

The Climate Action Tracker Guide to a good 2035 climate target

June 2024



Summary

For a second year in a row, the world continues to break temperature records as greenhouse gas emissions rise, leading to more extreme heat and flooding events that are taking lives and displacing many around the globe. Governments are expected to submit their climate targets - or new Nationally Determined Contributions (NDCs) - by early 2025, with targets for 2035.

However, the Climate Action Tracker (CAT) analyses have continued to show that both individual country and collective mitigation ambition for 2030 targets is not in line with the level of action needed to limit warming to 1.5°C. Of even more concern: governments are not implementing enough policies and actions to meet even those insufficient targets.

From November this year, national governments need to submit 1.5°C aligned 2035 NDC targets **but for the world to meet the Paris Agreement's 1.5°C temperature goal, they need to move to emergency mode and strengthen the ambition of their 2030 NDC targets and current policy action.** Targets and action for 2030 needs to align with the pathway to net CO₂ zero emissions by 2050 globally, which should also then define the NDC targets for 2035.

A failure to substantially increasing the ambition of current 2030 targets and action would mean limiting peak global warming to 1.5°C will not be possible and would likely lead to a multi-decadal, high overshoot of this limit, even if followed by strong 2035 targets.

In this briefing, the CAT highlights four key elements for what is needed from the next round of NDCs for 2035: they need to be ambitious, fair, credible, transparent, and include aspects of climate finance and a just and fair transition.





ELEMENT ONE

Ambition

Governments need to switch to emergency mode and revise both their 2030 targets and current policies to include substantial emissions cuts and significantly contribute to closing the 2030 emission gap if the world is to have a significant chance of limiting warming to 1.5°C.

Governments should propose ambitious 2035 NDC targets aligned with a 1.5°C compatible net-zero pathway by early 2025 so that COP30 in Brazil can fully evaluate progress towards 1.5° alignment.

Ambitious country-wide NDC targets need to be built on sectoral targets and plans, informed by 1.5°C compatible benchmarks and contribute to the global sectoral targets from the Global Stocktake.



ELEMENT TWO

Finance & fairness

Developed countries need to significantly scale up international climate finance and other means of support.

Developed countries should set 1.5°C aligned domestic mitigation targets in their NDCs and communicate the financial and other support they will provide to developing countries.

Developing countries should clearly communicate the climate finance they need to set and achieve ambitious 1.5°C aligned conditional targets.



ELEMENT THREE

Credibility

Credible NDCs should build on robust national planning processes that translate the economy-wide emissions reduction target into action in all sectors.

Governments need to ramp up implementation of their existing targets and further develop policies to close the – still significant – emissions gap between current policies and 1.5°C compatible pathways.

Contradictory policies must be addressed and reversed: fossil fuel production needs to phase out, while fossil fuel exploration and fossil fuel subsidies need to stop.



ELEMENT FOUR

Transparency

Governments should set absolute, economy wide, emission reduction target trajectories including all GHG gases, specifying the emissions levels for each year as X MtCO₂e (excluding LULUCF) so they are clear, transparent, and immune to creative accounting.

NDC targets should primarily focus on their domestic reductions by decarbonising all sectors of the economy rather than relying on forestry sinks, other carbon dioxide removal (CDR) or carbon markets.

Governments should clearly and transparently communicate the following elements (additional to their domestic target):

- ▶ The domestic contribution of forestry and land use
- ▶ The expected contribution of other CDR by type
- ▶ Their intent and expected contribution to use Article 6



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1 Introduction

While governments agreed nearly a decade ago to limit warming to 1.5°C, we are nowhere near achieving this goal, nor are we aligned with a path to reach net-zero greenhouse gas emissions globally in the second half of the century. [We estimate](#) that the current 2030 climate targets will lead to a temperature increase of 2.5°C, while current policies and action are higher, projected to warm the world by 2.7°C by the end of the century (Figure 1).

As we keep delaying significant emission cuts, limiting global warming to 1.5°C becomes ever more challenging. Even our most optimistic scenario, accounting for all net zero targets, falls short of the 1.5°C limit. To keep the 1.5°C limit within reach, global emissions need to [peak before 2025](#), be halved by 2030 (from 2019 levels), and continue on a steep downward trend thereafter reaching net-zero CO₂ emissions by around mid-century and net zero GHG emissions afterwards.

But even if all current NDCs are fully implemented, global emissions will still be twice as high in 2030 than needed for the 1.5°C limit. If this does not change, global average temperature will be above 1.5°C by the early 2030s and 2°C a decade later.

