% reduction for countries with 2050 LTCs, 70% reduction with 2060 LTCs, and a 30% reduction in emissions in 2040 for India, which has a 2070 LTC. We calculate a country's 2035 NDC from where it intersects this pathway. • If the LTC is before 2060, then we assume emissions remain constant after its LTC until 2060, the end of our time domain.

Source: LSEG

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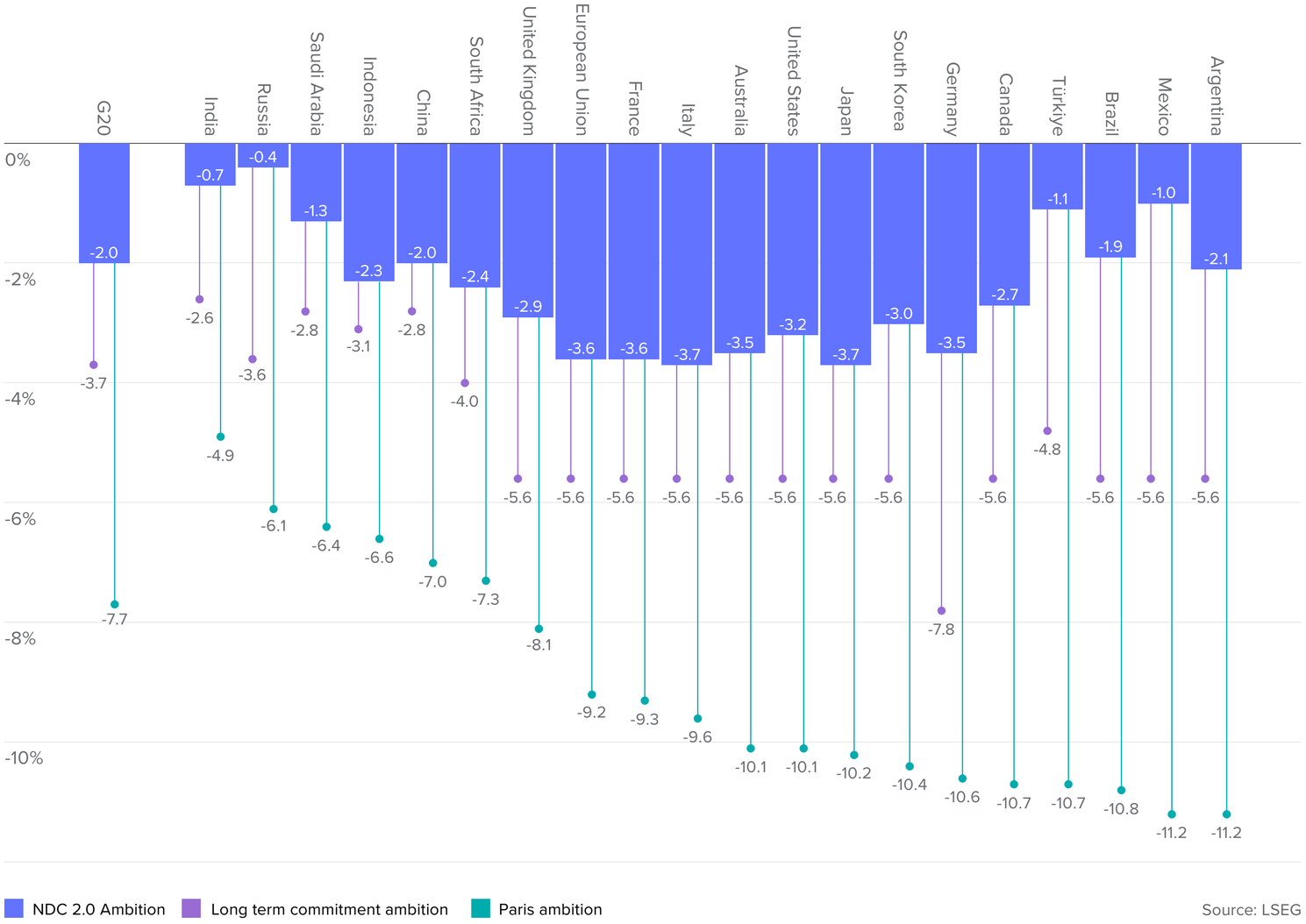
Figure 4. Comparing projected annual emissions growth in G20 countries between 2030 and 2035



