

How COP26 Climate Pledges Compare in Run-up to Earth Day

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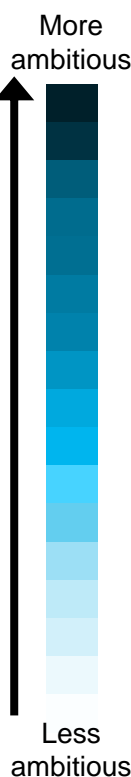
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Executive summary

World leaders will gather April 22-23 at a U.S.-organized Earth Day summit to discuss boosting their climate ambitions. The host is expected to set an example by announcing its 2030 emission target. Evaluating goals is tricky as countries employ various methods for making pledges, which include widely different structures, baselines and scopes. This note seeks to unravel the mystery by comparing commitments in four ways.

- Based on the **change in absolute volumes of emissions 2010-30**, the U.K., EU and Brazil have the most ambitious 2030 targets. All three parties' pledges would also see them doing their part to limit global warming to 1.5 degrees Celsius – one of the goals of the Paris Agreement.
- In contrast, developing countries – notably Turkey, India and China – could meet their 2030 NDC targets while increasing their emissions substantially. And because they are such major emitters, their contributions would assure that G-20 emissions overall rise by more than half.
- Emerging economies like India and China often peg their targets to **emissions per unit of GDP ('emission intensity')**. This goal type can promote decarbonization, while allowing for economic growth. On this basis, the U.K. and EU still take the top two spots. China finishes 7th and India 11th – higher than the ranking based on absolute volumes. However, their intensity targets are not aggressive enough to ensure a global temperature increase of less than 2 degrees.
- Governments tend to set **emissions per capita** goals if they expect significant population growth. Today, India has lowest per-capita emissions while major fossil-fuel producers and consumers Canada, Australia and Saudi Arabia are at the high end. On a per-capita basis, all but five of the G-20 countries' goals would result in lower emissions. But only the U.K. reaches a level below 3.5 metric tons per person – our estimate for the level required for a 1.5-degree target. India remains at the lower end and would be aligned with a 2-degree target using this metric.
- The fourth way of setting an NDC and gauging its ambition involves measuring the gap between emissions if the target is met and what emissions would have been absent a target. We refer to this metric as the **'gap to business-as-usual (BAU) scenario'**.

G-20 NDCs ranked on four metrics

	Absolute emissions	Emission intensity	Emissions per capita	Gap to BAU scenario	
Argentina	6th	9th	7th	11th	
Australia	5th	5th	14th	2nd	
Brazil	3rd	8th	4th	13th	
Canada	4th	6th	16th	17th	
China	15th	7th	15th	16th	
EU-27	2nd	2nd	2nd	1st	
India	16th	11th	3rd	15th	
Indonesia	14th	10th	6th	10th	
Japan	7th	12th	8th	6th	
Mexico	12th	15th	5th	9th	
Russia	10th	14th	13th	5th	
Saudi Arabia	13th	13th	17th	8th	
South Africa	11th	16th	10th	12th	
South Korea	8th	4th	9th	3rd	
Turkey	17th	17th	11th	14th	
U.K.	1st	1st	1st	7th	
U.S.	9th	3rd	12th	4th	

Source: BloombergNEF.

Executive summary (2)

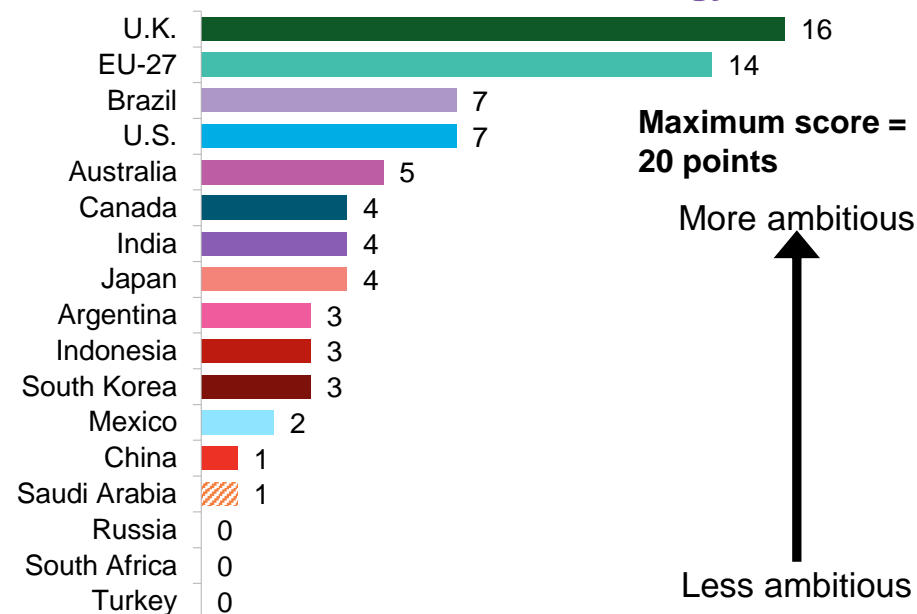
- We calculated countries' BAU emissions using estimates for GDP and population forecasts, and trends in energy consumption and emissions. The 2030 estimate was then compared with emissions if a country's NDC target was achieved. Based on this, only the EU-27 would be aligned with a 2-degree scenario as its target requires significant abatement. For seven G-20 nations, including China and India, emissions under their 2030 targets would be higher than BAU – ie, their goals incentivize no abatement.
- In an effort to unify clashing methodologies, BNEF has created **aggregate country scores**. Under our basic methodology, a country earns five points if it is expected to contribute its share toward achieving a 1.5-degree scenario under any of the four measurement methodologies, creating a maximum of 20 points per country. Parties received three points under any methodology where they met a 2-degree threshold. Slightly ambitious goals received one point while unambitious pledges got zero.
- Based on this blended system, the EU-27 and the U.K. top the list for 2030. If a new U.S. pledge only aligns with the trajectory of its 2025 target, it will be well behind its European peers. It could close the gap only with a goal at the upper bound of what it reportedly is considering (eg, 53% or so).
- China and India could find themselves under pressure in coming days as their pledges can only be regarded as ambitious under the criteria they set for themselves.
- In separate previous research, BNEF found that the EU nations and the U.K. have implemented the strongest domestic decarbonization policies to make good on their international pledges. But they will require further domestic policies to meet their targets and achieve deep decarbonization.
- Others, notably Brazil, Australia and the U.S., face significant gaps between their climate ambitions and the level of domestic policies they have legislated and implemented.

-45% Change in emissions 2010-30 to limit global warming to 1.5 degrees Celsius

-25% Change in emissions 2010-30 to limit global warming to 2 degrees Celsius

+49% Change in G-20 emissions 2010-30 if unconditional NDC targets are met

G-20 NDCs under the BNEF methodology

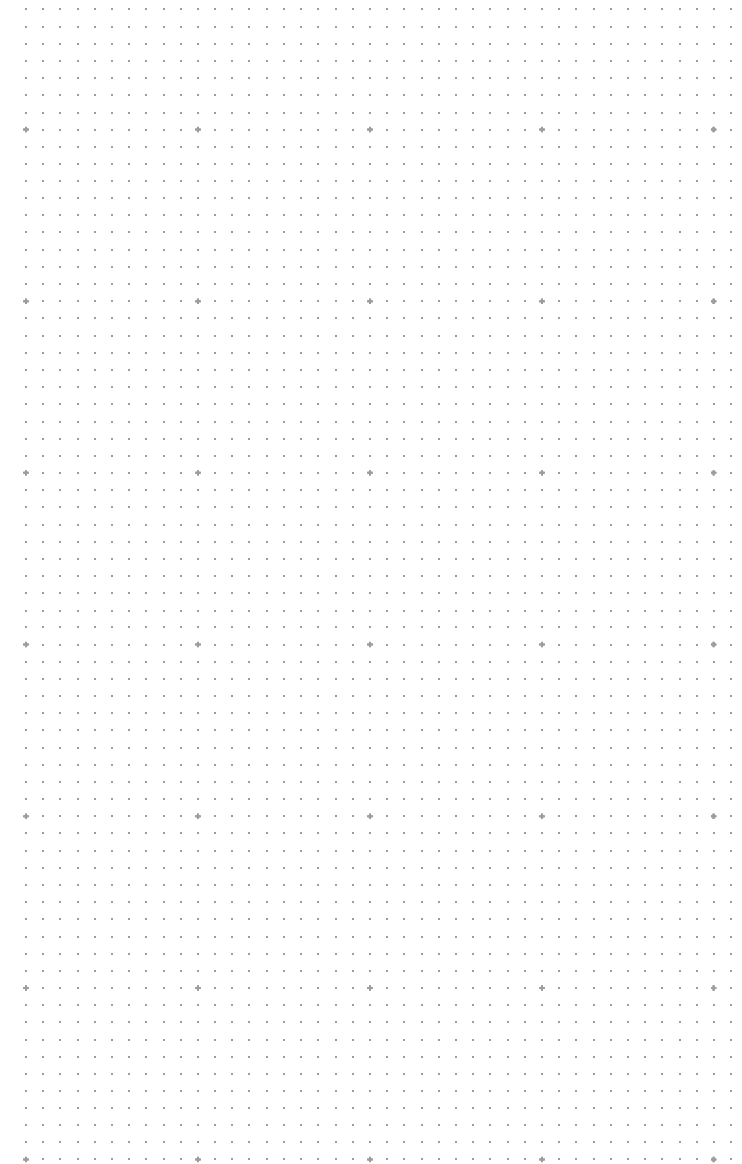


Source: BloombergNEF. Note: U.S. is assumed to maintain emission trend from its 2025 target (2030 goal unconfirmed). Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Contents

Context	3
Comparison results	10
Country snapshots	20
Appendix	39

Context



What are NDCs?

- The most important climate summit since the Paris conference in 2015 – COP26 – is due to kick off November 1, bringing together nearly 200 parties. The overall aim of the event is for countries to agree on how they can work together to reduce emissions and promote climate adaptation, with a view to cutting costs and accelerating progress. The decisions made at COP shape governments' and companies' efforts to tackle climate change.
- COP26 will be the first opportunity to discuss countries' climate plans, as each party was due to submit in 2020 a Nationally Determined Contribution (NDC) covering the next decade. This is the first step in the Paris pledge-review-ratchet cycle (see figure). In 2023 parties will review the climate pledges and assess their aggregate progress toward the Paris goals. The results of this 'global stocktake' will enable governments to prepare their next NDC and increase the ambition of their commitments.
- Of the G-20 members, nine have submitted a pre-COP26 plan, of which only the EU, U.K. and Argentina have pledged tougher emission targets. In addition, Japan released a revised NDC in 2020 but has said it plans to increase its commitments before COP26.
- Among the laggards is China and in December 2020 at the Climate Ambition Summit President Xi Jinping reiterated the country's 2030 target to cut CO₂ emissions per unit GDP by more than 65% below 2005 levels. This suggests that while the country intends to submit a revised NDC before Glasgow, it is unlikely to amend its headline 2030 emission goal. This pledge is also in line with the 14th Five-Year Plan, published in March 2021, which includes a target to reduce emissions per unit of GDP by at least 18% over the Plan period (2021-25). (For more, see: *BNEF's Take on China's 14th Five-Year Plan*, [web](#) | [terminal](#)).
- The party attracting most media attention at present is the U.S., having re-joined the Paris Agreement in February. President Joe Biden has invited 40 world leaders to a virtual climate summit on April 22, by which time the U.S. intends to announce "an ambitious 2030 emissions target" as its NDC. Its current goal is for a 26-28% reduction by 2025 relative to 2005 levels. The Japanese and South African governments are also drafting new plans to be issued before November. Other announcements may be made around the time of the G-7 and G-20 meetings and the virtual COP preparation meeting scheduled for May 31 to June 17.

For more detail on why this year's climate summit is especially important, see: *COP26 in Glasgow: Five Reasons Why it Matters* ([web](#) | [terminal](#)).

Paris Agreement cycle



Source: UNFCCC, BloombergNEF

Status of 2020 NDC targets

- Under Paris, governments may structure their NDC goals how they like, resulting in a wide variety of types (see box below), deadlines and levels. Some countries – notably China – have carbon-intensity targets only. In such cases, we assumed that the target is applied to all greenhouse-gas emissions.
- In addition to the unconditional goals on the table, some developing parties have pledged more ambitious targets only if associated conditions are met (notably financing or support provided). In fact, developing countries request a total of \$4.3 trillion in their NDCs. However, developed countries are already well behind on their target to raise \$100 billion a year by 2020. This note focuses on the *unconditional* pledges in an attempt to establish a minimum level of ambition.

Four main types of NDC target

- Base year** – the most common target type whereby a country reduces emissions by a certain share of the total in a given year.
- Intensity** – same as above but instead of absolute volumes, the reduction relates to emissions per unit of GDP.
- BAU scenario** – the country must cut emissions by a certain share of forecast emissions in the deadline year (eg, 2030).
- Emission cap** – the country may not exceed a given volume of emissions over the target period or in the deadline year.

Status of 2020 NDCs and latest emission target

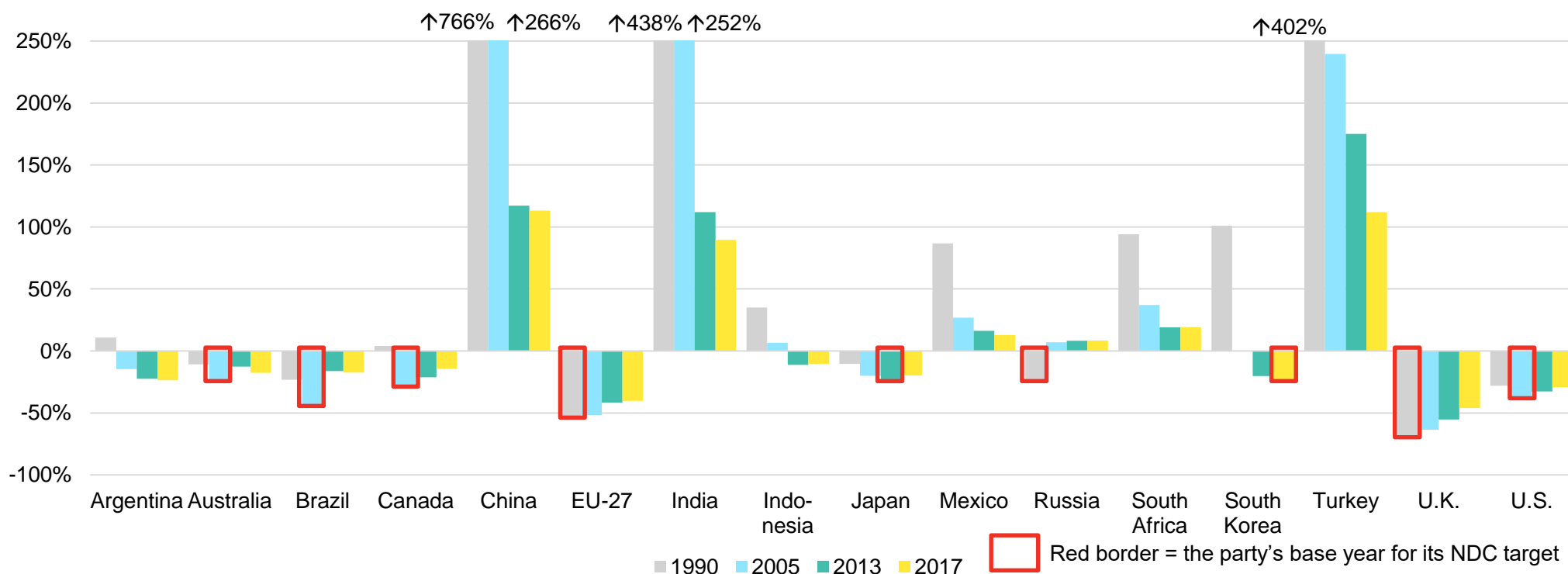
	Submitted 2020 NDC?	Target type	Unconditional target level	Target deadline	More ambition? (previous target)
Argentina	✓ Second NDC ¹	Emission cap	359Mt	2030	✓ (483Mt)
Australia	✓ Updated NDC	Base year (2005)	26-28%	2030	✗
Brazil	✓ Updated NDC	Base year (2005)	43%	2030	✗
Canada	✗	Base year (2005)	30%	2030	✗
China	✗	Intensity	60%	2030	✗
EU-27	✓ Updated NDC	Base year (1990)	55%	2030	✓ (40%)
India	✗	Intensity	33-35%	2030	✗
Indonesia	✗	BAU scenario	29%	2030	✗
Japan	✓ Updated NDC	Base year (2013) ²	26%	2030	✗
Mexico	✓ Updated NDC	BAU scenario	22%	2030	✗
Russia	✓ First NDC	Base year (1990)	25-30%	2030	✗
Saudi Arabia	✗	No target	No target	No target	✗
South Africa	✗	Emission cap	614Mt	2030	✗
South Korea	✓ Updated NDC	Base year (2017)	24.4%	2030	✗
Turkey	✗ INDC only	BAU scenario	21% ³	2030	✗
U.K.	✓ Updated NDC	Base year (1990)	68%	2030	✓ (40%)
U.S.	✗	Base year (2005)	26-28%	2025	✗

Source: UNFCCC, BloombergNEF. Note: ¹ Little difference between second and updated NDCs, although the former may include more changes from the previous version. ² Japan's target deadline is fiscal year 2013. ³ Turkey's target is partly conditional. INDC = intended NDC (precursor to NDCs)

What's in a base year?