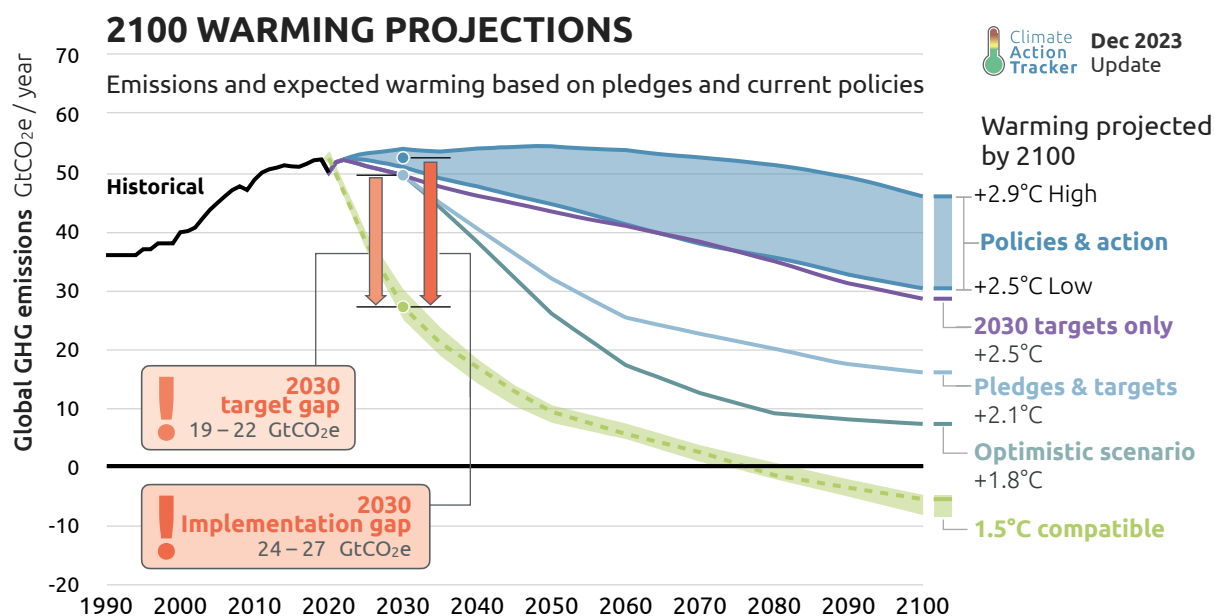


Figure 1 2100 global warming projections under different scenarios and the 2030 emissions gap between NDC targets ('target gap') and policies and action ('implementation gap') and levels consistent with 1.5°C

According to the Paris Agreement, governments are meant to submit their updated NDCs, including 2035 climate targets, by early 2025. These NDC updates must represent a progression beyond the previous one and reflect highest possible ambition.

In this briefing, the CAT provides guidance on the four key elements that governments should consider when developing their new NDCs, starting with substantially strengthening their 2030 targets and current policy action. Only by shifting to emergency mode, peaking global emissions before 2025 and considerably cutting emissions by 2030, will there be a chance for 1.5°C aligned 2035 targets. Existing 2030 emission targets remain inadequate and do not match the severity of the climate emergency, and 2035 targets need to bend the emissions curve significantly towards net-zero.

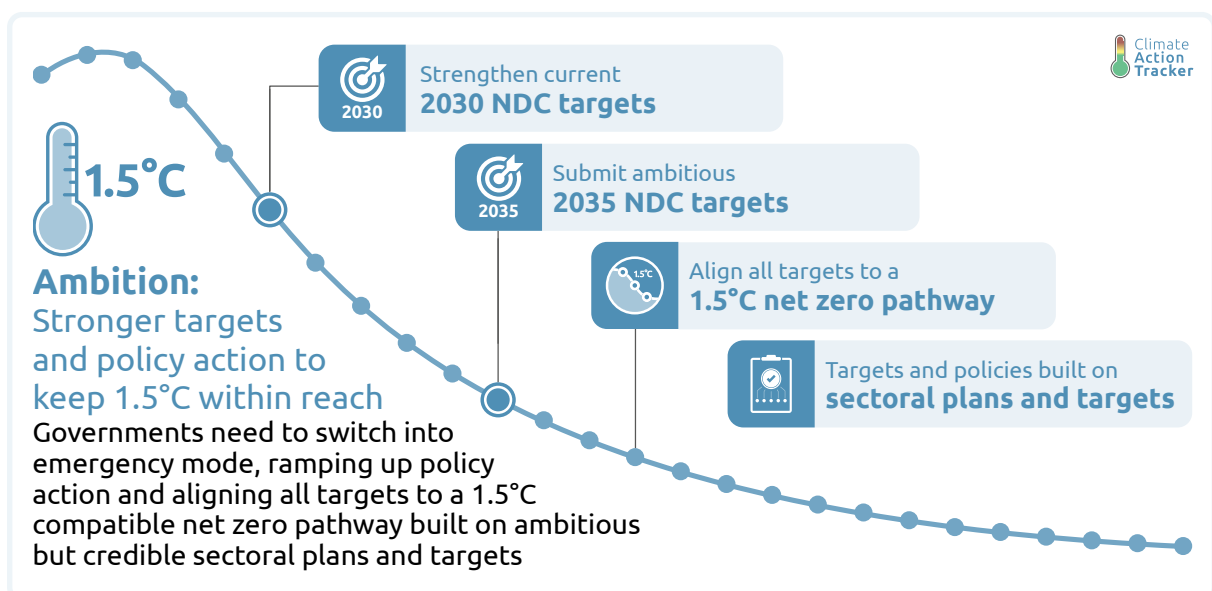
We find that a fair and equitable transition is a prerequisite to ensure targets are *prepared, submitted and implemented*, and put the needs and capabilities of those affected at their centre. Only through a people-centred process can we close both ambition and implementation gaps.