Source: LSEG

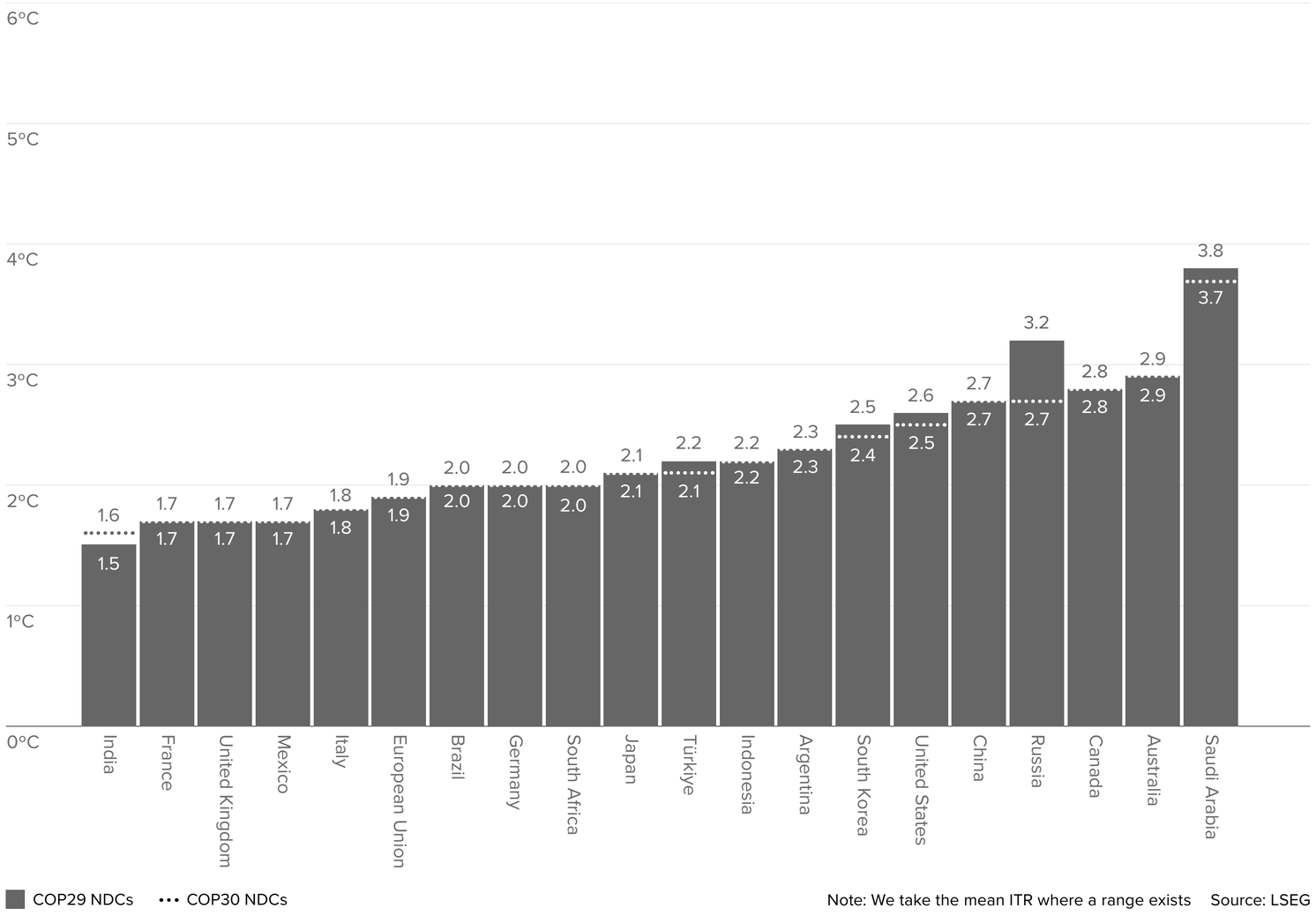
Figure 5. Implied Temperature Rise for G20 countries for COP30 (°C)