- The base year a country chooses to compare its future target against can have major implications for the country's true level of ambition. The most common 'base years' are 1990, as used by European parties including the EU and Russia, and 2005, as preferred by other developed countries such as the U.S., Australia and Canada. In comparison, Japan bases its target on 2013 and South Korea 2017.
- The base year can make a significant difference to the percentage change in emissions required to achieve a target: for example, South Korea has a goal to cut emissions 24% below 2017 levels. If the target were relative to 2005, Korea would require no change to current emissions. If it based its commitment against 1990, the country could double its current greenhouse-gas output.
- In practice, the base year does not alter the abatement needed to reach a target, but it may be selected based on political reasons to appear more ambitious. As such, all the G-20 members with this type of target have chosen the base year that would mean the biggest emission decrease in percentage terms, as shown by the red borders in the figure below. (Countries without a red border do not have a base-year target.)

Required change in absolute emissions to meet 2030 target relative to different base years

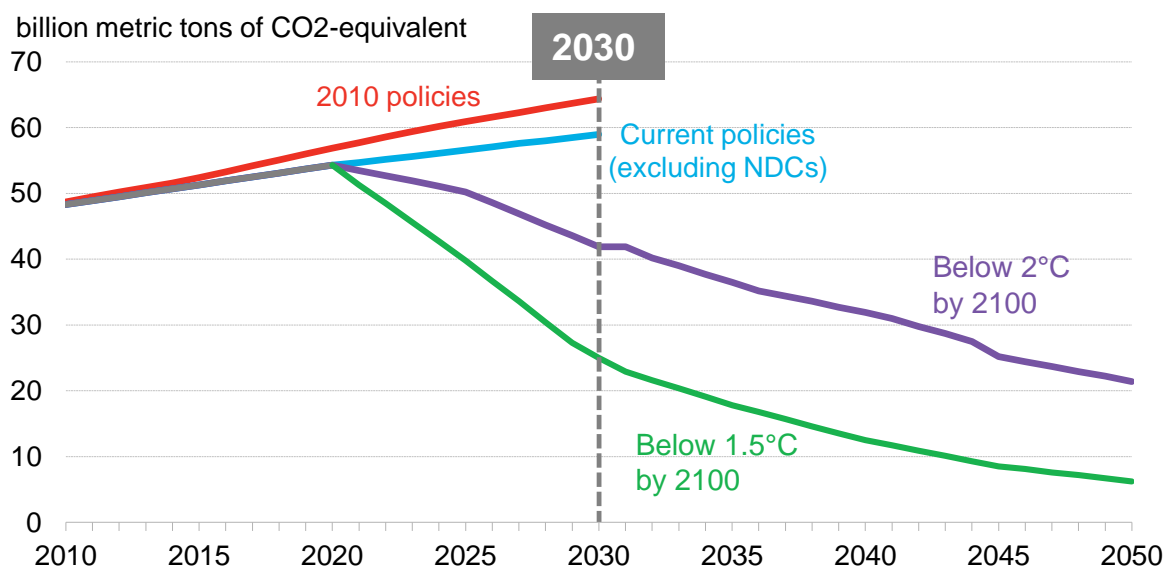


Source: UNFCCC, BloombergNEF. Note: U.S. is assumed to maintain emission trends from its 26% target for 2025, equating to a 34% reduction by 2030.

2- and 1.5-degree scenarios

- The headline target of the 2015 Paris Agreement is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (Article 2). Human activities have already a rise of some 1 degree above pre-industrial levels, and global warming is likely to reach 1.5 degrees between 2030 and 2050 if it maintains the current trend, according to Intergovernmental Panel on Climate Change’s (IPCC) *Special Report on Global Warming of 1.5°C*.
- To limit the global temperature increase to 2 degrees by the end of the century, world emissions in 2030 must be some 25% below 2010 levels. To be on a 1.5-degree path, they must drop 45%. Some progress has been made: leaving aside the NDCs, green policies today would mean projected emissions in 2030 of 59 billion metric tons – down from the 64-billion level they would have been at had policies in place in 2010 remained untouched.
- Nonetheless, there remain massive gaps between global emissions from least-cost scenarios that keep global warming to 2 or 1.5 degrees Celsius, and the estimated global emissions from current policies without the NDCs. For 2 degrees, this gap amounts to some 18 billion metric tons – 31% – and 31 billion metric tons – 58% – for the more ambitious scenario.

Global greenhouse-gas emissions under climate scenarios



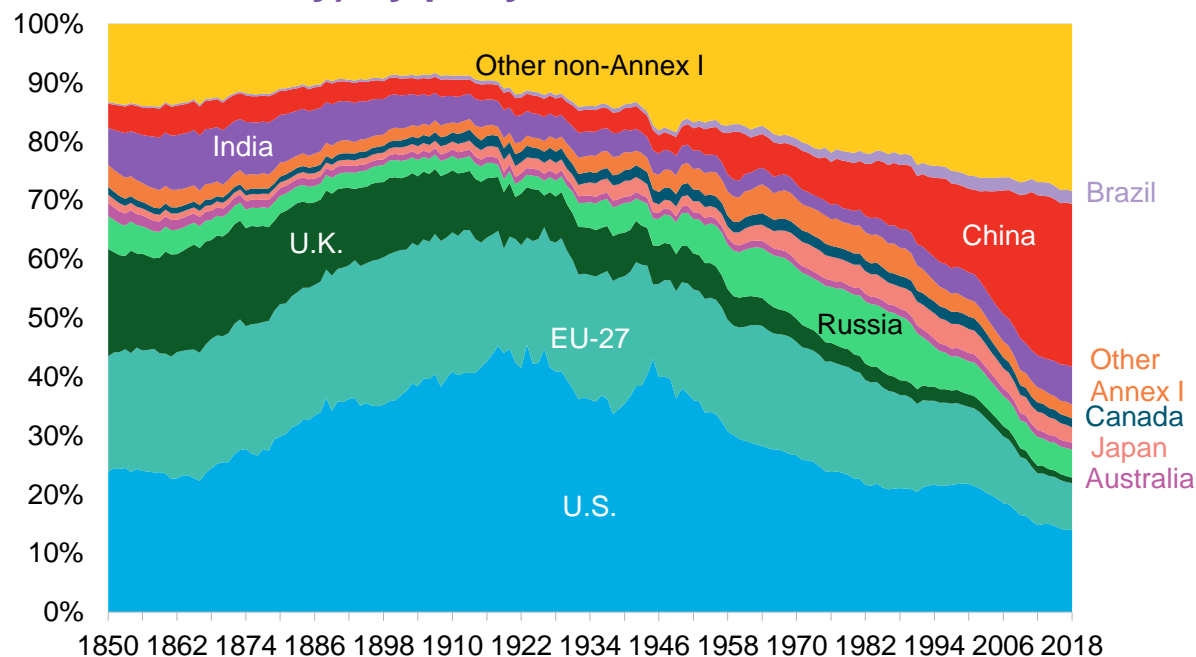
Source: UNEP, *Emissions Gap Report 2020*; BloombergNEF. Note: ‘Current policies’ excludes NDCs.

- The analysis below assumes that the G-20 countries must also achieve a 25% and 45% reduction in emissions on 2010 levels by 2030.
- In practice, there is unlikely to be a uniform decrease across parties, to be determined by a range of political, social, economic and physical factors.
- At the very least, countries vary to the extent that citizens perceive climate change to be a global emergency and significant risk. They may also agree that it poses a significant risk but disagree on government responses and spending. For more, see: *What Divides and Unites Us on Climate Action and Awareness* ([web](#) | [terminal](#)).
- A particularly contentious issue is the question of fairness and responsibility, as discussed on the [next slide](#).

Emission debt burden

- Climate change is driven by the stock of emissions in the atmosphere – not annual flows. This has led some to argue that responsibility and thus a party's level of ambition should be based on its contribution to historical emissions. As a result, the principle of “common but differentiated responsibilities and respective capabilities” was included in the UN Framework Convention on Climate Change and later the Paris Agreement, which also awarded various concessions and support to developing economies.
- But the divide between developed and developing countries has led to increasing tensions and slowed progress in climate negotiations, in particular as emerging economies accounted for a growing share of emissions. There is no agreed method to assign responsibility or the ‘emission-reduction burden’: developed countries accounted for 60% of global emissions (excluding land use and forestry) over 1850-2018, of which the U.S. alone held a 23% share. Some emerging economies are not far behind: China made up 13% of the historical total compared with 16% for the EU-27. However, this is far from being the case on a per-capita basis, as discussed below.

Global greenhouse-gas emissions (excluding land use and forestry) by party

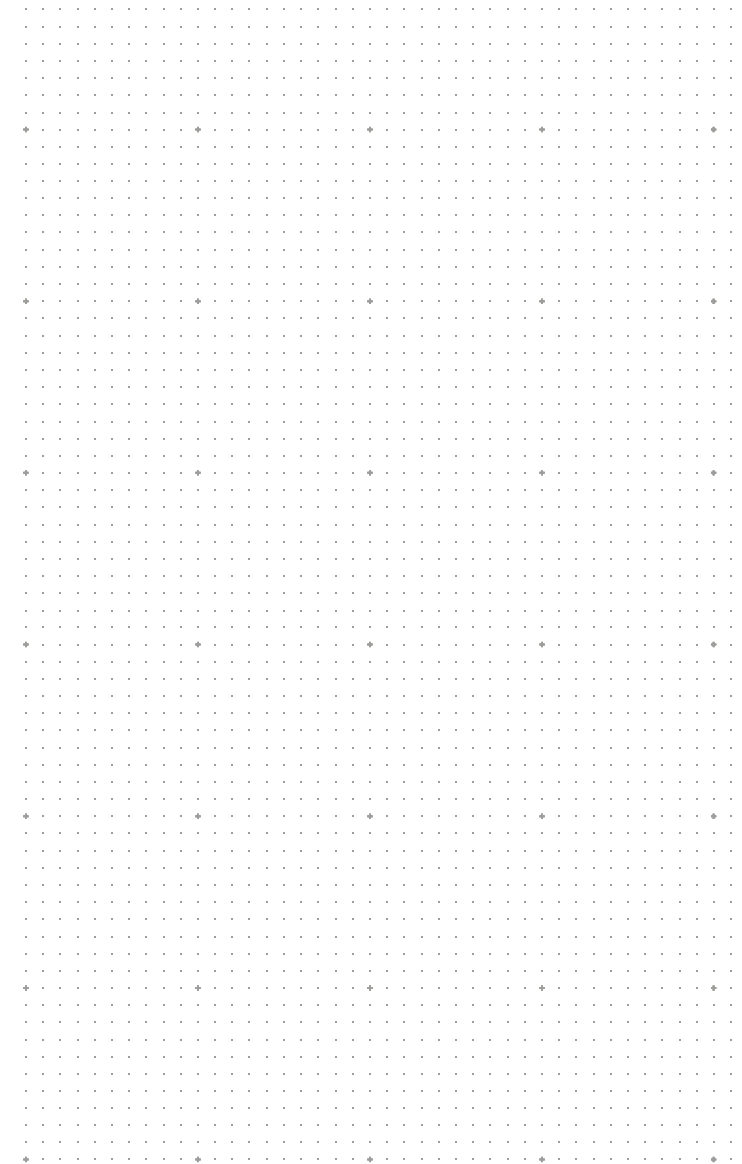


Source: Gütschow, J., Günther, A., Jeffery, L. and Gieseke, R., *The PRIMAP-hist National Historical Emissions Time Series v2.2 (1850-2018)*, 2021.

- Some attempts to quantify this burden involve determining each nation's fair share of a safe global carbon budget based on population and then subtracting it from historical emissions to determine if it owes an ‘emission debt’.
- The U.S. has overshoot its fair share by 40%, Russia 8% and Japan 5%, according to a research paper published in *The Lancet* in 2020.* In contrast, China and India had emitted 34% and 11% less than their ‘fair share’.
- The flexible set-up of the NDC means that governments can tailor their climate plans to their needs and priorities. The aim is that the system of peer pressure spurs parties to pledge a ‘fair’ target in line with their emission debt. COP26 will be an initial test of the Paris approach.
- The issue of fairness is often raised in climate negotiations. However, our methodology makes no attempt to levelize countries based on emission debts.

* Hickel, J., *Quantifying National Responsibility for Climate Breakdown: an Equality-Based Attribution Approach for Carbon Dioxide Emissions in Excess of the Planetary Boundary*, *The Lancet*, Vol 4, Issue 9, 2020.

Comparison of pledges



NDC score summary and rankings

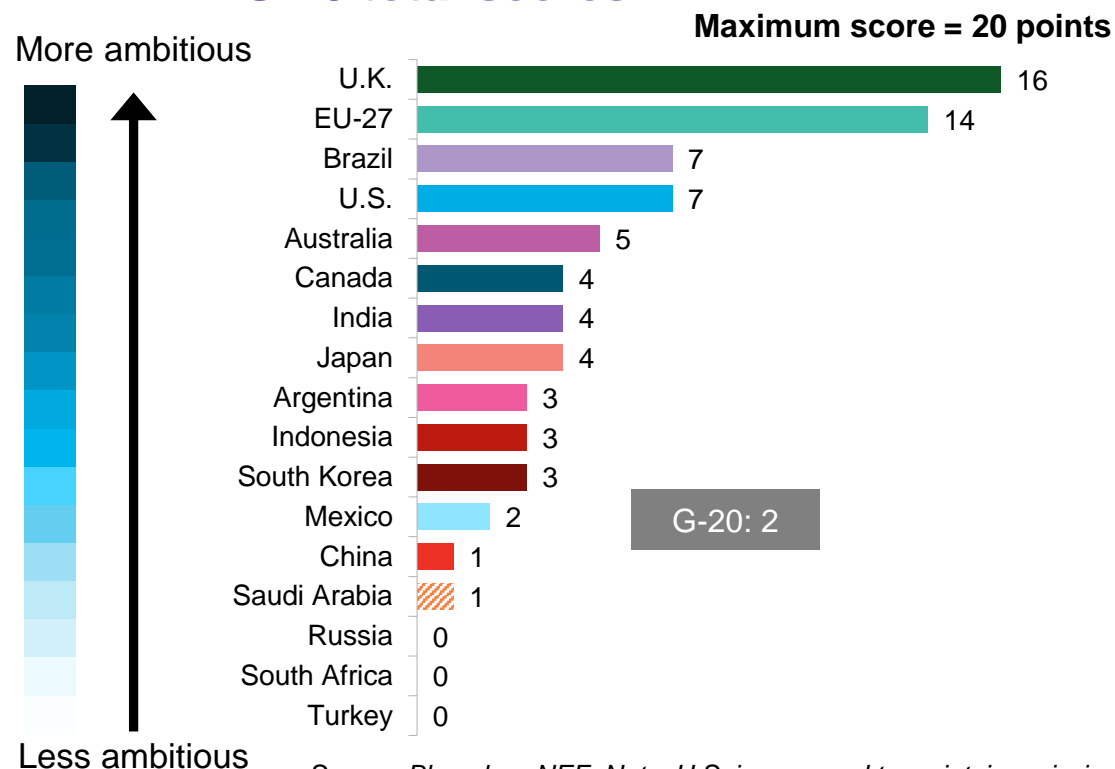
- This year's COP host the U.K. and the EU have put forth far more ambitious NDC targets than other G-20 countries in terms of overall commitment, BNEF finds. The two score highest based on BNEF's blended system for comparing NDCs.
- Under our basic methodology, a country earns five points if it is expected to contribute its share toward achieving a 1.5-degree scenario under any of the four measurement methodologies, creating a maximum of 20 points per country. Parties received three points under any methodology where they met a 2-degree threshold. Slightly ambitious goals received one point while unambitious pledges got zero.
- If the U.S. announces a 2030 pledge in line with the ambition of its 2025 goal, it will remain at the upper end of the ranking – albeit well behind its European peers. (For more, [click here](#).) However, there may well be calls for other developed countries – notably Australia, Canada and Russia – to up their unconditional targets. Given their contribution to global emissions, China and India may also come under pressure.

G-20 scores under four metrics

	Absolute emissions	Emission intensity	Emissions per capita	Gap to BAU scenario
Argentina	6th	9th	7th	11th
Australia	5th	5th	14th	2nd
Brazil	3rd	8th	4th	13th
Canada	4th	6th	16th	17th
China	15th	7th	15th	16th
EU-27	2nd	2nd	2nd	1st
India	16th	11th	3rd	15th
Indonesia	14th	10th	6th	10th
Japan	7th	12th	8th	6th
Mexico	12th	15th	5th	9th
Russia	10th	14th	13th	5th
Saudi Arabia	13th	13th	17th	8th
South Africa	11th	16th	10th	12th
South Korea	8th	4th	9th	3rd
Turkey	17th	17th	11th	14th
U.K.	1st	1st	1st	7th
U.S.	9th	3rd	12th	4th

Source: BloombergNEF.