1.5°C ELEMENT ONE Ambition

Governments need to switch to emergency mode and revise both their 2030 targets and current policies to include substantial emissions cuts and significantly contribute to closing the 2030 emission gap if the world is to have a significant chance of limiting warming to 1.5°C.

Governments should propose ambitious 2035 NDC targets aligned with a 1.5°C compatible net-zero pathway by early 2025 so that COP30 in Brazil can fully evaluate progress towards 1.5° alignment.

Ambitious country-wide NDC targets need to be built on sectoral targets and plans, informed by 1.5°C compatible benchmarks and contribute to the global sectoral targets from the Global Stocktake.



Strengthening 2030 action and targets is key to keeping 1.5°C alive

The Paris Agreement calls for governments to periodically revisit and strengthen their NDC targets. However, the CAT has observed governments repeatedly failing to set 2030 targets (and current policies) in line with the level of action needed to limit warming to 1.5°C.

Our estimate of the warming impact of 2030 targets has worsened by 0.1°C to 2.5°C in the last two years, despite the promises governments made in 2021 at COP26 in Glasgow to 'revisit and strengthen' their 2030 targets.

Governments need to align their 2030 NDC targets as a matter of urgency. Postponing action until 2035 is not an option and is not credible; it would be far too late. Without immediate and strengthened 2030 targets and action limiting peak global warming to 1.5°C will not be possible and would likely lead to a multi-decadal, high overshoot of this limit, even if followed by strong 2035 targets and significant carbon dioxide removal.

Delaying action now (i.e. not strengthening 2030 targets) risks escalating costs of action in 2035 and beyond, and will lead to global average temperatures above 1.5°C as of the early 2030s for several decades, at the least.

Current 2030 targets are woefully inadequate. While global GHG emissions continue to rise, driven largely by fossil fuels, governments persistently fall short in setting climate targets and implementing policies that match the severity of the climate emergency. To achieve the necessary strengthening of 2030 targets, governments must shift to emergency mode.

Align 2035 targets to a 1.5°C net-zero pathway

The next round of NDCs and their 2035 targets need to be truly ambitious and 1.5°C-compatible. But what does a 1.5°C compatible target look like? While the actual target and type of action each country will take will differ based on their own national circumstances, we know that, on a global scale, emissions need to [peak before 2025](#), be halved by 2030 (compared to 2019), and continue on a steep downward trend thereafter reaching net-zero CO₂ by around mid-century.

The CAT gives an indication of what these targets should look like, if governments were truly committed to meet the Paris Agreement temperature limit. We use [modelled domestic pathways](#) (MDPs) as one of two frameworks to assess whether targets and policies are on track towards full decarbonisation – in line with the 1.5°C warming limit. These MDPs aim at providing *feasible*, real world *reduction pathways* for each country. We use IPCC AR6 cost-effective modelled emission pathways that in general apply least cost abatement options within regionally differentiated circumstances and assumptions. This perspective focusses on emissions reduction only and, in general, not on who should pay for the reductions, an issue which is covered in the following section.

According to our methodology, all developed countries should at least be achieving their 1.5°C modelled domestic pathway within their own borders and using their own resources. Some developed countries also intend to meet their NDC targets through international cooperation, including through Article 6 mechanisms.

The Paris Agreement foresees ambitious mitigation efforts in all countries in line with the 1.5°C limit, progressively increasing these efforts over time. This means there is a very narrow scope, if at all, for countries to sell or transfer emissions reductions they may have achieved.

If any emission credits under Article 6 are used to meet own targets, they should represent *additional emissions reductions*, beyond 1.5°C aligned domestic action, a criterion that currently no developed country complies with (see also [Transparency section](#)).