Country names	2030 Current Policies	NDCs 2.0	NDCs 3.0	Long-term commitments
India	1.6	1.6		1.5
France	1.8	1.7	1.6	1.5
United Kingdom	1.9	1.7	1.6 (unofficial)	1.5
Mexico	1.9	1.7		1.5
Italy	1.9	1.8	1.7 – 1.8 (unofficial)	1.5
European Union	2.0	1.9	1.7 – 1.8 (unofficial)	1.5
Türkiye	2.0	2.1	2.1 (unofficial)	1.7
South Africa	2.1	1.9 – 2.0	1.9 – 2.0	1.7
Germany	2.2	2.0	1.8 – 1.9 (unofficial)	1.6
Indonesia	2.2	2.2 – 2.3	2.1 – 2.3	1.8
Japan	2.2	2.1	1.9	1.7
Russia	2.2	2.7	2.2	1.9
Brazil	2.3	2.0	1.9	1.6
Argentina	2.4	2.3		1.7
China	2.6	2.7	2.6	2.2
South Korea	2.7	2.4	2.2 (unofficial)	1.8
Australia	2.9	2.9	2.3 – 2.5	1.9
United States	3.0	2.5	2.2 – 2.3	1.8
Canada	3.2	2.7 – 2.9	2.7 – 2.8	2.0
Saudi Arabia	4	3.7		3.0
G20	2.5	2.4	2.2 – 2.3 (official and unofficial)	1.9

Note: Long-term commitment (LTC) pathways are a result of NDC 2.0, NDC 3.0 (where official or unofficial), and the long-term commitment

Transition Risk

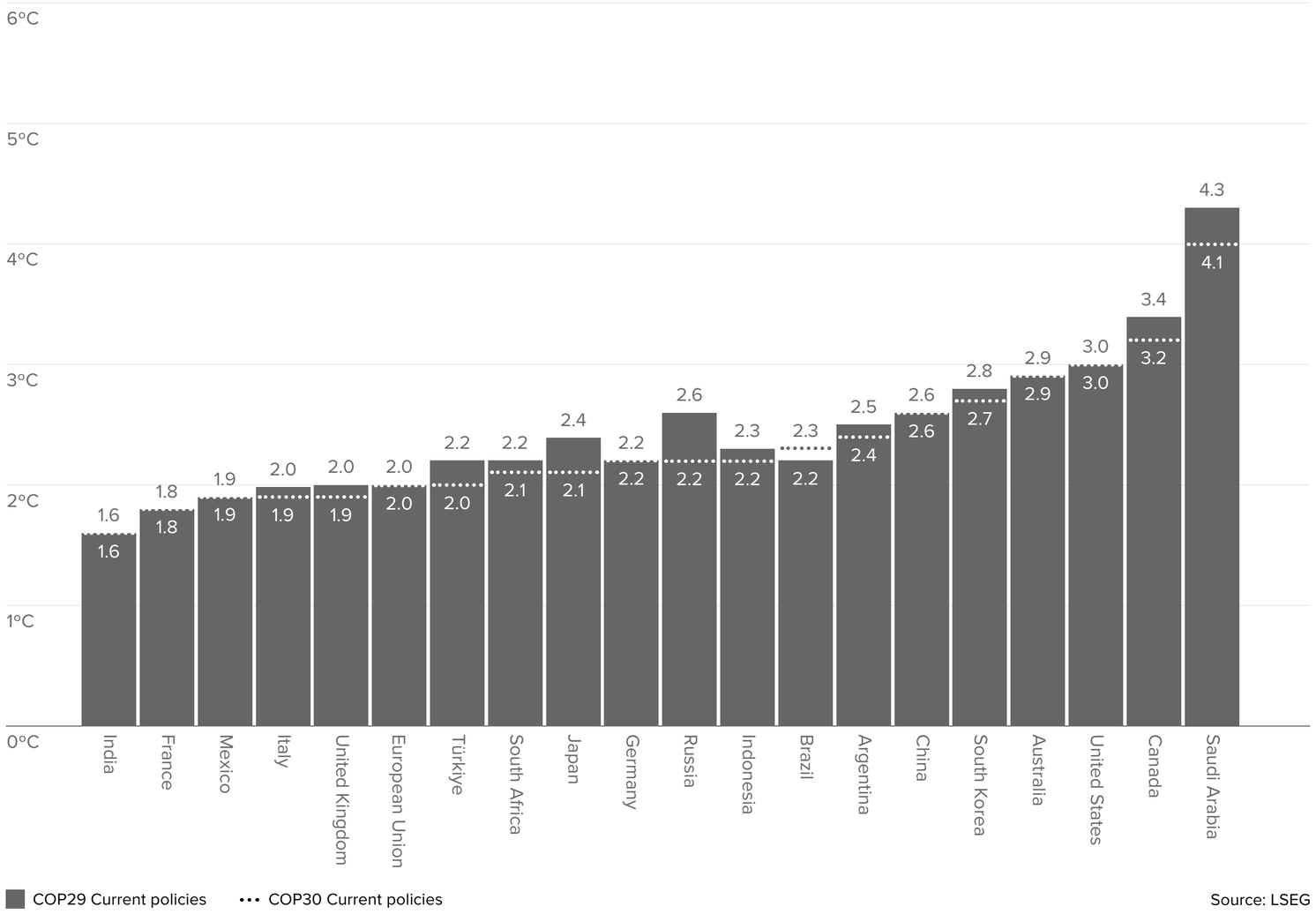
Figure 6. Implied Temperature Rise based on 2030 NDCs for COP29 and COP30 for the G20 countries (°C)