G-20 total scores

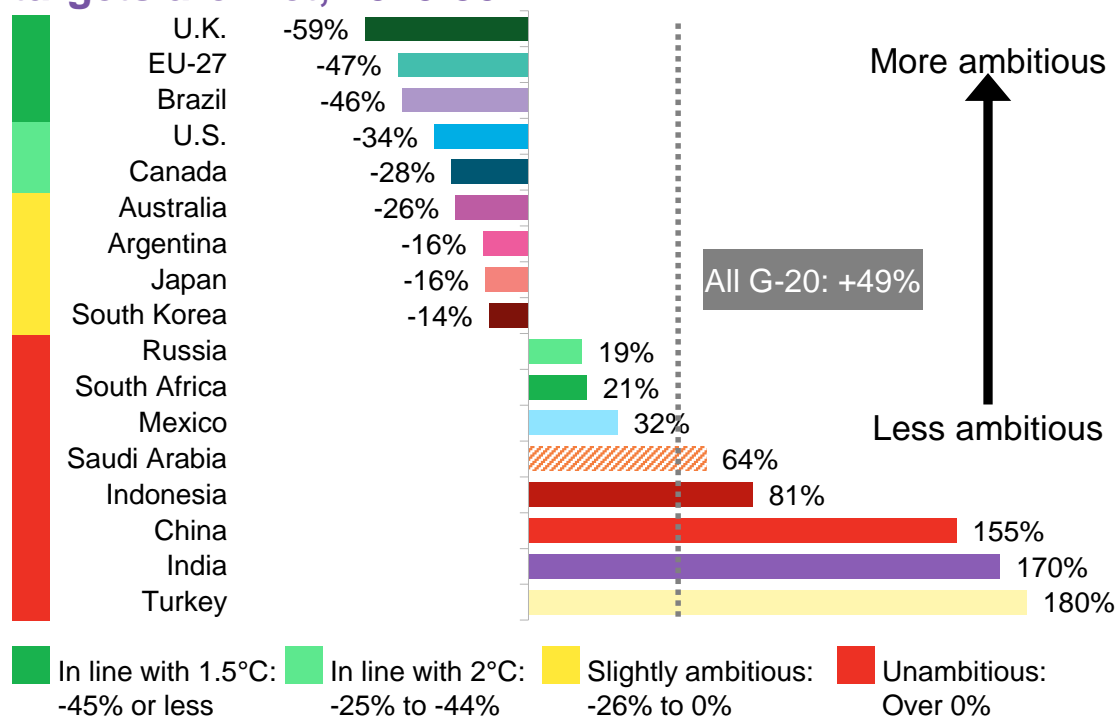


Source: BloombergNEF. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Comparison 1: absolute emissions

- The first and arguably simplest method for evaluating the strength of an NDC involves comparing the change in absolute emissions it would trigger between 2010 and 2030. Using such an approach, the U.K., EU and Brazil are all on path to cut emissions by more than 45% over that 20-year period. That potential drops allows the three to make their share of contribution to limiting global warming to 1.5 degrees. In contrast, for eight countries hitting their targets will mean their absolute emissions rise. Because this group includes major emitters China and India, G-20 emissions as a whole are on track to rise 49% 2010-30 under the NDCs – a far cry from the Paris Agreement goals.
- The U.S. NDC as of April 19 targeted 2025. For comparability, this report assumes that post-2025 U.S. emissions decline on the same trajectory to put the U.S. in 2030 38% below 2005 levels (its chosen base year) and 34% below 2010 emissions. This means the U.S. is aligned with a 2-degree scenario. To see the impact if the Biden administration opts for a more ambitious pledge, [click here](#).

Projected absolute emissions changes if G-20 NDC targets are met, 2010-30



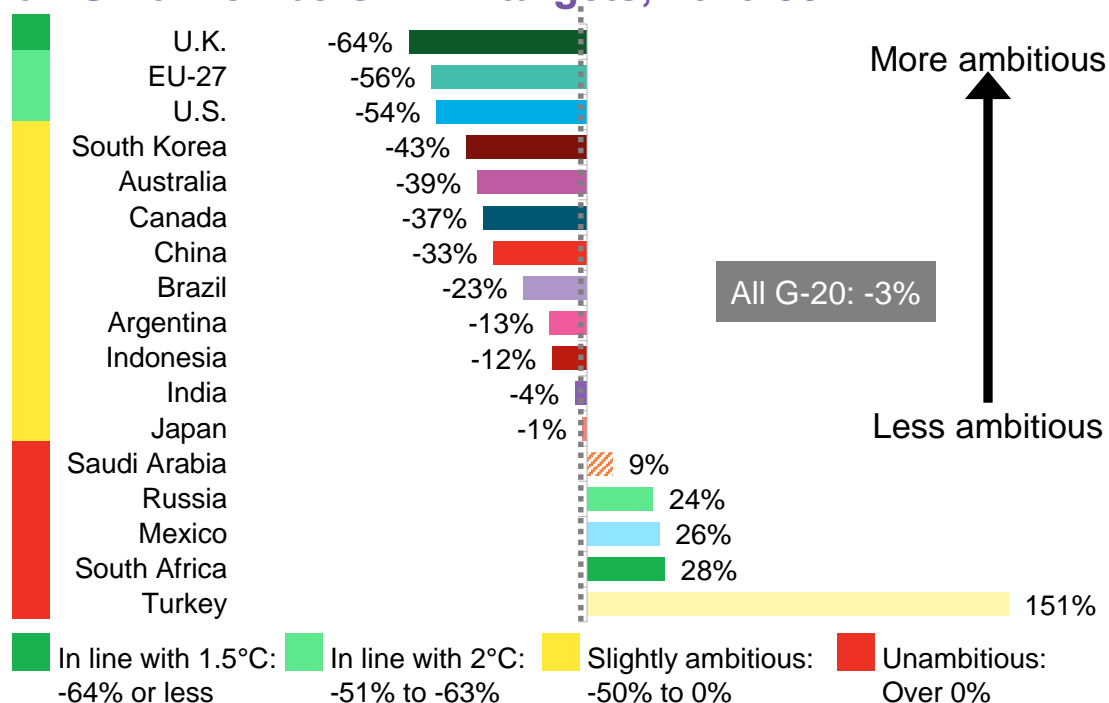
- Russia has by far the weakest 2030 target among developed G-20 countries, with a potential 19% emissions rise over 2010 levels. Even this goal is subject to the “sustainable and balanced socio-economic development of the Russian Federation”, according to its NDC. This condition is not defined, however.
- Saudi Arabia’s NDC does not include a quantitative emission target. As such, we assume that it maintains out to 2030 the same compound annual growth rate of 3% observed over 2010-18. This means that its emissions in 2030 are nearly three times the volume in 1990 and 64% up on 2010 levels.
- Note that we have applied China’s carbon-intensity target to all emissions. CO2 accounts for around two-thirds of the country’s greenhouse-gas output. This means that in practice it could see emissions increase by more than 155% relative to 2010 levels.

Source: WRI CAIT, World Bank, IMF, UNFCCC. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Comparison 2: emission intensity of GDP

- Emerging economies – eg, India and China – have often set targets based on emissions per unit of GDP. If set appropriately, such goals incentivize decarbonization, while accommodating for economic growth. We used GDP projections from the International Monetary Fund (IMF) to estimate the emission-intensity trajectory if a party were to achieve its 2030 NDC target.
- As shown on [this slide](#), economic prospects vary across the G-20 members. If the bloc were to achieve a 25% emission reduction for a 2-degree scenario, this would equate to a decrease of 51% in intensity over 2010-30. Meeting 1.5 degrees would mean a 64% cut.
- The U.K. has the most ambitious target in terms of emission intensity. This is because meeting its goal would require such a significant reduction in absolute volumes of greenhouse-gas output (-82% – [see previous slide](#)) and the country is expected to see relative modest economic growth (13%) over 2010-30. The EU-27 is not far behind its former member state for similar reasons.

Projected emission intensity per GDP changes based on G-20 members' NDC targets, 2010-30



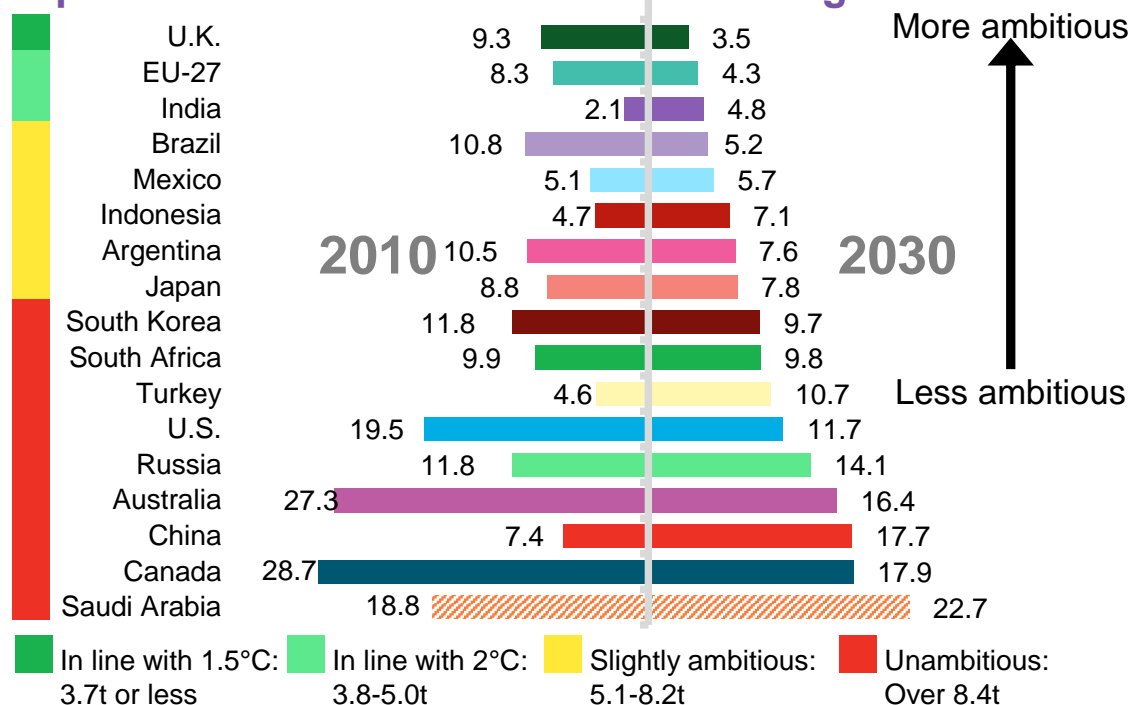
- In contrast, Indonesia, the U.S. and South Korea are relatively high in the ranking for a different reason: their targets would mean a less sizeable reduction in absolute volumes of emissions but this lack of ambition is to be outweighed by a much higher projected economic expansion.
- At the lower end of the ranking, there is a distinction between developed and developing countries: the former tend to have more modest emission-reduction targets in terms of absolute volumes (eg, Japan).
- In contrast, emerging economies are set to see their economies grow massively over the period (282% for China and 182% for India).
- The growth prospects for such large economies mean that the G-20 would achieve a minor 3% reduction in emission intensity if all members achieved their targets. This would be well behind the 51% reduction needed to limit global warming to below 2 degrees.

Source: WRI CAIT, World Bank, IMF, UNFCCC. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Comparison 3: absolute emissions per capita

- While some countries prefer emission-intensity targets, others have opted to set goals based on per-capita trends if they anticipate significant population growth. Using projections from the World Bank, the figure below shows G-20 emissions per capita in 2010 (on the left) and 2030 assuming they achieve their targets. Today, India has the lowest per-capita emissions – less than half Turkey's in second-lowest position, while at the high end lie significant fossil-fuel producers and consumers Australia, Canada, Saudi Arabia, the U.S. and Russia.
- All but five of the G-20 countries' 2030 goals would mean a cut in per-capita emissions. But only the U.K. reaches less than 3.5 metric tons – our estimate for the level required for a 1.5-degree target. Despite increasing per-capita emissions 131% from 2010-30, India remains at the lower end of the ranking and would be aligned with a 2-degree target (with 4.8 metric tons), together with the EU-27. Yet nine of the remaining countries are we define as 'Unambitious' as their 2030 per-capita emissions exceed the global average that year (8.4 metric tons). This trend means that the weighted average for the G-20 rises from 7.4 to 10.0 metric tons over the period.

2010 and 2030 projected absolute emissions per capita based on G-20 countries' NDC targets



Consumption-based emissions

These estimates relate to where emissions occur ('territorial-based emissions') rather than where goods and services are consumed. Some countries – notably the EU-27, U.K. and Japan – have considerably higher consumption-based emissions as they rely more on imports, while the reverse is the case for countries like China and Russia.

Compliance with the 1.5-degree goal would require consumption emissions to drop to 2-2.25 metric tons by 2030, according to the IPCC. This would be a considerable challenge for the U.S., for example, which stands at some 17.6 metric tons and the EU-27 and U.K. at 7.9 metric tons.

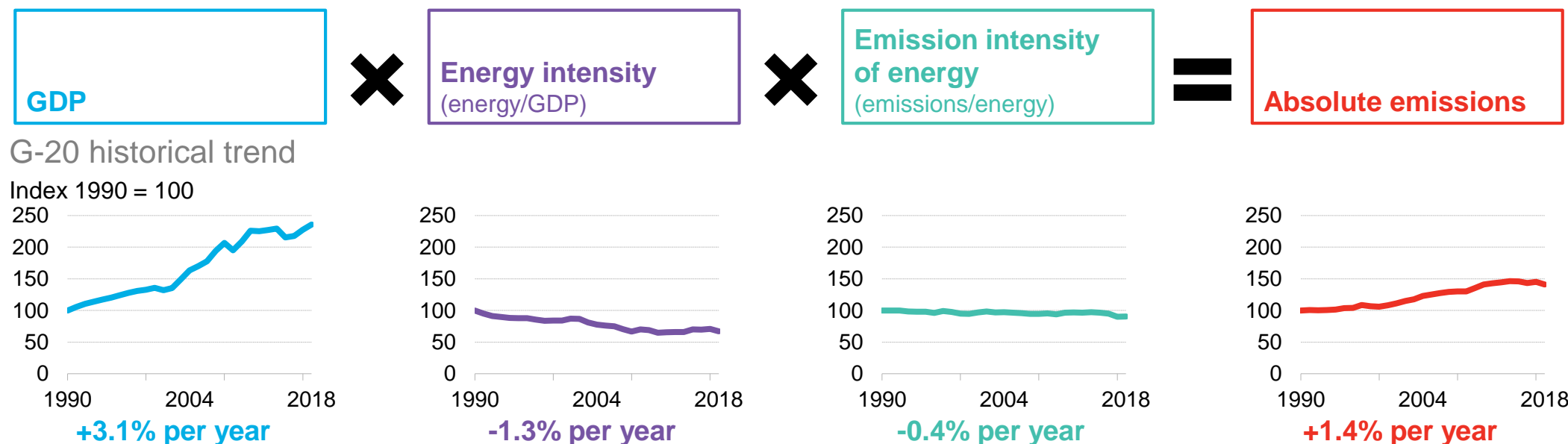
Estimates vary widely between income groups: the global top 10% of earners would need to reduce their consumption emissions to around a tenth of their current level and those in the top 1% by at least a factor of 30, according to [Oxfam](#) and the [Stockholm Environment Institute](#).