Most developing countries will need financial support to cut emissions beyond what is required by our [effort-sharing](#) framework. For this, governments should set ambitious conditional NDC targets coupled with plans detailing climate finance needed to meet them. These conditional targets could be aligned with their 1.5°C modelled domestic pathway.

Sectoral benchmarks can help determine and set truly ambitious targets and contribute to the global goals

Our [State of Climate Action](#), which translates and tracks the 1.5°C temperature goal into quantitative, timebound targets at the sectoral level, finds all but one indicator are lagging behind what is needed. While translating global goals into national circumstances at the sectoral level needs a tailored approach, five mitigation actions are clear:

1. At the global level [fossil fuel production](#) needs to fall by at least 40% by 2030 (from 2022 levels) while fossil fuel exploration and fossil fuel subsidies need to stop.
2. [Wind and solar](#) need to accelerate their ramp up globally in the power sector.
3. Transport, [buildings](#), and industry need electrification and higher energy efficiency and sufficiency.
4. [Methane emissions](#) from fossil fuels, agriculture and waste should be reduced, with energy related methane emissions falling by 66% by 2030 (from 2020 levels) and total methane from all sources fall by 34% by 2030.
5. [Annual deforestation rates](#) and associated GHG emissions should decline by 70% by 2030 (from 2018 levels) and land sinks should be protected and sustainably expanded.

Ambitious, country-wide NDC targets need to be built on sectoral targets and plans, informed by [1.5°C compatible benchmarks](#). To this end, the Climate Action Tracker and its collaborators in the [Systems Change Lab](#) prepared a comprehensive list of 1.5°C aligned specific global sectoral benchmarks for power, buildings, industry, transport, forests and land, and food and agriculture for 2030, 2035 and 2050. See Annex 1 – [1.5°C aligned sectoral benchmarks](#).

Having sectoral targets and plans as a basis for NDCs can also help countries be accountable on their contribution to the global sectoral goals. The [first global stocktake](#) sets a list of global sectoral goals for 2030 including tripling renewable energy capacity, doubling the rate of energy efficiency, transitioning away from fossil fuels in energy systems this decade to achieve net zero by 2050, and reducing methane emissions, among others.

A country's contribution towards these goals should be tailored to their particular circumstances and informed by current status, future needs and the [technical potential](#). For example, tripling renewable energy capacity globally by 2030 (starting at 2022 levels) [translates](#) to uptake rates that vary per region.

Projections show that Asia and OECD countries should lead with the largest and second-largest contribution to capacity additions at a rate slightly higher than the global average (3.6x and 3.1x, respectively), while sub-Saharan Africa requires a faster ramp-up (with a rate of 6.6x) due to lower levels of existing renewable capacity and high energy demand growth. For this, significantly upscaled international climate finance and other means of support are needed.



ELEMENT TWO

Finance & fairness

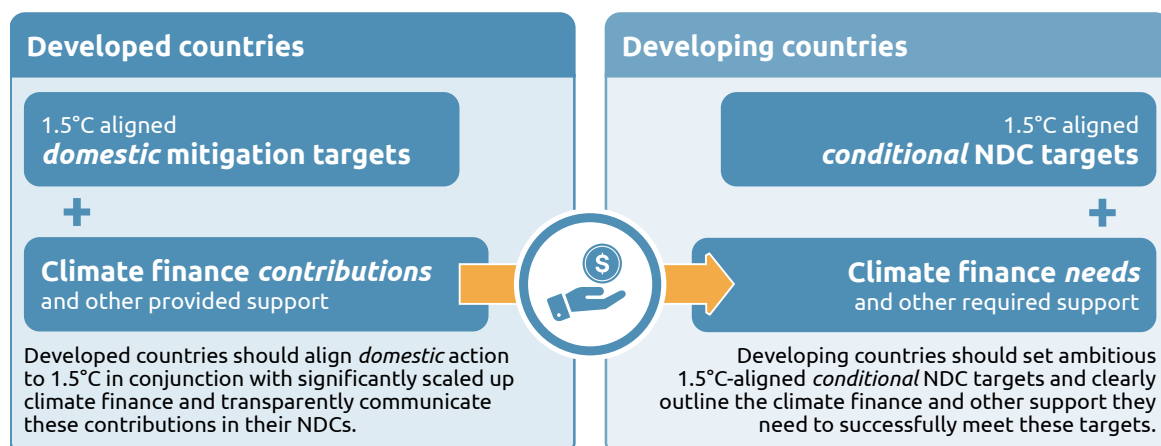
Developed countries need to significantly scale up international climate finance and other means of support.

Developed countries should set 1.5°C aligned domestic mitigation targets in their NDCs and communicate the financial and other support they will provide to developing countries.