Note: We take the mean ITR where a range exists Source: LSEG

Transition Risk

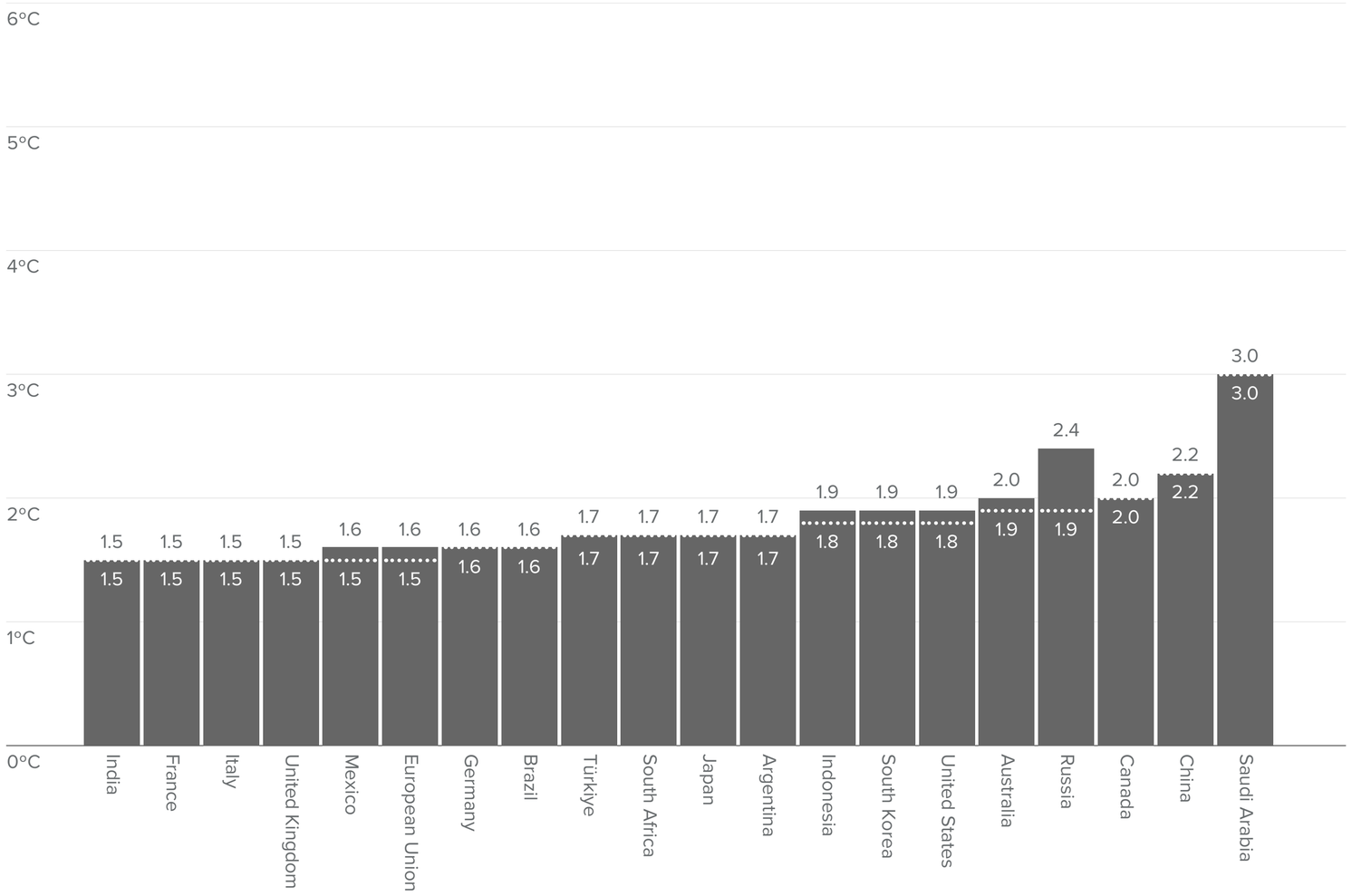
Figure 7. Implied Temperature Rise based on current policies from COP29 and COP30 for the G20 countries (°C)