Source: WRI CAIT, World Bank, IMF, UNFCCC. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Comparison 4: gap to BAU scenario

How to calculate BAU emissions

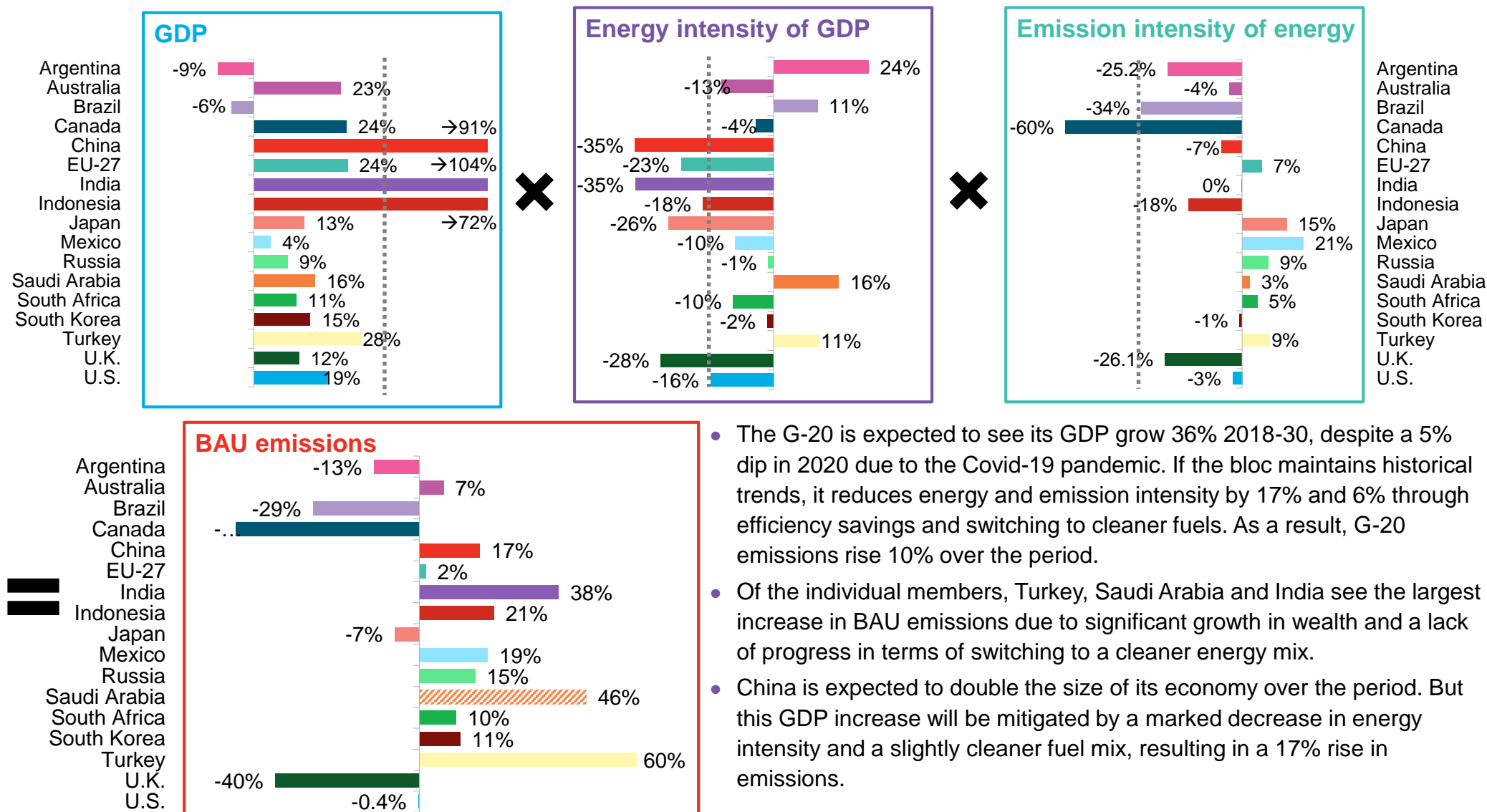
- A more accurate assessment of an NDC's ambition is arguably to take account of the effort required to achieve it, or more specifically the gap between emissions if the target is met and the level without a target (ie, under a business-as-usual, BAU, scenario). To estimate BAU emissions to 2030, we apply the 'Kaya identity' (see figure), which is used in the Intergovernmental Panel on Climate Change's (IPCC) Special Report on Emissions Scenarios and subsequent reports.
- This equation assumes that emissions are driven by population, wealth and technology, which can be broken down into energy intensity (the amount of energy consumed per unit of GDP) and emission intensity of energy (the amount of emissions per unit of energy).
- As shown in the figures below, these variables have evolved in different directions: while the G-20's weighted-average GDP increased by 3.1% per year 1990-2018, energy-efficiency improvements resulted in a 1.3% decline in energy intensity. The lack of change in emission intensity indicates that the fuel mix saw relatively little change over the period.
- The estimates for BAU emissions across the G-20 members are based on GDP projections from the International Monetary Fund (IMF), which assumes a 5% drop in global GDP in 2020 due to the Covid-19 pandemic and a return to pre-pandemic levels at global level from 2021. We extrapolate the data for total energy supply – as a proxy for energy consumed – and emissions data based on historical trends.



Source: Kaya, Y. and Yokoburi, K., *Environment, Energy, and Economy: Strategies for Sustainability*, 1997; World Bank, IMF, IEA, WRI CAIT.

Comparison 4: gap to BAU scenario

How to calculate BAU emissions - change over 2018-30

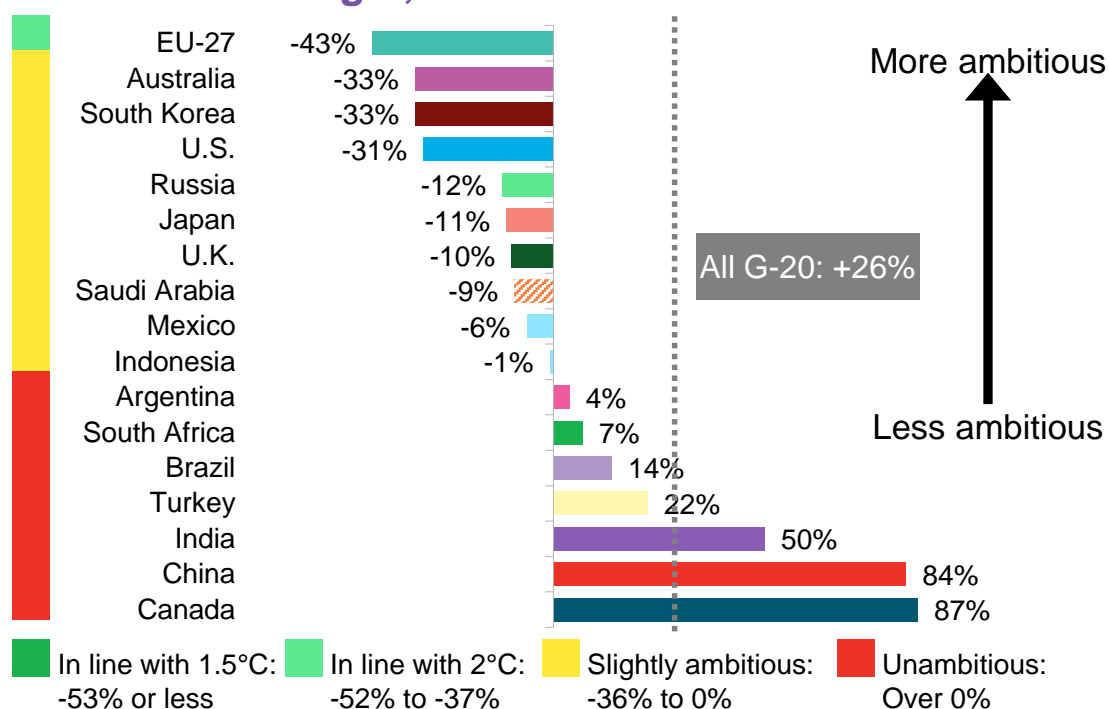


Source: WRI CAIT, World Bank, IMF, UNFCCC. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

Comparison 4: gap to BAU scenario

- This metric is arguably the most accurate reflection of the effort required for a party to meet its emission target and thus its level of ambition. To limit global warming to 1.5 and 2 degrees Celsius, emissions for the G-20 in 2030 would need to be 53% and 37% lower than business-as-usual (BAU) levels. However, our analysis finds if the current NDCs are all met, G-20 emissions would in fact be 26% *higher* than BAU in 2030.
- This is because seven G-20 countries, including major emitters China and India, incentivize no abatement. In particular, China and Canada would be able to emit 84% and 87% more in 2030 relative to 2018 levels and still meet their climate pledges.
- At the other end of the spectrum, only the EU-27 would be deemed to be aligned with a 2-degree scenario: its 2030 target would require the bloc to cut emissions to 43% of BAU levels, implying significant abatement efforts would be needed.

Required emissions cuts from BAU projections to achieve NDC target, 2030



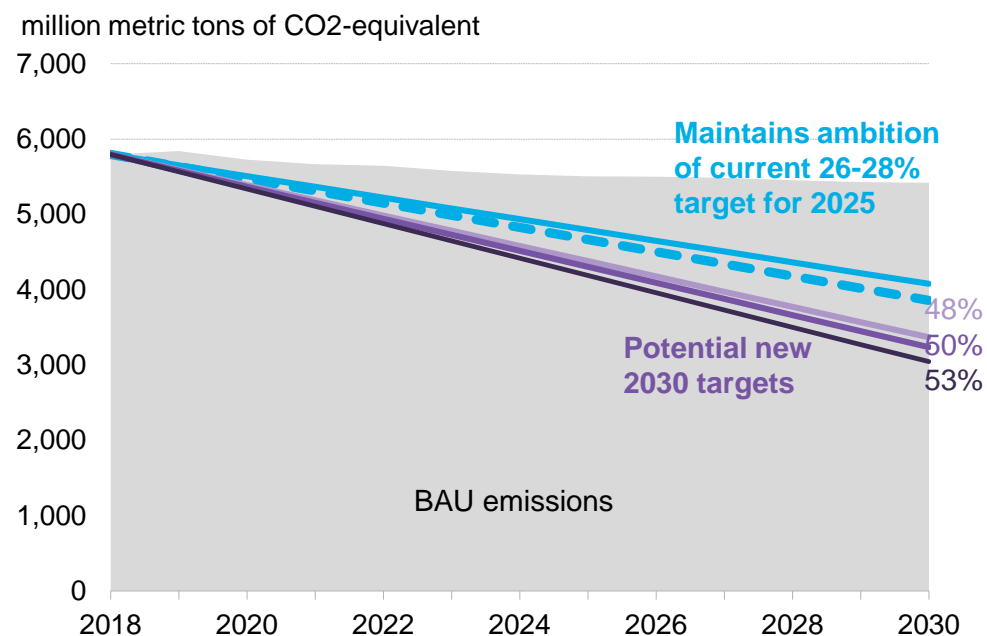
- As with the other metrics, it is important to consider these results alongside other indicators. This is because the accuracy of this metric depends on the estimates for BAU emissions and the assumption that a party maintains historical trends in energy consumption and emission intensity.
- For example, we rate the U.K. as 'Slightly ambitious' on this metric but it is in line with a 1.5-degree target in the other three. This is because it has already made progress on efficiency savings and switching to cleaner fuels, having cut energy intensity by half and emission intensity by a third over 1990-2018. On a BAU basis, therefore, it reduces emissions by 40% 2018-30 – a similar decrease required to achieve its NDC target.
- Saudi Arabia has no NDC emission target. In the scenario where 2030 goals are met, we assume that the country maintains its historical growth rate so that emissions climb 19% 2018-30. However, in the BAU scenario, it accelerates its increase in energy intensity to the extent that emissions *rise* 46% by 2030 from 2018 levels.

Source: WRI CAIT, World Bank, IMF, UNFCCC. Note: U.S. is assumed to maintain emission trends from its 2025 target. Saudi Arabia is striped to illustrate this is based on BAU emissions, as its NDC has no emission target.

What a new U.S. target might mean

- The U.S. is due to announce a new 2030 emission target at the April 22-23 climate summit. The core analysis in this report assumes the country maintains the level of ambition to 2030 consistent with its official Paris pledge of a 26% cut vs. 2005 by 2025. This equates to a 38% drop vs. 2005 by the end of the decade.
- The left-hand figure shows U.S. BAU emissions (shaded gray) and the trajectory required to achieve potential goals the White House is considering, according to [Bloomberg News](#) reporting. The right-hand table shows the potential impact each possible goal would have on the four comparison metrics. A new 48% cut by 2050 target would bring the U.S. in line with a 1.5- or 2-degree scenario for three of four indicators. But even a 53% cut – the most ambitious reportedly on the table – would not bring U.S. 2030 emissions per capita below the global average. However, a target of 53% or more would boost the total score BNEF has calculated to 13 out of 20 - up from the current 7 - putting it more or less on a par with the EU and U.K. in terms of its total ambition score.
- How the U.S. would implement sufficient domestic policies to meet a new target remains to be seen. The U.S. is not unique in this regard; all G-20 countries have room for improvement in terms of implementing concrete policies to achieve deep decarbonization.

U.S. emissions and target trajectories



Source: BloombergNEF.

Potential impact of 2030 on ambition metrics

Reduction on 2005	Absolute emissions	Emission intensity	Emissions per capita	Gap to BAU scenario
26% by 2025	In line with 1.5°C	In line with 1.5°C	Unambitious	Slightly ambitious
48% by 2030	In line with 1.5°C	In line with 1.5°C	Unambitious	In line with 2°C
50% by 2030	In line with 1.5°C	In line with 1.5°C	Unambitious	In line with 2°C
53% by 2030	In line with 1.5°C	In line with 1.5°C	Unambitious	In line with 2°C

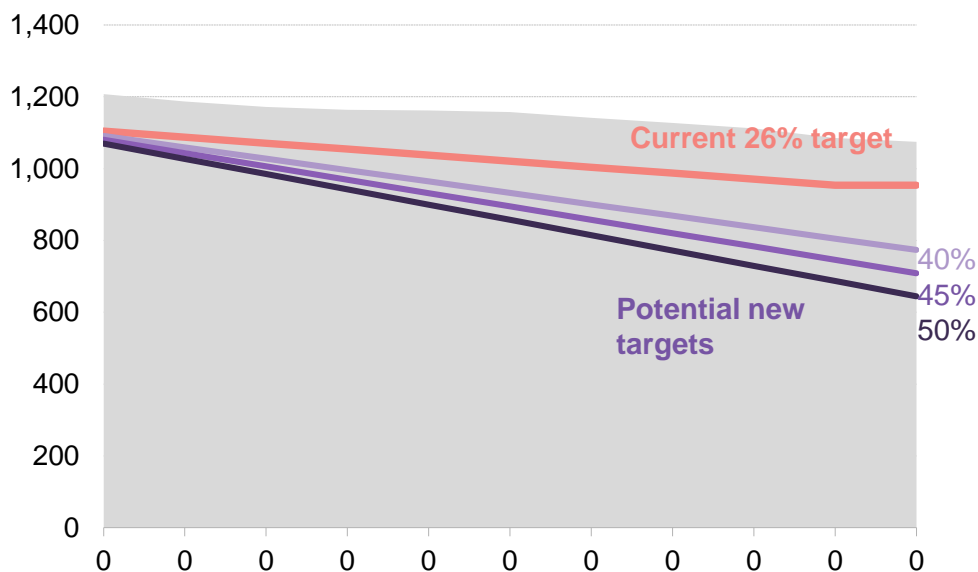
■ In line with 1.5°C
 ■ In line with 2°C
 ■ Slightly ambitious
 ■ Unambitious

What a new Japan target might mean

- The Japanese government is also discussing a more ambitious 2030 emission target to be announced “as soon as possible” before COP26, Environment Minister Shinjiro Koizumi said at the BloombergNEF Summit April 14. This could mean the week of the White House-hosted climate summit April 22-23 after President Joe Biden and Prime Minister Yoshihide Suga launched their U.S.-Japan climate partnership.
- If Japan retains its current target of a 26% reduction on 2013 levels, it may come under pressure to make a stronger commitment: our analysis indicates that it has the least ambitious NDC pledge of the developed countries, with an aggregate score of 4 points out of 20. The government has not officially announced the proposed targets under discussion, but media reports suggest it could in the 40-50% range.
- Even a 40% goal would mark a notable increase in ambition, as Japan would be in line with a 2-degree scenario on three of the four metrics used in our analysis. A pledge of 45% or 50% would raise its aggregate score to 12 points out of 20 – three times its current total. It would also make it easier for the country to reach net-zero emissions by 2050, as pledged by Suga in October 2020.

Japan emissions and target trajectories

million metric tons of CO₂-equivalent



Potential impact on ambition metrics

Reduction on 2013	Absolute emissions	Emission intensity	Emissions per capita	Gap to BAU scenario
26%				
40%				
45%				
50%				

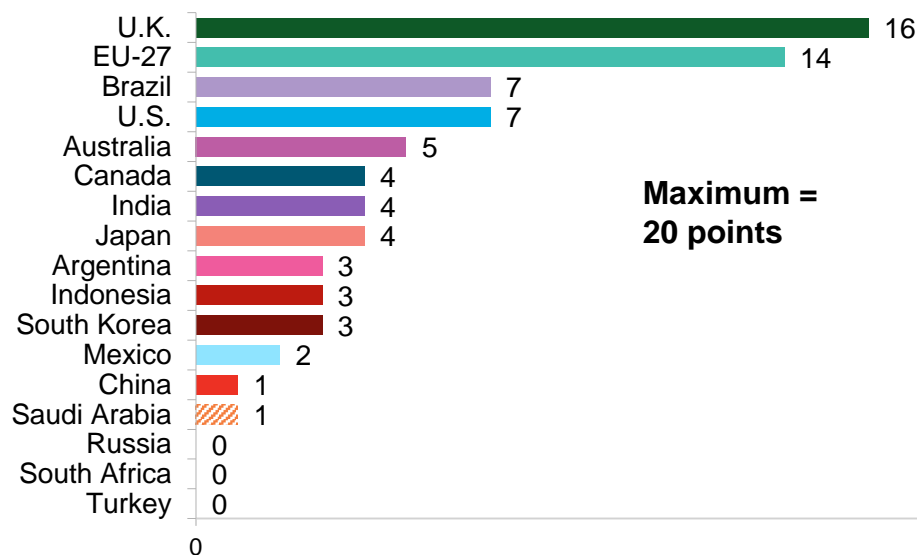
■ In line with 1.5°C: -50% or less
 ■ In line with 2°C: -49% to -32%
 ■ Slightly ambitious: -31% to 0%
 ■ Unambitious: Over 0%

Source: BloombergNEF. Note: Value for BAU emissions in 2019 was based on data from Japan's Ministry of Environment.