Developing countries should clearly communicate the climate finance they need to set and achieve ambitious 1.5°C aligned conditional targets.

Finance & fairness: Embedding international support into NDCs

Governments must significantly scale-up climate finance, with donors clearly communicating contributions and recipients outlining their needs to meet ambitious conditional targets



International climate finance and support need to significantly scale up

Providing and mobilising climate finance is essential to support global mitigation ambition, as many developing countries will need significant levels of financial support to achieve 1.5°C compatible climate targets. However, existing climate finance – including that provided and mobilised by governments through public funding, multilateral development banks and the private sector – is nowhere near sufficient to support the level of action needed in developing countries.

The [OECD recently reported](#) that in 2022, developed countries provided and mobilised USD 115.9 billion in climate finance for developing countries, for the first time exceeding the annual USD 100 billion goal. Despite these being positive developments, we know the USD 100bn target does not reflect developing countries' needs.

Developed country governments need to urgently increase the amount of climate finance they have pledged and mobilised, to support a fair and equitable transition to a Paris-compatible world.

Beyond public finance, there is also a need to redirect private sector finance so the full scale of resources available for investments in mitigation matches the climate needs, estimated in trillions per year. To date, the redirection of private sector finance remains inadequate, and the mobilisation of multilateral development bank support is also insufficient to provide backing for developing countries to make the required investment and provide an enabling environment for the private sector to cover the lion's share of investments needed for the energy transition.

Developed countries should communicate their domestic mitigation target as well as what financial support they will provide

According to our methodology, developed countries should set NDC targets that are at least compatible with their 1.5°C [modelled domestic pathways](#) and should meet these targets within their own borders and using their own resources. Additionally, developed countries are expected to *complement their ambitious domestic mitigation efforts with significant financial support for mitigation in other countries.*

However, when analysing the transparency and adequacy of the support provided until now, we find that no country is providing and/or mobilising sufficient climate finance. In addition to communicating the financial support they will provide, developed countries should communicate the instruments through which they plan to do this (e.g. loans, grants, guarantees, etc.)

Developing countries should communicate their climate finance needs for ambitious conditional targets

Just like developed countries, developing countries have committed to take climate action seriously and to set ambitious targets to reduce emissions as quickly as possible in order to limit global average temperature increase to 1.5°C.

This would enable them to transition to sustainable development pathways, building on the opportunities that the interdependency between the development and climate agenda create, essentially maximising co-benefits and achieving greater policy coherence. However, following the “common but differentiated responsibilities and respective capabilities” principle, the types of action countries will take will depend on their differing national circumstances and needs. Climate finance and other means of support are key enablers for achieving both sustainable development and the global climate goals.

Most developing countries will need financial support to mitigate emissions beyond what would be their fair share according to [effort-sharing frameworks](#). Therefore, these governments are encouraged to put forward an ambitious conditional target that is in line with their 1.5°C modelled domestic pathway, and to quantify climate finance needed, including an implementation plan, to meet the set target.

Developed countries should support emissions reduction actions that are additional to what developing countries can achieve unilaterally. In some countries, these measures will represent most emissions reductions. In others, additional emissions reductions will be more challenging and require more expensive emission reduction strategies.



ELEMENT THREE

Credibility

Credible NDCs should build on robust national planning processes that translate the economy-wide emissions reduction target into action in all sectors.

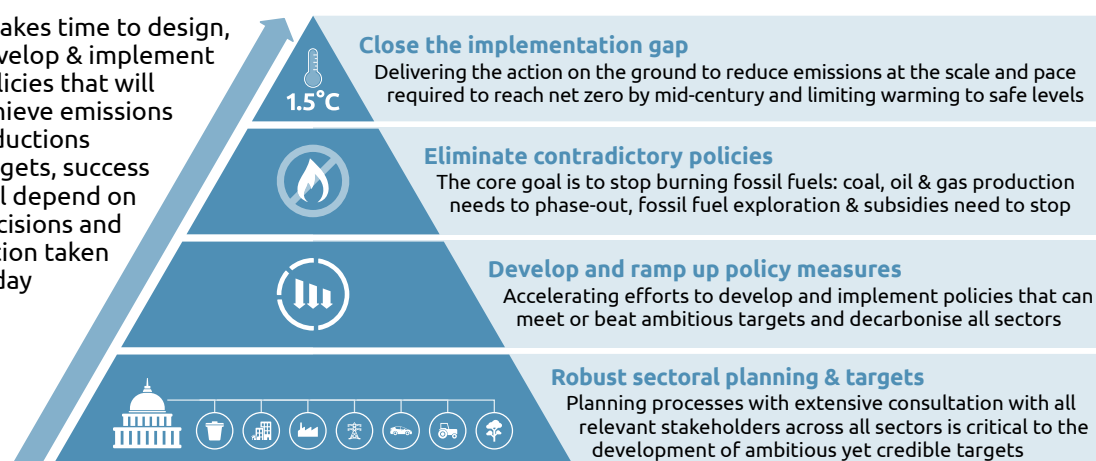
Governments need to ramp up implementation of their existing targets and further develop policies to close the – still significant – emissions gap between current policies and 1.5°C compatible pathways.