Source: LSEG

Transition Risk

Figure 8. Implied Temperature Rise based on long-term commitments from COP29 and COP30 for the G20 countries (°C)



Source: LSEG

Transition Risk

Figure 9. Climate policy KPIs from ASCOR[13]

ASCOR Indicator ID	Indicator title
CP2.a	Does the country have a carbon pricing system?
CP2.b	Does the country's carbon pricing system cover at least 50% of national greenhouse gas emissions?
CP2.b.i	What percentage of national greenhouse gas emissions is covered by an explicit carbon price?
CP2.c	Is the carbon price at least at the floor of a global carbon price corridor aligned with the Paris Agreement?
CP2.c.i	What is the country's most recent explicit carbon price?
CP3.a	Has the country committed to a deadline by which to phase out fossil fuel subsidies?
CP3.a.i	By what year has the country committed to phase out fossil fuel subsidies?
CP3.b.i	How much is spent annually on explicit fossil fuel subsidies as a percentage of GDP?
CP5.a	Has the country published a National Adaptation Plan?
CP5.b	Does the country regularly publish national climate risk assessments?
CP5.c	Has the country published a Monitoring & Evaluation report on implementing adaptation?
CP5.e	Is the country part of a sovereign catastrophe risk pool?
CF1.a	Does the country contribute at least a proportional share of the $100 billion commitment to climate finance?
CF1.a.i.	What is the country's 3-year average climate finance contribution as a % of GDP?
CF1.b	Has the country set a target for further increasing its international climate finance contributions?
CF1.b.i.	What is the country's targeted level of international climate finance contributions as a % of GDP?
CF4.a.i.	What is the country's prospective solar energy capacity?
CF4.a.ii.	What is the country's prospective wind energy capacity?
CF4.a.iii.	What is the country's prospective geothermal energy capacity?
CF4.a.iv.	What is the country's prospective hydroelectric energy capacity?