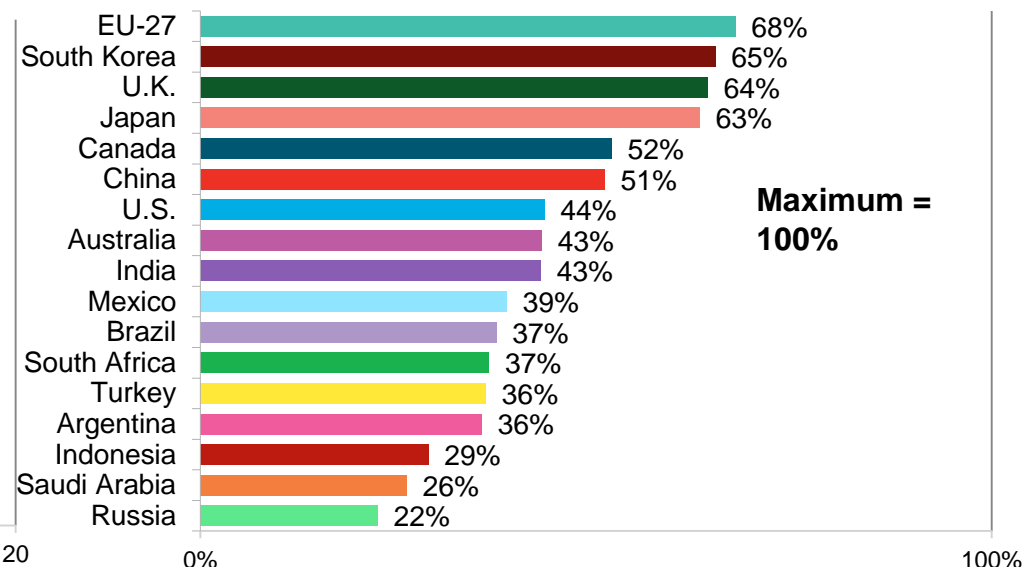
Policies to achieve emission targets

- In addition to having the most ambitious emission targets, current and former EU member states – Germany, France Italy, and the U.K. – have also implemented relatively strong decarbonization policies compared with other G-20 countries, BloombergNEF has found. The *G-20 Zero-Carbon Policy Scoreboard* ([web](#) | [terminal](#)) evaluates countries' policies based on 122 qualitative and quantitative metrics.
- The nations in the top quartile have a higher number of robust, concrete measures to achieve ambitious-but-achievable goals. Their policy-making processes are relatively transparent and predictable, and their initiatives are starting to have a measurable impact increasing renewables build or EV sales, for example. No country has a perfect score for all areas, with those for the industry and buildings sectors most commonly the lowest. Governments will therefore need to consider how to best address these weaknesses if they wish to achieve their climate targets and deliver their share of emission reductions.
- These figures illustrate that some countries face significant gaps between their climate ambitions and the levels of concrete policy support in place. Brazil and Australia both exemplify this implementation gap.
- Some members of the G-20, however, have both unambitious climate pledges *and* little in the way of domestic decarbonization policies. These governments have major room for improvement. They have done most to decarbonize their power sectors, but even those policies have been poorly implemented. These countries have done little to nothing to tackle their transport, industry, and buildings sectors.

NDC target ambition ranking

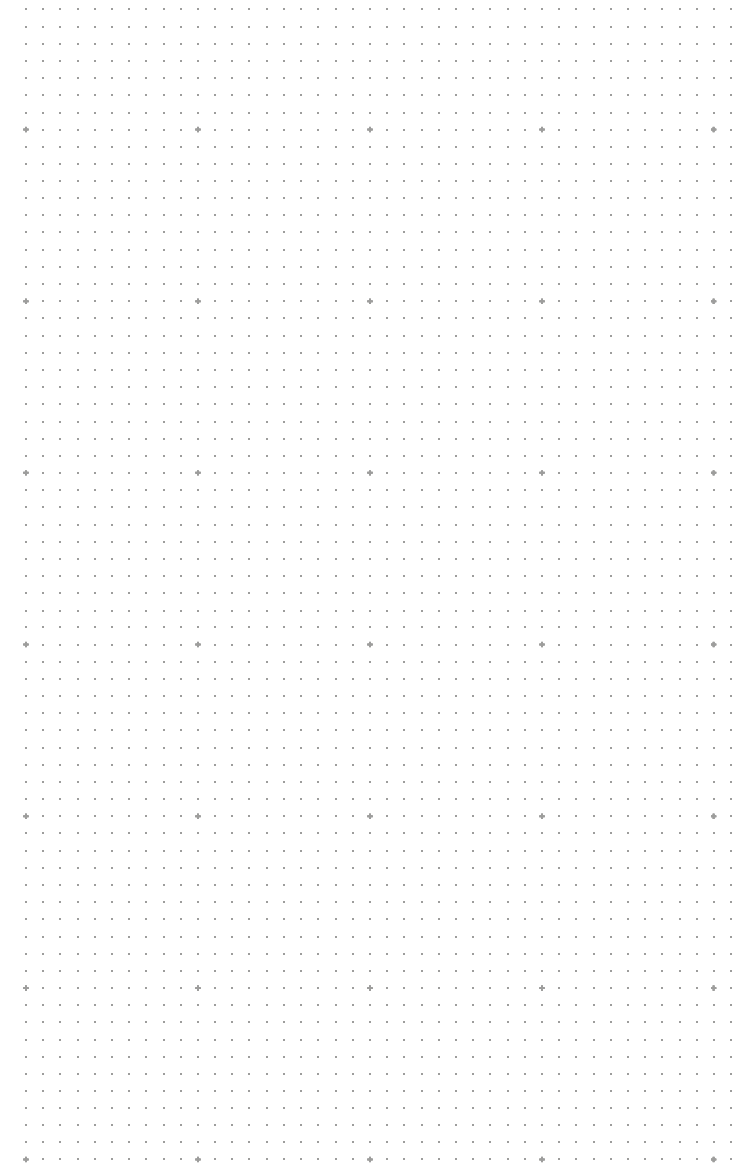


Zero-Carbon Policy Scoreboard ranking



Source: BloombergNEF ([web](#) | [terminal](#)). Note: Score for EU-27 in the right-hand chart = average for Germany, France and Italy.

Country snapshots



Argentina

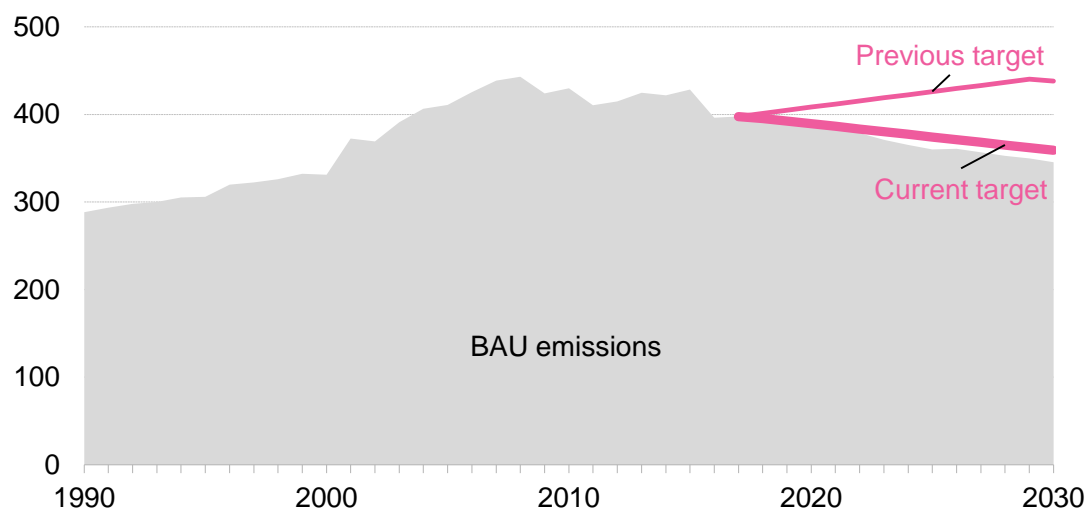
Argentina is one of the few G-20 members to have upped the ambition of its emission target in its latest NDC, submitted in December 2020. It currently pledges to cap emissions at 359 million metric tons compared with its previous unconditional goal of 483 million in its first plan. Despite the lower cap, its target remains on the unambitious side as the country could afford to slightly increase BAU emissions and still meet its goal, according to our analysis.

The government will need to strengthen its low-carbon policies if it wants to ramp its climate ambition. Argentina has a solid framework for clean power and biofuels, but lacks support elsewhere. It faces other challenges too, including the ongoing macroeconomic crisis, financial instability and capital controls.

These will also hinder Argentina's efforts to realize the net-zero target for 2050 announced at end-2020. This target will be included in the country's long-term emission strategy expected to be published around the time of COP26.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	21st
Share of global emissions	0.8%

Near-term ambition

2020 NDC status	✓ Second NDC
More ambitious emission target?	✓
Target deadline	2030
Type	Emissions cap
Unconditional target level (base year)	359MtCO ₂ e
Conditional target level	✗
Change in absolute emissions (2010-30)	-16%
Change in emission intensity of GDP (2010-30)	-13%
Emissions per capita (2030)	7.6t
Required abatement (2018-30)	+4%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	Official position of government

Australia

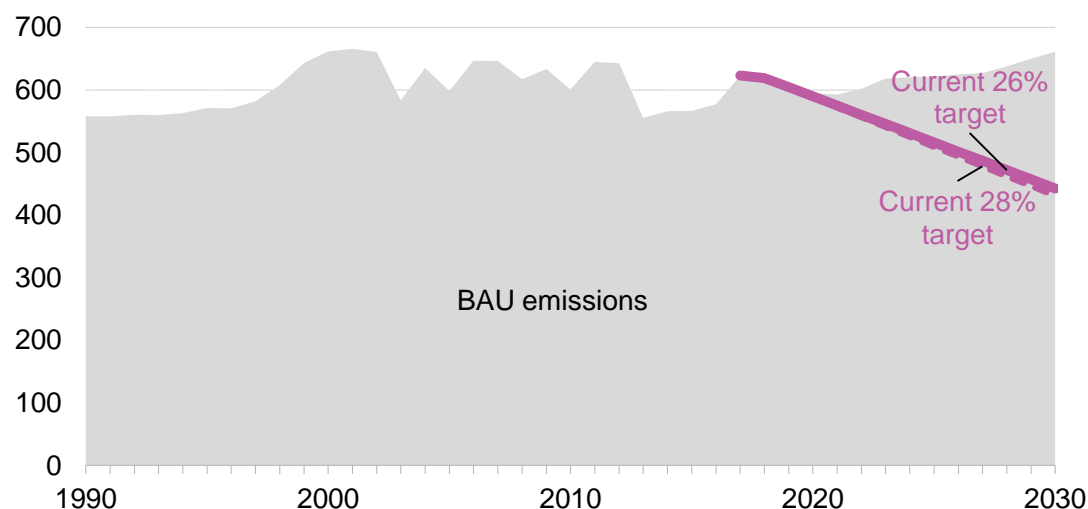
On the basis of the overall rankings for Australia in this note, the country appears to have a relatively ambitious 2030 target, which is meant to be “a floor on Australia’s ambition”. However, the government will likely still come under pressure to ratchet up ambition before COP26, alongside other developed countries. Its “goal is to reach net zero emissions as soon as possible, and preferably by 2050,” Prime Minister Scott Morrison said in a [speech](#) on February 1. But he said that this was not an official commitment, adding “but when we get there, when we get there.”

The government’s [projections](#) suggest that the gap between emissions and the 2030 target is narrowing. However, on a BAU basis, our analysis indicates that the country is on course to be well above its current 26-28% goal.

Even if Australia does set a more ambitious NDC target, it will probably come with a raft of exemptions and conditions. Still a higher, near-term goal looks more likely than a national net-zero commitment in line with many of its major trading partners. Of greater concern is the fact that the country lacks concrete policy support to achieve its existing 2030 goal, as [shown here](#).

Emissions based on BAU projection and NDC target

million metric tons of CO2-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	15th
Share of global emissions	1.3%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✗
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-26-28% (on 2005)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-26%
Change in emission intensity of GDP (2010-30)	-39%
Emissions per capita (2030)	16.4t
Required abatement (2018-30)	-33%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	State level only

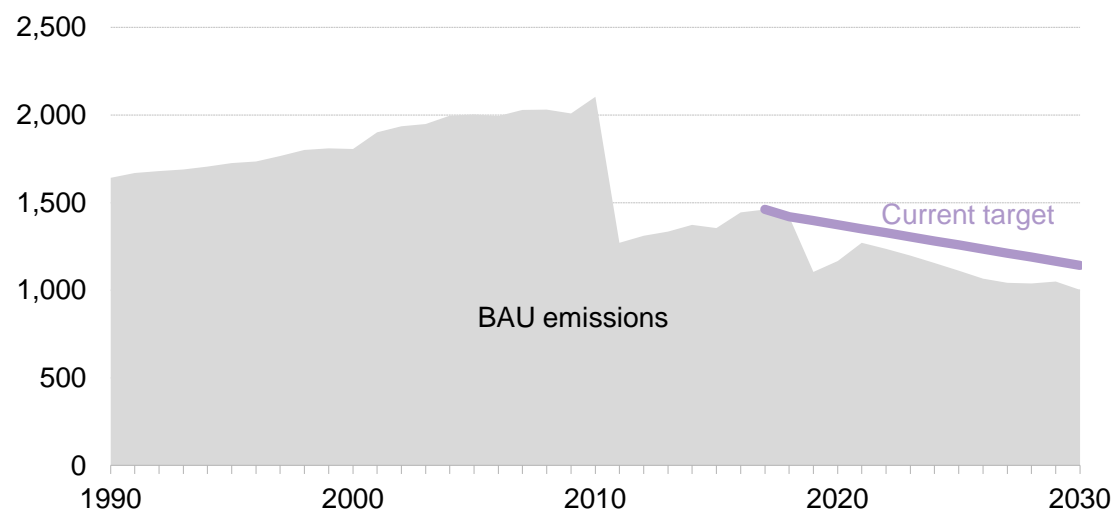
Brazil

Based on its total score, Brazil has the most ambitious 2030 emission target of the developing countries in the G-20 and is in line with a 1.5-degree scenario in terms of the change in absolute greenhouse-gas output 2010-30. However, on a BAU basis, emissions could be 14% higher in 2030 and the target would still be met. In any case, its biofuel program and renewables auctions mean it has made most progress in the area of low-carbon fuels and clean power, but government support for other sectors is lacking.

The government suggests its updated NDC is “compatible with an indicative long-term objective of reaching climate neutrality in 2060”. It would require the use of carbon offsets to achieve that goal and finance from abroad of at least \$10 billion a year. This move is made less convincing by Brazil’s poor record on deforestation of the Amazon rainforest, which has surged under the Bolsonaro administration. At Paris, the country pledged to crack down on illegal deforestation by 2030 and restore 12 million hectares of forests. But its latest NDC does not refer to these commitments.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	7th
Share of global emissions	2.9%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	Added 2030 target
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-43% (on 2005)
Conditional target level	✗
Change in absolute emissions (2010-30)	-46%
Change in emission intensity of GDP (2010-30)	-23%
Emissions per capita (2030)	5.2t
Required abatement (2018-30)	+14%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	Under discussion

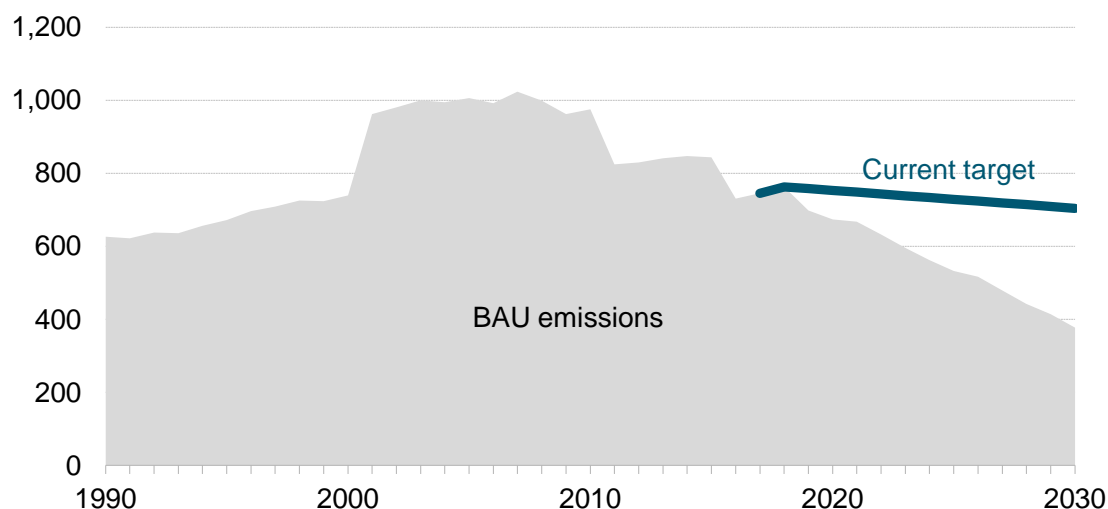
Canada

As a major fossil-fuel producer, Canada remains in the top two among G-20 countries for projected emissions per capita in 2030 and it requires the least abatement to achieve its 2030 NDC target. This is partly due to its modest goal but also because of recent progress in cutting emissions. The government is preparing an updated NDC, which it says is to be submitted “well in advance of” COP26. (A consultation was published in March 2021.) Having previously aligned its target with that of the U.S., Trudeau may be waiting for Biden to make the first move.