Contradictory policies must be addressed and reversed: fossil fuel production needs to phase out, while fossil fuel exploration and fossil fuel subsidies need to stop.

Credibility: Building targets, policies and action on top of detailed, sector-based national planning processes



It takes time to design, develop & implement policies that will achieve emissions reductions targets, success will depend on decisions and action taken today



Governance and national processes

Policy development and implementation takes time. Whether governments are able to achieve (or beat) 1.5°C aligned 2030 and 2035 targets will depend on decisions and actions taken today.

Key enabling factors for [climate governance](#) include a government's political commitment to decarbonisation (i.e. 2030, 2035 and subsequent targets towards net zero and beyond); the institutional framework in place to achieve its emission reduction target; the process established to develop, implement and review mitigation policies, and its ability and willingness to engage with relevant stakeholders in policy development.

The NDC development and implementation processes should build on extensive coordination efforts and wider stakeholder engagement at the different levels of government, from local, to regional to the national.

Credible NDCs could reference national planning processes (such as public consultations, sector-level analyses, and modelling exercises) carried out for the development of the NDC, as well as the institutional framework it has put in place or plans for its implementation (linking to sectoral plans, investment needs, and policy development).

Close the implementation gap

The current [state of climate action](#) is not encouraging. Most of the transformations needed to meet the Paris Agreement 1.5°C goal is not occurring at the required pace and scale. Even where policies and actions are generally heading in the right direction, getting on track for what is needed by 2030 will require an enormous acceleration in effort.

Along the same lines, our own [emissions projections](#) highlight a substantial gap between the levels of emissions (excl. LULUCF) in 2030 based on the submitted NDCs and the current levels of government action to achieve those NDCs. An even larger gap exists between the emissions level of the NDCs and a 1.5°C-compatible pathway (Figure 2). Currently submitted NDCs are far from being ambitious enough, and the gap further increases as governments fail to implement policies to drive action to meet even those unambitious targets.

As a consequence, [temperatures](#) will continue to rise into the next century. Policies and actions currently being implemented by governments will lead to end of century warming of 2.7°C, an estimate unchanged since 2021 (Figure 1). This remains 0.2°C higher than the end of century temperature if NDCs were fully implemented and their targets achieved (currently estimated at 2.5°C, which is a 0.1°C degradation from the estimates made in 2021). The absence of meaningful government action is unacceptable and is leading to devastating real-life consequences.

It is notable that we are seeing a flattening of improvement in government targets and actions since 2021 despite the probable increase in rhetoric from governments and political leaders.

Although late, some governments are showing positive signs of action and increasing ambition in their policies. Policy projections for [China](#), the [US](#), and the [EU](#) could actually lead to noticeable drops in emissions for 2035, if they were to successfully implement their respective policies. However, these positive developments are quickly counterbalanced with projected increases in emissions in other countries like [Indonesia](#), [Saudi Arabia](#), [UAE](#), and the [UK](#).