Source: ASCOR

Climate policy KPIs

In this COP30 Net Zero Atlas, we display a sub-set of indicators within the Country Profiles section that are adapted from Assessing Sovereign Climate-related Opportunities and Risks (ASCOR), an initiative backed by asset owners, asset managers and investor networks.[14]

Endnotes

Transition Risk

1 UNFCCC, 2024 NDC Synthesis Report, 2024 [UNFCCC]

2 As per executive order “Putting America First in International Environmental Agreements”, 2025 [The White House]. Formal withdrawal takes effect one year after notification.2023 [The White House]

3 UNFCCC, The United States of America Nationally Determined Contribution, 2025 [UNFCCC]

4 EU Environment Council, 2040 climate target, 2025 [Consilium]

5 As of 28th October 2025. This includes NDC 3.0s from 5 states that are not yet formally submitted to the UNFCCC registry or are in preliminary draft form (Türkiye, South Korea, European Union, Tunisia and China).

6 Permanent Mission of the People’s Republic of China to the UN, ‘President Xi Jinping Delivers Video Remarks at the U.N. Climate Summit, 2025 [Permanent Mission of the People’s Republic of China to the UN]

7 United Nations, New national climate plans unveiled at high-level summit ahead of COP 30 conference, 2025 [UN]

8 The Chosun, ‘Environment ministry proposes 60% emissions cut by 2035’, 2025. [The Chosun]

9 Bloomberg, ‘India draft plan reveals $21 Trillion Net Zero Investment Need’, 2025. [Bloomberg]

10 Mexico Business news, ‘Mexico unveils updated NDC 3.0 Commitments Ahead of COP30’, 2025 [MexicoBusiness]

11 The G77, Statement on behalf of the Group of 77 and China by the delegation of Iraq at the informal meeting of the UN General Assembly on the priorities and preparation for the 2025 United Nations Climate Change Conference (COP30), 2025 [G77]

12 In July 2025, the One Big Beautiful Bill Act was codified, making broad changes to tax provisions for clean energy, including: phasing out solar and wind energy tax credits, expiration of tax credits for electric vehicles and home & commercial building energy efficiency credits, and extension of clean energy tax credits for clean hydrogen and biofuels. Estimates suggest the bill will materially slow deployment of renewables and electric vehicles in the US. Rhodium Group, What Passage of the “One Big Beautiful Bill” Means for US Energy and the Economy, 2025 [Rhodium Group]

13 While renewables are increasingly contributing to new energy demand, the large existing fossil infrastructure means reliance on fossil power remains significant. Global Energy monitor, Despite a record year, India needs to double renewables deployment by 2030 to meet energy targets, 2025 [GEM]

14 In Türkiye, the government unveiled its Renewable Energy Roadmap for 2035 on October 21, 2024, outlining ambitious plans to quadruple its wind and solar capacity to 120 GW by 2035. The roadmap includes measures such as annual renewable energy auctions of 2 GW, investments of $108 billion for capacity expansion and grid upgrades, and targets to add at least 7.5-8 GW of new renewable capacity each year.

15 For the purpose of aggregate G20 calculations, we include targets formally and informally announced by 10 G20 members. This excludes the Biden Administration’s 2035 target which is set to be withdrawn.

16 UNFCCC, Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat, 2025 [UNFCCC]

17 We assume the EU’s target is based on its recent statement of intent. EU Environment Council, 2040 climate target, 2025 [Consilium]

For France, Germany and Italy, we assume the same effort-sharing approach for the 2030 target as for the 2035 target. UNFCCC, EU NDC 2023 update, 2023 [UNFCCC]

For Türkiye, we assume its target to be 643 $MtCO_2e$ in 2035 based on recent announcements. President Erdoğan, Türkiye accelerates the green transformation, 2025 [The Republic of Türkiye Directorate of Communications]

Although Russia’s NDC 3.0 appears more ambitious than NDC 2.0, its 2035 target is likely achievable with limited additional policy effort. For China, given uncertainty about the timing and level of its peak emissions, we assume the peak occurs at 2023 levels; NewClimate’s current-policy projections show emissions rising only about 0.5% by 2025, so any resulting bias should be modest.

18 In this analysis, we focus on NDCs rather than countries’ aspirational mid-century zero goals (or long-term low-emission development strategies (LT-LEDS) in the language of the Paris Agreement). Full implementation of both NDCs and LT-LEDS would imply material reductions in ITRs, often in the range of 0.3–0.6°C.