Canada’s new long-term strategy is due to include a net-zero target. At end-2020 a bill was introduced in Parliament to achieve the goal and the government published an expansive climate plan ([web](#) | [terminal](#)). Federal policy makers now have a stronger hand after the Supreme Court ruled in favor of the national carbon tax. The tax, which plays a central role in Trudeau’s net-zero strategy, is to rise to C\$170 (\$135) per metric ton by 2030. Ontario, Alberta and Saskatchewan had filed lawsuits arguing the levy infringed on their jurisdiction.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	10th
Share of global emissions	1.6%

Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-30% (on 2005)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-28%
Change in emission intensity of GDP (2010-30)	-37%
Emissions per capita (2030)	17.9t
Required abatement (2018-30)	+87%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2016
2050 emission target	-80% (on 2005)
Net-zero target	Legislative process

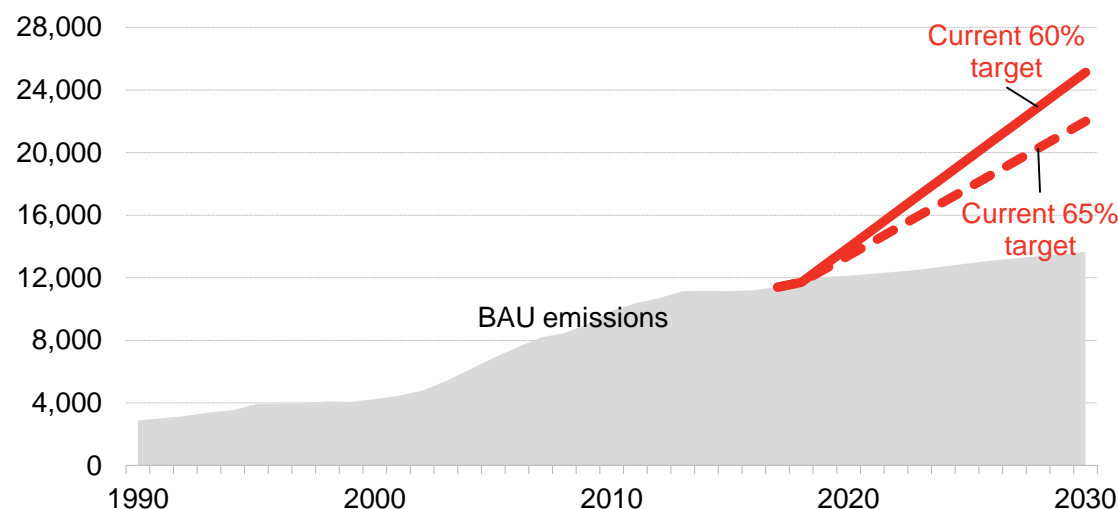
China

It is perhaps unsurprising that China has yet to update its NDC after the country resisted calls at the 2019 COP for parties to ratchet up their ambition in time for the next UN climate summit. The country intends to reach peak carbon emissions by 2030, according to its 14th Five-Year Plan released in March 2021, although investment in emission-intensive sectors like coal-fired power plants is not banned. For more detail, see: BNEF's Take on China's 14th Five-Year Plan ([web](#) | [terminal](#)).

A more ambitious 2030 target would be needed to put China on a path to carbon neutrality by 2060 – the pledge announced by President Xi Jinping in September. Realizing this goal now presents an enormous challenge for the major emitter, as discussed in our note ([web](#) | [terminal](#)). More broadly, China's move likely encouraged other major economies to make similar pledges. Prior to Xi's UN speech, the EU had already asked China to commit to a date for carbon neutrality in their latest trade negotiations and the target could put China in a favorable position if the EU imposes any carbon-border-adjustment mechanism.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	1st
Share of global emissions	23.9%

Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2030
Type	Intensity (GDP)
Unconditional target level (base year)	-60-65% (on 2005)

Conditional target level	✗
Change in absolute emissions (2010-30)	+155%
Change in emission intensity of GDP (2010-30)	-33%
Emissions per capita (2030)	17.7t
Required abatement (2018-30)	+84%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	✓ Official position of government

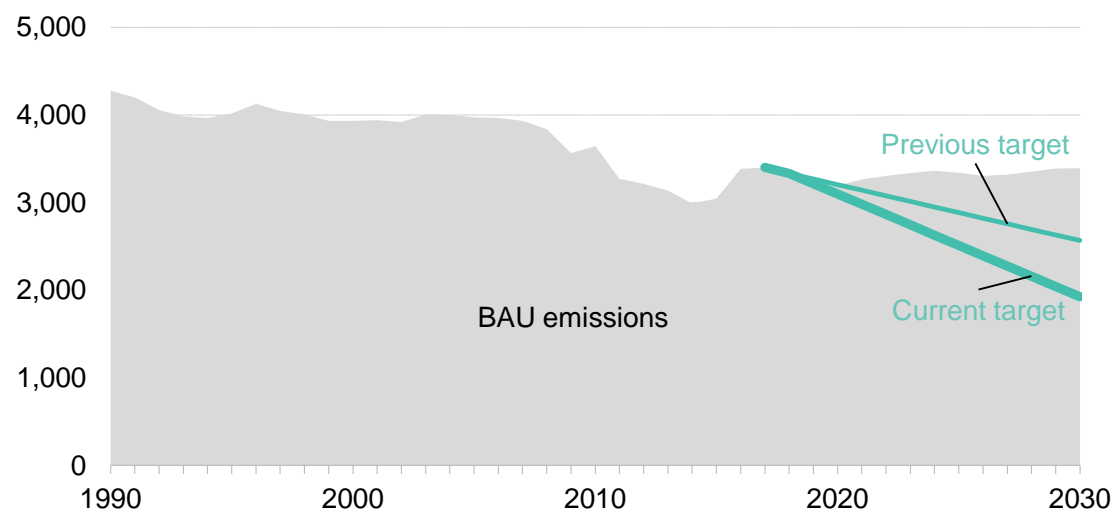
EU-27

The EU has one of the most ambitious NDC targets in the G-20. That said, it is struggling to legislate its 2030 goals and to set a net-zero by 2050 goal. EU leaders' deal in December was subject to various conditions to bring on board fossil-fuel-dependent member states. But the Parliament is pushing for a 60% cut with little progress made in the latest talks with the Council and Commission in late March 2021. Further delay could jeopardize the forthcoming package of policies to achieve the more ambitious target.

Regardless, the EU will likely still push for more climate action and collaboration at COP26. It may come under fire from its trading partners if the European Commission releases the proposal for a carbon-border tariff in the summer, as planned. The Parliament seems to be in favor, having adopted a non-binding report in March 2021 endorsing such a mechanism ([web](#) | [terminal](#)). It will be challenging to ensure it is tough enough to prevent carbon leakage but not so tough that it leads to backlash from trading partners. For more, see: *New Dawn for Carbon Pricing as EU Targets Imports* ([web](#) | [terminal](#)).

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	4th
Share of global emissions	6.8%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✓
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-55% (on 1990)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-47%
Change in emission intensity of GDP (2010-30)	-56%
Emissions per capita (2030)	4.3t
Required abatement (2018-30)	-43%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2020
2050 emission target	Carbon neutrality
Net-zero target	Legislative process

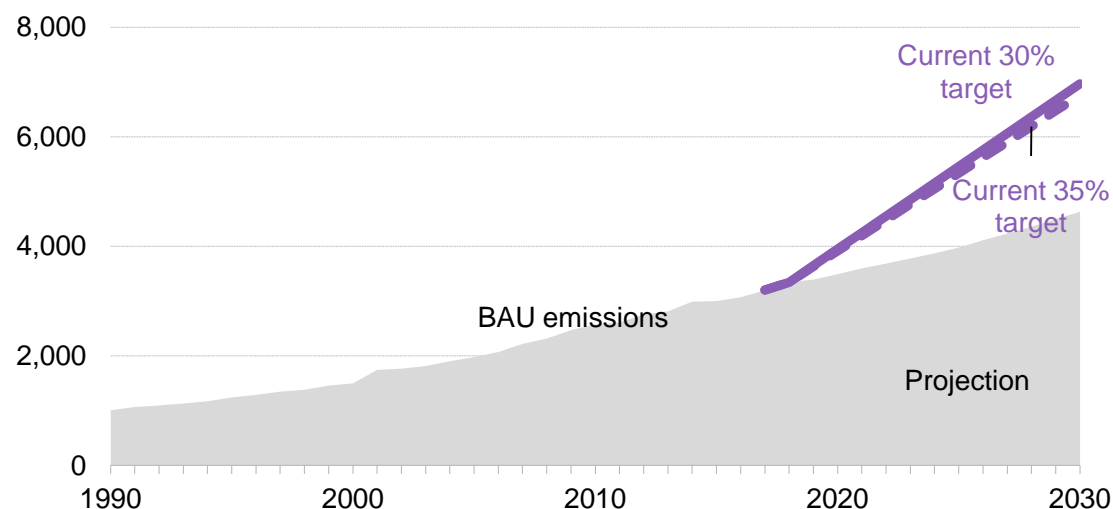
India

The Indian government has set up a task force to examine potential timelines and pathways for reaching net-zero emissions. Having last submitted an NDC in 2016, it is under pressure to clarify its short- and long-term ambitions. If it achieves its current 2030 target, emissions will more than double from 2018 levels, although so too will GDP. As discussed above, India has by far the lowest per-capita emissions of the G-20 members, and its NDC pledge would be in line with a 2-degree scenario if assessed on that basis.

Nonetheless, India is the world's third-largest emitter and its current target would enable it to increase greenhouse-gas output by half again by 2030. The country may therefore request significant support (financial or otherwise) in return for a net-zero commitment. India's current NDC requests over \$1 trillion from developed countries, accounting for a quarter of the total \$4.3 trillion requested by emerging economies. Alternatively, the government may opt for a near-zero emission target, as it seeks to balance the need to tackle climate change and to enable economic development.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	3rd
Share of global emissions	6.8%

Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2030
Type	Intensity (GDP)
Unconditional target level (base year)	-33-35% (on 2005)
Conditional target level	✗
Change in absolute emissions (2010-30)	+170%
Change in emission intensity of GDP (2010-30)	-4%
Emissions per capita (2030)	4.8t
Required abatement (2018-30)	+50%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	✗

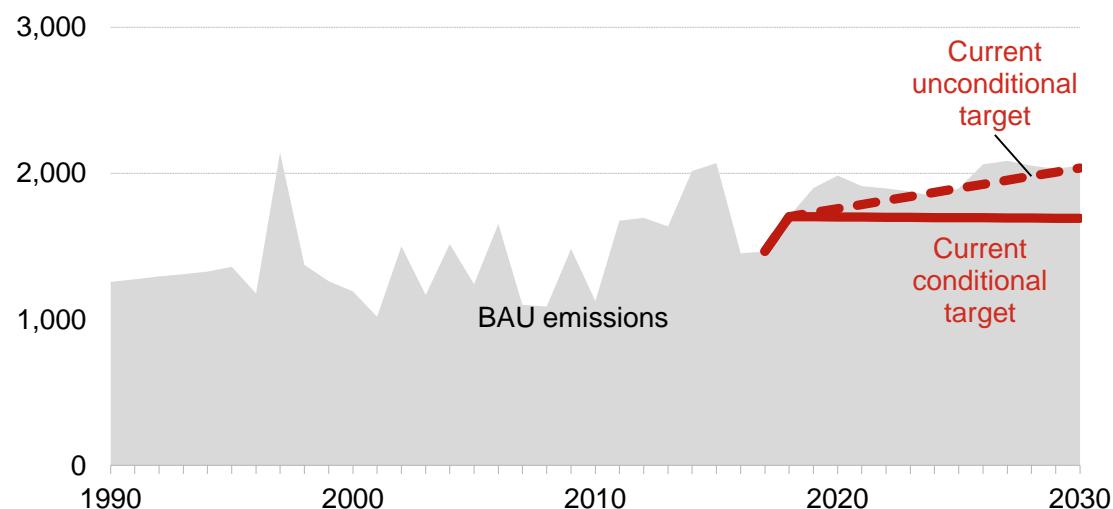
Indonesia

Indonesia intends to submit an updated climate plan at an unspecified date in the near future. A net-zero target is reportedly on the cards, subject to financing from developed nations. Its current unconditional NDC goal is not in line with Paris on the basis of any of the four metrics this note details. Its latest NDC, released in 2016, includes a more ambitious target for a 41% reduction on its baseline scenario “subject to availability of international support for finance, technology transfer and development and capacity building”. But this pledge would only be slightly more ambitious.

If Indonesia makes a stronger emission pledge, it will need to improve its domestic policy framework and improve investor confidence: uncertainty is high after the government made sudden changes to the renewables regulation without industry consultation, while the tariff framework for clean power projects put them in direct competition with cheap coal. There is a general lack of government incentives or regulations in the other sectors. Another challenge will be how to mitigate emissions from deforestation and land-use change, with millions of hectares of forest included in existing logging and plantation concessions.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	6th
Share of global emissions	3.5%

Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2030
Type	Baseline scenario
Unconditional target level (base year)	-29%
Conditional target level	-41%
Change in absolute emissions (2010-30)	+81%
Change in emission intensity of GDP (2010-30)	-12%
Emissions per capita (2030)	7.1t
Required abatement (2018-30)	-1%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	✗

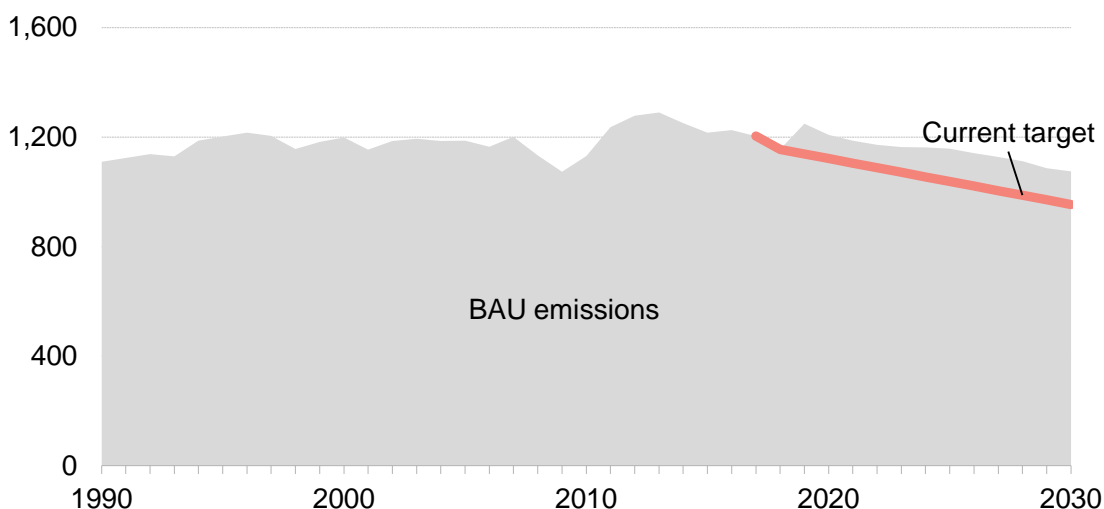
Japan

Japan's 2030 target as of April 19, 2021 is on a par with Canada in terms of ambition but below all other developed countries in the G-20, except Russia. But the government is planning to announce a stronger 2030 commitment "as soon as possible" before COP26, Environment Minister Shinjiro Koizumi said at the BloombergNEF summit April 14. Japan will need to accelerate the current downward trend in emissions to meet its net-zero target for 2050, announced – to the surprise of many – by Prime Minister Yoshihide Suga at end-2020.

Achieving this goal will require more policy support to accelerate the decarbonization of the power sector and promote electrification of end-use sectors, as well as low-carbon fuels ([web](#) | [terminal](#)). The government has already begun discussions on revamped carbon pricing – its current levy on fossil-fuel consumption is too low to spur decarbonization. It is due to announce a higher renewable energy target in 2Q and is mulling a policy to phase out inefficient coal plants, but the measure leaves the path for plants to remain online by co-firing biomass, undermining the nation's climate goals ([web](#) | [terminal](#)).