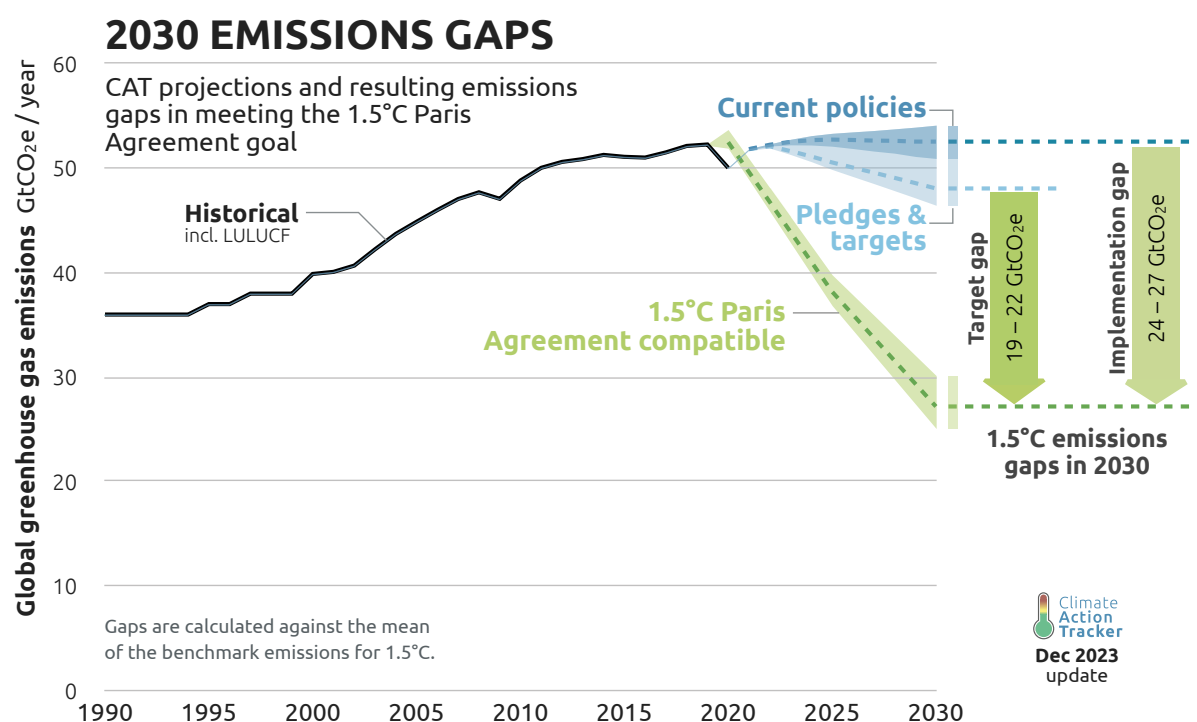


Figure 2 Global 2030 emissions gap between NDC targets ('target gap') and policies and action ('implementation gap') and levels consistent with 1.5°C

Contradictory policies must be addressed and reversed: Fossil fuel production needs to phase out; fossil fuel exploration and subsidies need to stop

Burning fossil fuels is the main cause of climate change, therefore we can only meet the Paris Agreement goals if **fossil fuel production is immediately minimised and eventually stopped**. Basically, any expansion of fossil fuel production at this stage represents either a huge risk for stranded assets and a slowdown of the energy transition - or emissions continuing to rise along with the resultant warming.

At the same time, fossil fuel subsidies distort the costs and prices that influence the decisions of producers, investors, and consumers, sustaining carbon-intensive production and consumption patterns and resulting in rising emissions over time ([IISD and OECD](#)).

Last year's COP 28 marked the conclusion of the first 'global stocktake' of the world's efforts to address climate change under the Paris Agreement. Unsurprisingly, the outcome was that progress had been too slow, across all areas of climate action. As a result, the UNFCCC called on governments –once again– to speed up action by “accelerating efforts towards the phase-down of unabated coal power, phasing out inefficient fossil fuel subsidies, and through other measures that drive the transition away from fossil fuels in energy systems” ([UNFCCC, 2023](#)).

While some refer to COP28 as the “beginning of the end” of the fossil fuel era, a lot more was expected –and needed– in terms of calling for a full, fast and fair fossil fuel phase-out. And given the scaling up of fossil fuel resource development, particularly fossil gas and LNG, the evidence does not yet support the “beginning of the end” of the fossil fuel era, at least from the supply side.

To peak global emissions before 2025 – and thus keep the 1.5°C limit within reach, fossil fuel subsidies and further exploration and development plans need to be axed, while fossil fuel production should fall around 40% until 2030. Governments should move away from policies supporting further use of fossil fuels and align their development plans and investments with a net zero pathway, especially as all uses of fossil fuels today have an alternative that does not involve increased emissions (e.g. wind and solar with storage, electrification of transport, or heat pumps, as described in [our COP28 briefing](#)).

Similarly, government money currently subsidising fossil fuels exacerbates local pollution, strains public finances, and hinders global efforts to reduce emissions. These same funds could instead be allocated to support education, green skills development, renewable energy infrastructure, and other initiatives that support a just and fair transition away from fossil fuels (IISD and OECD).

✓ GOOD

- ▶ [Costa Rica](#) reformed its Executive Decree No. 41578 in 2019 to extend the national moratorium on oil exploration and exploitation until the end of 2050. In 2021, the government further proposed that the moratorium be enshrined in law to protect it from reversal by future administrations.
- ▶ [Colombia](#), the 16th largest fossil fuel explorer in 2022, announced in 2023 that it will not approve any new oil and gas exploration projects, shifting away from fossil fuels and toward a new sustainable economy.

✗ BAD

- ▶ In [the EU](#), planned LNG capacity is larger than needed, while financing gas abroad is still under discussion in member states, undermining the region's climate commitments and delaying the global transition to green energy by continuing to create demand for gas.
- ▶ [Brazil](#), the 17th largest fossil fuel exporter in 2022, continues to invest in fossil fuel production and has earmarked a significant share of its budget for “energy transition and security” for the oil and gas industries, mainly for the production and development of these fossil fuels.