19 We determine the country’s share of the global carbon budget by using LSEG’s proprietary Climate Liabilities Assessment Integrated Methodology (CLAIM) model, which estimates the budget using a statistical approach that factors in historical and current emission levels to determine the remaining GHG allowance for each country. More details can found on page 12.

20 In 2024, Russia recalculated the emissions sink from its land use, land use change and forestry (LULUCF) sector for the whole historical time series from 1990 to 2022. This recalculation has resulted in, on average a c. 350% increase in its carbon sink. It’s revision of 1990, the base year of its NDC, results in our calculation of its 2030 NDC being 1.60 $MtCO_2e$, compared to 2.05 $GtCO_2e$ in last year’s COP29 Net Zero Atlas.

Endnotes

Annex: Data & Methodologies

1 Note that when calculating the ITR for an entity including multiple countries, such as the EU or the G20, we compute an average of each country's ITR, weighted by the country's emissions ratio within the group. See FTSE Russell, How to measure the temperature of sovereign assets, 2021 [FTSE Russell]

2 Giraud, G., Lantremange, H., Nicolas, E. and Rech, O., National carbon reduction commitments: Identifying the most consensual burden sharing. Documents de travail du Centre d'Économie de la Sorbonne, 2017 [HALSHS]

3 Based on research from IIASA and NewClimate Institute, updating emissions projections from Nascimento, L.et al., 2021, Tracking climate mitigation efforts in 30 major emitters: Economy-wide projections and progress on key sectoral policies

4 NGFS, Scenarios Technical Documentation Phase IV, 2023 [NGFS]

5 For further information please contact forsell@iiasa.ac.at

6 Gütschow, J., Pflüger, M., & Busch, D., The PRIMAP-hist national historical emissions time series (1750-2022) v2.5.1. Zenodo, 2024 https://zenodo.org/records/10705513

7 Nascimento, L., Forsell, N., Batka, M., Kuramochi, T., Illenseer, N., Subtil, C. and Lancesseur, N., Tracking climate mitigation efforts in 30 major emitters: Economy-wide projections and progress on key sectoral policies, 2021 [New Climate Institute]

8 Nascimento, L., et al., Greenhouse gas mitigation scenarios for major emitters. NewClimate Institute, PBL and IIASA, 2023 [New Climate Institute]

9 Kuramochi, T., Nascimento, L., Moisio, M., den Elzen, M., Forsell, N., van Soest, H., Tanguy, P., Gonzales, S., Hans, F., Jeffery, M.L., Fekete, H. et al., Greenhouse gas emission scenarios in nine key non-G20 countries: An assessment of progress toward 2030 climate targets. Environmental Science & Policy 123, 67-81, 2021. https://doi.org/10.1016/j.envsci.2021.04.015

10 den Elzen, M., Kuramochi, T., Höhne, N., Cantzler, J., Esmeijer, K., Fekete, H., Fransen, T., Keramidas, K., Roelfsema, M., Sha, F., van Soest, H. and Vandyck, T., Are the G20 economies making enough progress to meet their NDC targets? Energy policy 126, 238-250, 2019. https://doi.org/10.1016/j.enpol.2018.11.027

11 Fekete, H., Kuramochi, T., Roelfsema, M., den Elzen, M., Forsell, N., Höhne, N., Luna, L., Hans, F., Sterl, S., Olivier, J. and van Soest, H., A review of successful climate change mitigation policies in major emitting economies and the potential of global replication. Renewable and Sustainable Energy Reviews 137, 110602, 2021. https://doi.org/10.1016/j.rser.2020.110602

12 As of 28th October 2025. This includes NDC 3.0s from 5 states that are not yet formally submitted to the UNFCCC registry or are in preliminary draft form (Türkiye, South Korea, European Union, Tunisia and China).

13 ASCOR, ASCOR framework: methodology note, November 2023 [ASCOR]

14 The ASCOR project [ASCOR]

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About

About LSEG

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