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	8th
Share of global emissions	2.4%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✗
Target deadline	FY 2030
Type	Base year
Unconditional target level (base year)	-26% (on FY 2013)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-16%
Change in emission intensity of GDP (2010-30)	-1%
Emissions per capita (2030)	7.8t
Required abatement (2018-30)	-11%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2019
2050 emission target	-80% (on 2010)
Net-zero target	Legislative process

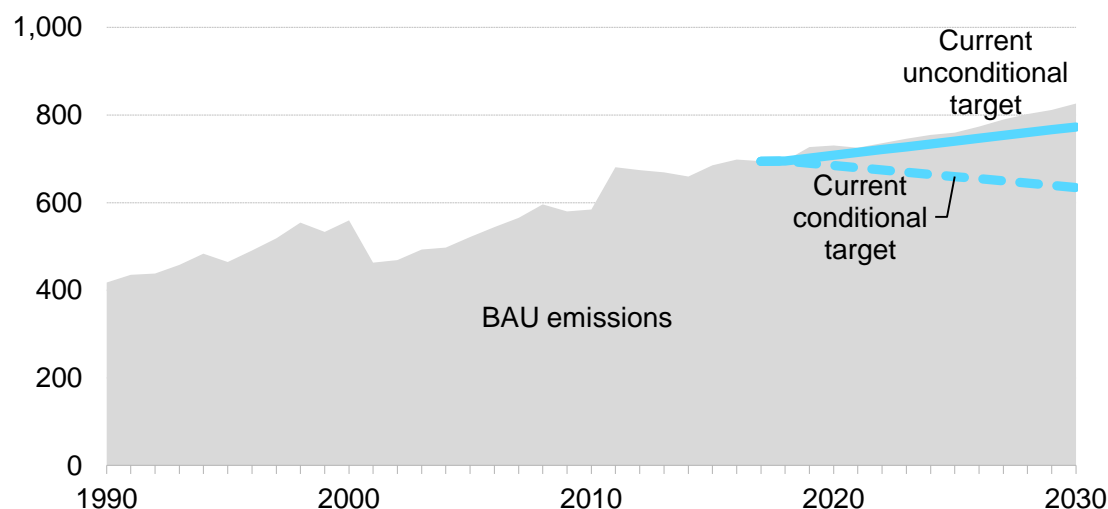
Mexico

Mexico's NDC target for greenhouse-gas emissions is insufficient to limit global warming to 1.5 or 2 degrees Celsius, putting the country at the lower end of the G-20 ranking. "If there are more resources available for implementation" (according to its NDC), it would raise its target to 36%, meaning emissions in 2030 would be 23% below BAU – but still not enough to comply with Paris. The government has shown no signs of announcing a more ambitious goal and its explicit efforts to block renewable power deployment will be more likely to impede decarbonization.

The country's long-term strategy, submitted by the previous administration, includes a 2050 target for a 50% reduction below 2000 levels. A net-zero pledge seems unlikely, given that current President Andrés Manuel López Obrador (AMLO) has cut the climate-action budget and prioritized development of state-owned oil and power companies as a way to ensure "energy sovereignty". In March, AMLO signed a controversial power-sector bill but it was suspended indefinitely by a federal court. In response, the government may seek a constitutional reform of the energy sector. For more, see our note ([web](#) | [terminal](#)).

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	11th
Share of global emissions	1.4%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✗
Target deadline	2030
Type	Baseline scenario
Unconditional target level (base year)	-22%
Conditional target level	-36%
Change in absolute emissions (2010-30)	+32%
Change in emission intensity of GDP (2010-30)	+26%
Emissions per capita (2030)	5.7t
Required abatement (2018-30)	-6%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2016
2050 emission target	-50% (on 2000)
Net-zero target	✗

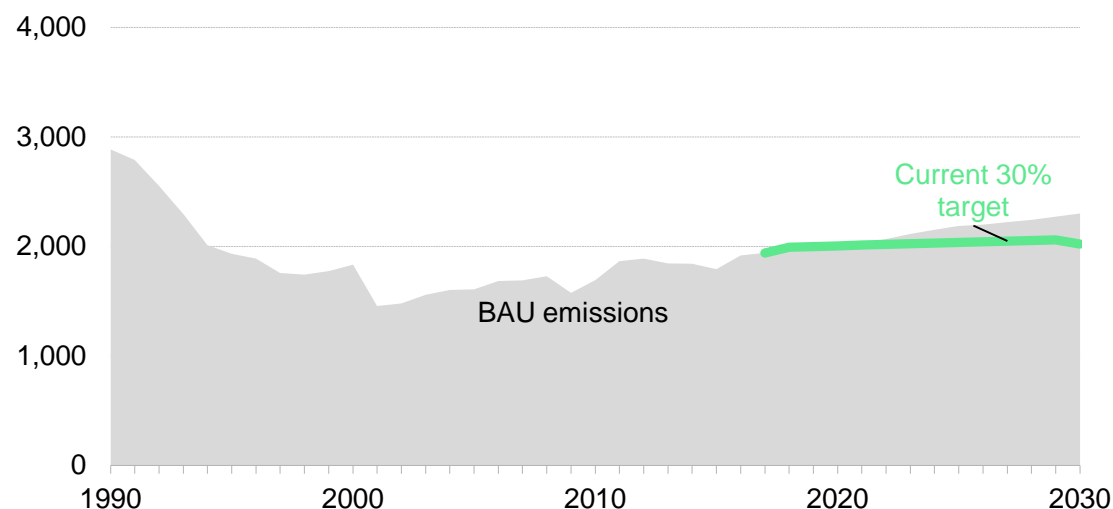
Russia

Russia has one of the least ambitious NDC targets of the G-20. Even this goal is subject to the conditions that it takes “into account the maximum absorptive capacity of forests and other ecosystems and subject to the sustainable and balanced social-economic development of the Russian Federation”. How this would be defined is not clear. The country has made some progress in increasing energy efficiency (a 6% decrease over 1990-2017) but even less in switching to cleaner fuels (less than 1% reduction in emission intensity of energy).

We therefore expect greenhouse-gas output to rise 15% on a BAU basis 2018-30 – more than any other Annex I party in the G-20. As a result, it may still struggle to realize its modest NDC target, especially as the country lacks concrete incentives and regulations to spur decarbonization. Russia came last in BloombergNEF’s assessment of G-20 countries’ zero-carbon policies. For the foreseeable future, Russia will remain a leading oil and gas producer and exporter, although the government is exploring how to diversify the economy. It is also devising a system for companies to monitor and report their emissions.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	5th
Share of global emissions	4.1%

Near-term ambition

2020 NDC status	✓ First NDC
More ambitious emission target?	✗
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-30% (on 1990)
Conditional target level	n/a
Change in absolute emissions (2010-30)	+19%
Change in emission intensity of GDP (2010-30)	+24%
Emissions per capita (2030)	14.1t
Required abatement (2018-30)	-12%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	✗

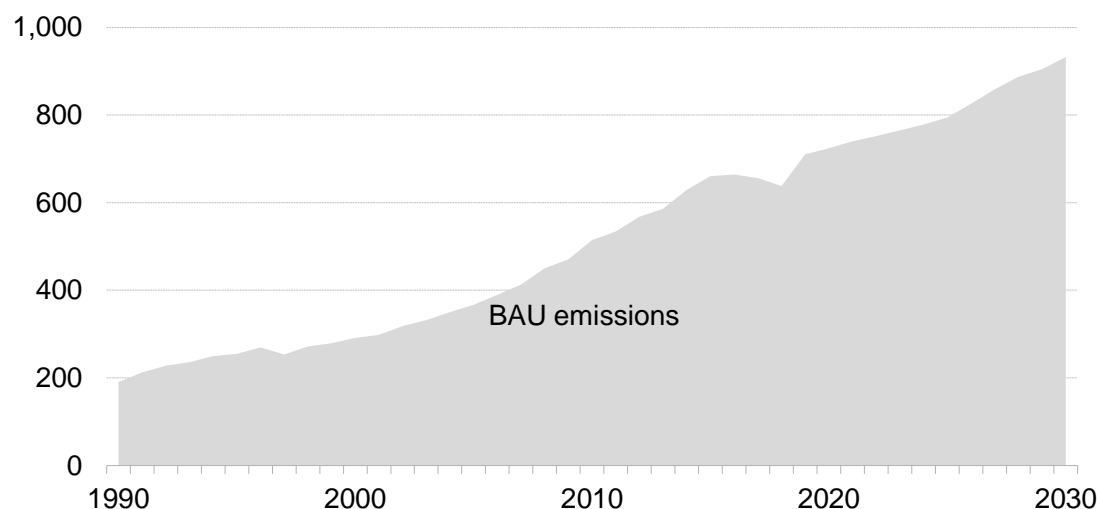
Saudi Arabia

Saudi Arabia's NDC, submitted in 2016, does not include a quantitative emission target. Instead the Kingdom said it would “engage in actions and plans in pursuit of economic diversification that have co-benefits in the form of greenhouse gas (GHG) emission avoidances and adaptation to the impacts of climate change, as well as reducing the impacts of response measures.” The kingdom did submit an ‘Intended Nationally Determined Contribution’ - climate plans submitted to the UN before the Paris Agreement came into force. Thereafter these plans have been known as ‘NDCs’.)

Saudi's INDC said that the measures in its plan would achieve a reduction of “up to” 130 million metric tons in emission reductions in 2030. But it did not specify a baseline projection for emissions in that year, making it impossible to measure progress. We have therefore not included it in this note, not least because it reserves the right to curtail ambition in the event that oil export revenues diminish, as was notably the case over 2020. Instead of emission targets, the kingdom has focused on renewables deployment, although it is some way from achieving its targets ([web](#) | [terminal](#)).

Emissions based on BAU projection

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	14th
Share of global emissions	1.3%

Near-term ambition

2020 NDC status	×
More ambitious emission target?	×
Target deadline	×
Type	×
Unconditional target level (base year)	×
Conditional target level	×
Change in absolute emissions (2010-30)	+64%
Change in emission intensity of GDP (2010-30)	+9%
Emissions per capita (2030)	22.7t
Required abatement (2018-30)	-9%

Long-term ambition

Long-term climate plan sent to the UN?	×
2050 emission target	×
Net-zero target	×

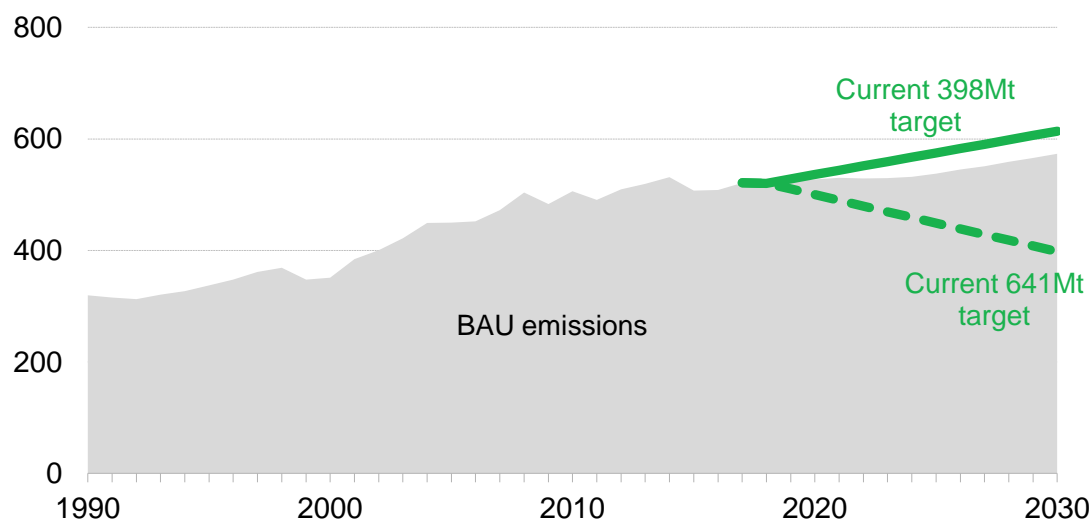
South Africa

South Africa's 2016 NDC includes an unambitious target for 2030: emissions of 614 million metric tons in that year would equate to a 21% increase on 2010 levels. However, in March the Cabinet approved a new climate plan, which is open for public consultation and due to be submitted before COP26. The new target would have the same minimum of 398 million metric tons but would reduce the maximum by 40% to 440 million. If achieved, this would represent a 13% decrease on 2010, albeit not enough to limit global warming to 2 degrees.

Like India and other developing countries, South Africa has said it requires funding from abroad to achieve its emission-reduction goals. The draft NDC estimates that it will require some \$4.5 billion per year by 2025 and \$8 billion annually over 2026-30. Looking beyond, the Cabinet approved a net-zero target for 2050, which was reiterated in its long-term emission strategy submitted to the UN. But it has not yet been submitted to Parliament. Its previously successful renewables auction program is at last back up and running, but the government will need to introduce significant support in other sectors to meet that 2050 goal.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	16th
Share of global emissions	1.1%

Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2025-30
Type	Emissions cap
Unconditional target level (base year)	398-614MtCO ₂ e
Conditional target level	✗
Change in absolute emissions (2010-30)	+21%
Change in emission intensity of GDP (2010-30)	+28%
Emissions per capita (2030)	9.8t
Required abatement (2018-30)	+7%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2020
2050 emission target	✗
Net-zero target	Legislative process

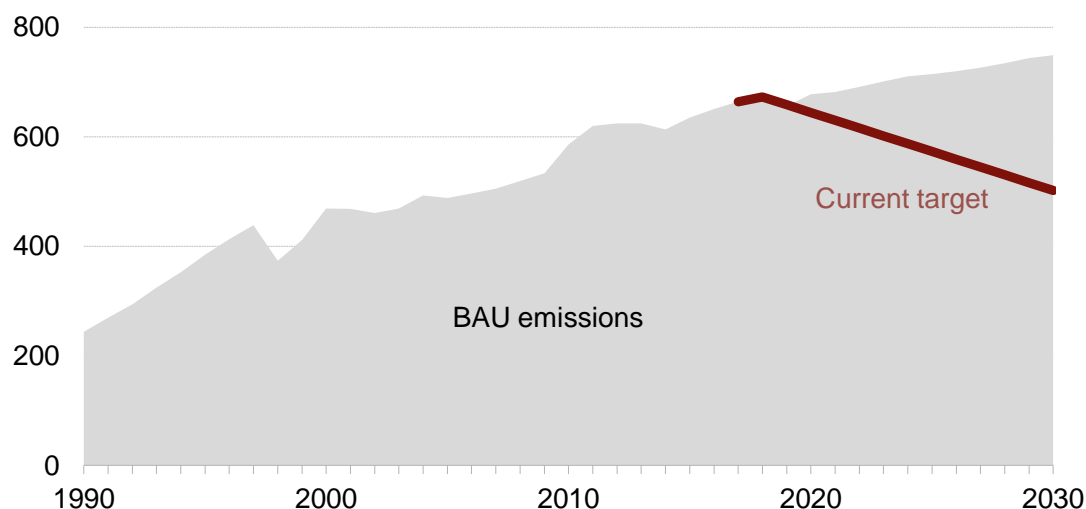
South Korea

In its updated NDC, South Korea has changed its emission target type from a previous goal based on a BAU scenario. It now uses a base-year target – seeking to get to 24.4% below 2017 levels by 2030 – with a peak of 709.1MtCO₂e. Neither would be sufficient to achieve the goals of the Paris Agreement, nor would they put South Korea on a path to achieve its net-zero target. This pledge is midway through the legislative process but it is not clear whether legally binding measures to implement the goal will be forthcoming.

The government has made a start: it doubled the renewables mandate in February ([web](#) | [terminal](#)), it offers generous subsidies for EVs and charging infrastructure, and its fine-dust pollution reduction regulations are helping to reduce coal-power generation. But to reach net zero, Korea would have to restart its long-dormant energy market reforms and revamp the existing emission-trading scheme, which currently offers significant free allocation of permits. The government will also need buy-in from state-affiliated energy companies and family-led conglomerates known as ‘Chaebols’. Read more: [web](#) | [terminal](#).

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	13th
Share of global emissions	1.4%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✓
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-24.4% (on 2017)
Conditional target level	✗
Change in absolute emissions (2010-30)	-15%
Change in emission intensity of GDP (2010-30)	-43%
Emissions per capita (2030)	9.7t
Required abatement (2018-30)	-33%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2020
2050 emission target	Carbon neutrality
Net-zero target	Legislative process

Turkey

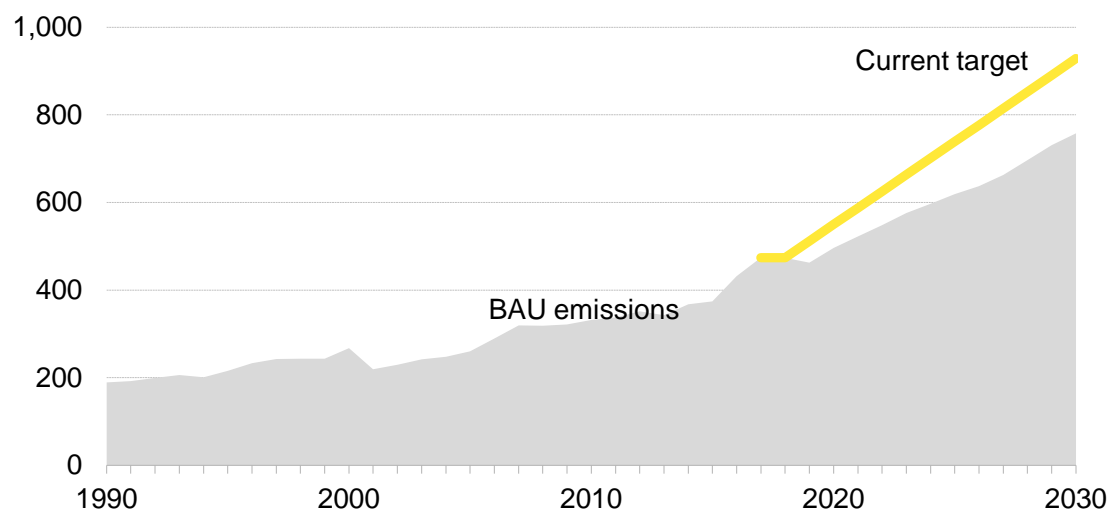
The Turkish government has yet to submit an NDC, so the analysis in this note used its 'Intended Nationally Determined Contribution'. (The INDCs were parties' climate plans submitted to the UN before the Paris Agreement came into force. Thereafter these plans were known as 'NDCs'.) The country signed the Paris treaty in 2016 but is the only G-20 member yet to ratify the deal. One barrier is its inclusion in the list of developed nations required to provide financial and other support to emerging economies. (Turkey was an Annex I party under the Kyoto Protocol.)

If it maintains recent trend, Turkey will see energy and emission intensity climb 11% and 9%. With its economy poised to grow 28% over 2018-30, according to the IMF, BAU emissions reach just under 760 million metric tons by 2030. However, Turkey's target is based on the government's 2030 estimate of 1,175 million, partly due to more optimistic economic growth prospects.

As a result, even if it achieves a 21% reduction on the government's 2030 total, it could still have room for higher emissions based on our BAU estimates, as shown in the figure below.

Emissions based on BAU projection and INDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	17th
Share of global emissions	1.0%

Near-term ambition

2020 NDC status	✗ INDC only
More ambitious emission target?	✗
Target deadline	2030
Type	Baseline scenario
Unconditional target level (base year)	-21%
Conditional target level	✗
Change in absolute emissions (2010-30)	+180%
Change in emission intensity of GDP (2010-30)	+151%
Emissions per capita (2030)	10.7t
Required abatement (2018-30)	+22%

Long-term ambition

Long-term climate plan sent to the UN?	✗
2050 emission target	✗
Net-zero target	✗

U.K.

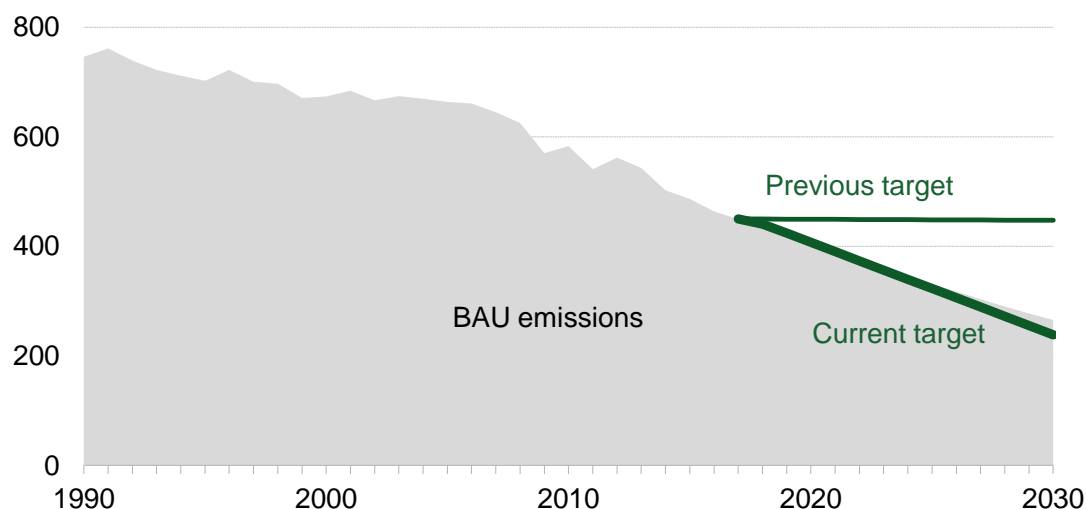
The U.K. just pips the EU-27 to the post for the ambition of its 2030 emission target, which is deemed to be in line with a 1.5-degree scenario according to three of the four metrics in this note. Its latest NDC commits the U.K. to a 68% cut on 1990 levels – from the EU’s previous 40% goal. The new target is also in line with recommendations from the independent Commission on Climate Change, although the government has yet to explain how it intends to realize its NDC pledge and legislated net-zero target for 2050.

The country has one of the strongest zero-carbon policy mixes in the G-20, having been a leader on fossil-fuel phase-out, offshore wind deployment and carbon pricing. But it lacks concrete incentives to promote low-carbon fuels and CCUS except for isolated funding competitions.

In particular, it has yet to introduce comprehensive and consistent support to promote energy-efficiency savings and cleaner fuels for buildings, which account for a sizeable share of emissions and energy use.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	18th
Share of global emissions	0.9%

Near-term ambition

2020 NDC status	✓ Updated NDC
More ambitious emission target?	✓
Target deadline	2030
Type	Base year
Unconditional target level (base year)	-68% (on 1990)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-59%
Change in emission intensity of GDP (2010-30)	-64%
Emissions per capita (2030)	3.5t
Required abatement (2018-30)	-10%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2018
2050 emission target	-80% (on 1990)
Net-zero target	✓ Legislated

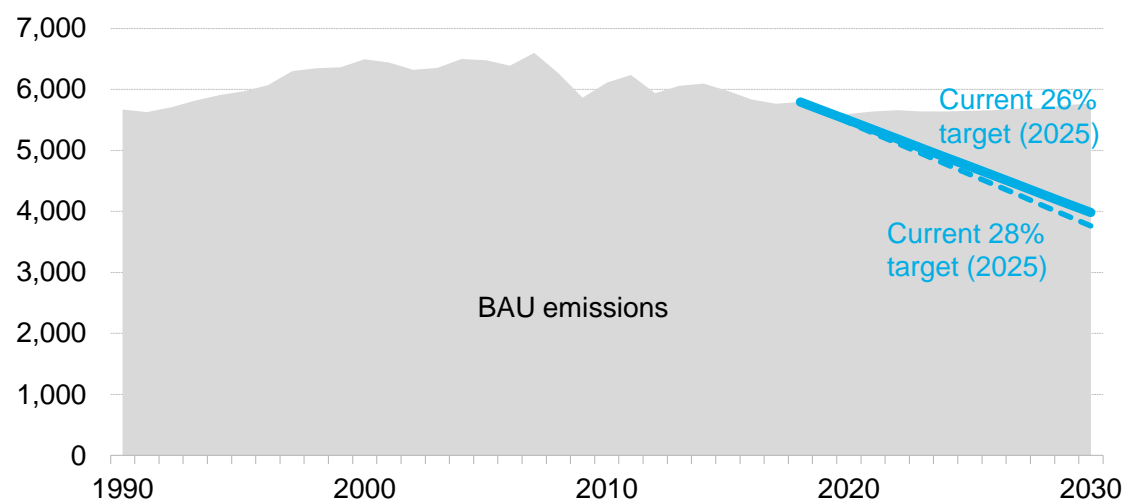
U.S.

President Biden is due to announce a new 2030 target by the Earth Day summit April 22-23. As discussed on [slide 19](#), the toughest pledge reportedly under debate – 53% by 2030 – would close the gap between the U.S. and its European trading partners. One of Biden’s first moves on taking office was to re-join the Paris Agreement. Because the COP process relies on peer pressure, it had been seriously weakened by the absence of the world’s second-largest emitter.

Now that the U.S. has returned to the Paris fold, it aims to rebuild its credibility. Biden’s pre-election climate plan mentioned a net-zero target for 2050 but his administration has not exactly attempted to enshrine that into law. To make good on any such pledge, U.S. federal and state-level governments would need to ramp policy support substantially. Relative to other members of the G-20, the U.S. has some of the strongest support for low-carbon fuels and CCUS. But it offers little to promote decarbonization of other sectors, notably industry and buildings. Even its current emission pledge for 2025 will be hard to meet.

Emissions based on BAU projection and NDC target

million metric tons of CO₂-equivalent



Source: WRI CAIT, UNFCCC, BloombergNEF

Legend for table ■ In line with 1.5°C ■ In line with 2°C ■ Slightly ambitious ■ Unambitious

Current status (2018)

Ranking for global emissions	2nd
Share of global emissions	11.8%

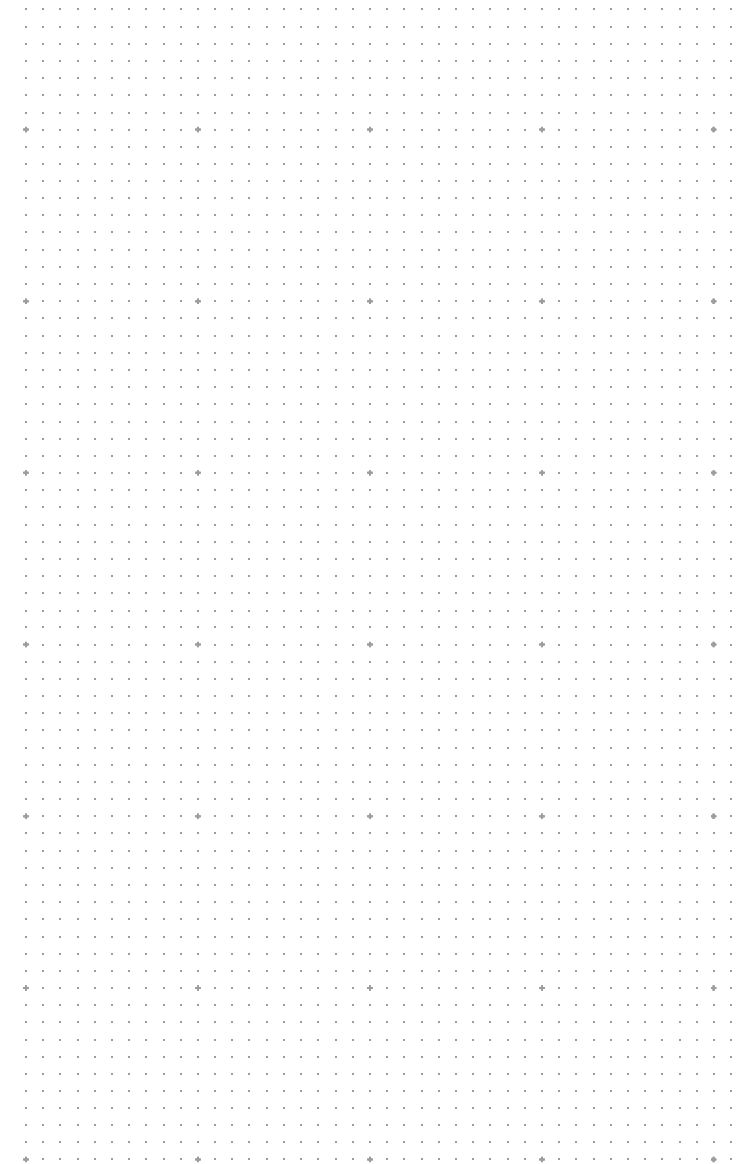
Near-term ambition

2020 NDC status	✗
More ambitious emission target?	✗
Target deadline	2025
Type	Base year
Unconditional target level (base year)	-26-28% (on 2005)
Conditional target level	n/a
Change in absolute emissions (2010-30)	-34%
Change in emission intensity of GDP (2010-30)	-54%
Emissions per capita (2030)	11.7t
Required abatement (2018-30)	-31%

Long-term ambition

Long-term climate plan sent to the UN?	✓ Submitted 2016
2050 emission target	-80% (on 2005)
Net-zero target	✗ State level only

Appendix

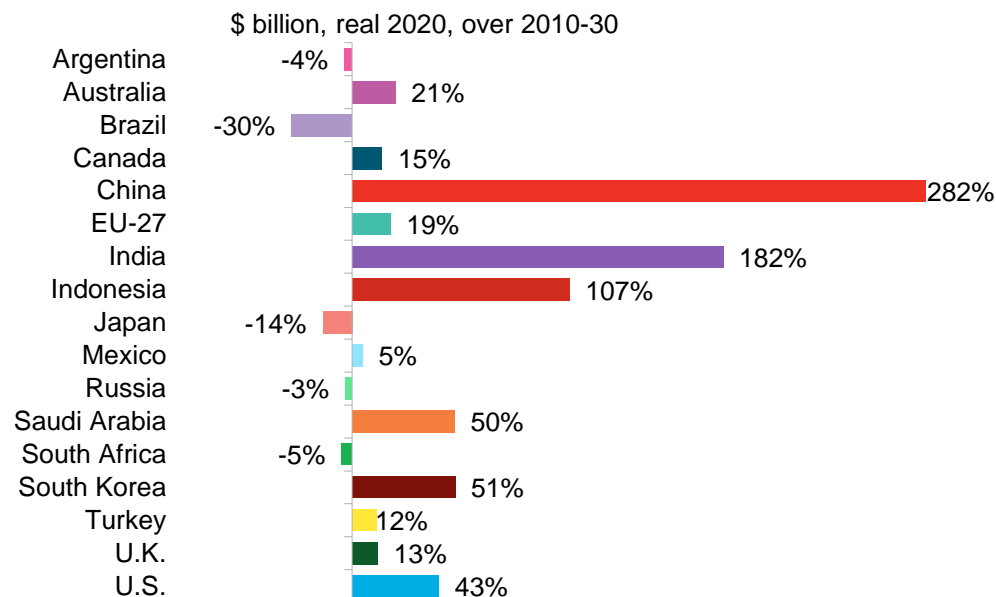


Assumptions

Unless stated otherwise:

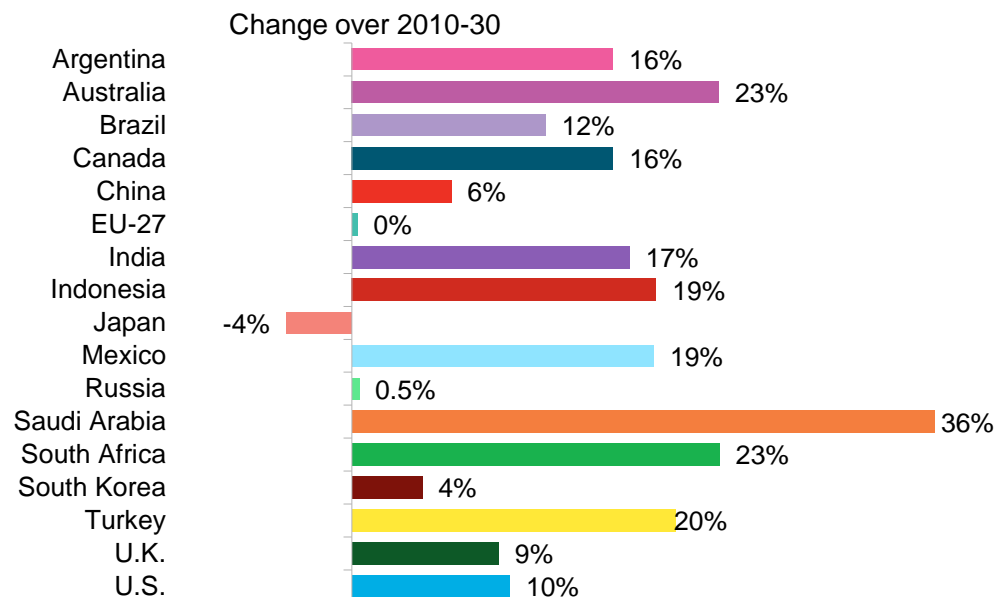
- Emission data are for all greenhouse gases, including land use, land-use change and forestry.
- Our analysis was based on unconditional NDC targets.
- We used the latest government target for 2030 – whether a party's INDC, first or updated, or second NDC, and regardless of whether the party had a target for before 2030.
- For parties only with targets for 2025 – notably the U.S. – we assumed that it maintained out to 2030 a consistent level of ambition and thus emission reduction.
- Some countries – notably China – has a carbon-intensity target only. In such cases, we assumed that the target applied to all greenhouse-gas.
- In the case of Saudi Arabia, its NDC did not include a quantitative emission target. Instead, we extrapolated emissions out to 2030 assuming that current trends continue.
- The figures below show our assumptions for GDP (from the IMF) and population (from the World Bank).

GDP projections



Source: International Monetary Fund

Population projections



Source: World Bank

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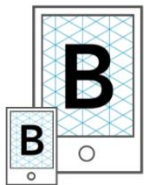
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