✗ UGLY

- ▶ [Australia](#), the third largest fossil fuel exporter in 2022, [continues to support](#) the expansion of the coal and gas industry and has no coal or fossil gas power phase-out plans. Coal is the dominant source in Australia's electricity generation mix, representing 49% of generation in 2022. Australia is planning in coal exports decreasing only slightly towards 2035 and with its new “Future Gas Strategy” is actively promoting an expansion of LNG exports.
- ▶ [Norway](#), the seventh largest fossil fuel exporter in 2022, has no plans to phase out of the fossil fuel industry and rather anticipates oil production to increase and fossil gas output to continue at near record high levels.
- ▶ The [UAE](#), the tenth largest fossil fuel exporter in 2022, and whilst the government committed to invest USD 55bn in renewables last year, but continued to increase fossil fuel production and consumption in parallel, with a USD 150 bn investment plan into oil and gas expansion. Last year, as the UAE hosted COP28, its [national oil company sought oil, gas and petrochemical deals](#) potentially worth close to \$100 billion, a sum five times higher than the year before.
- ▶ In Azerbaijan, the 23rd largest fossil fuel exporter in 2022, oil, gas, and related petroleum products account for over 90% of the country's exports. Although the government [recently announced plans](#) to significantly increase the share of renewables and, despite the global downtrend in fossil fuel financing, Azerbaijan remains committed to supplying gas to partner countries in the future, in particular to the EU. It is supporting a BP lead giant new oil development, which has just started “[gushing](#)” oil – it might be an “incredibly proud” moment for BP and Azerbaijan but it flies in the face of all scientific evidence.
- ▶ The [UK](#), the 26th largest fossil fuel exporter in 2022, is pressing ahead with the new gas and oil field developments in the North Sea despite strong opposition from the scientific community.



ELEMENT FOUR

Transparency

Governments should set absolute, economy wide, emission reduction target trajectories including all GHG gases, specifying the emissions levels for each year as X MtCO₂e (excluding LULUCF) so they are clear, transparent, and immune to creative accounting.

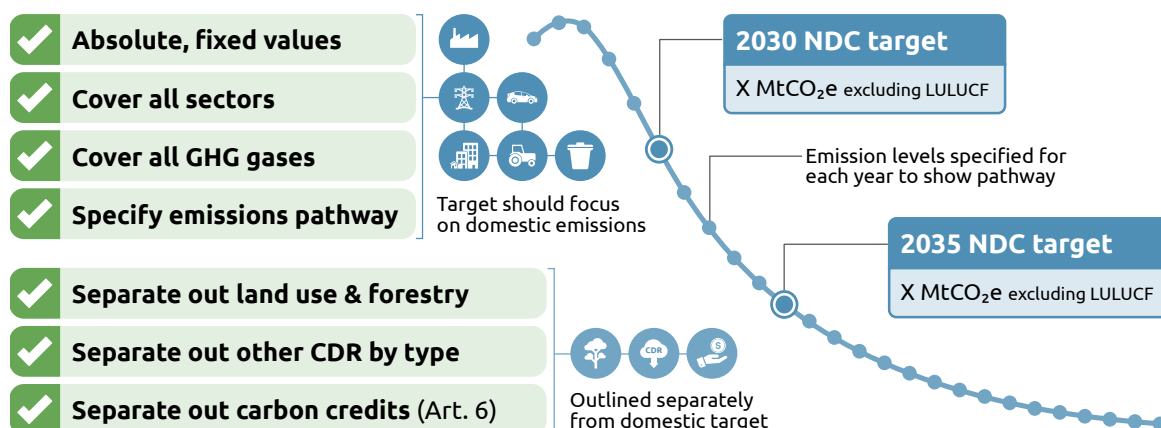
NDC targets should primarily focus on their domestic reductions by decarbonising all sectors of the economy rather than relying on forestry sinks, other carbon dioxide removal (CDR) or carbon markets.

Governments should clearly and transparently communicate the following elements (additional to their domestic target):

- ▶ The domestic contribution of forestry and land use.
- ▶ The expected contribution of other CDR by type.
- ▶ Their intent and expected contribution to use Article 6.

Transparency: How to set clear & unambiguous climate targets

Checklist on how to communicate emissions reductions in NDCs to ensure targets are clear, transparent and immune to creative accounting



Setting absolute, economy-wide, emission reduction trajectory targets

A clear and transparent climate target, immune to creative accounting is one that focuses on domestic emissions reductions in the whole economy for all greenhouse gases, clearly separating the forestry sector and excluding other CDR methods and carbon markets.

Any contribution of the land use, land-use change and forestry sector (LULUCF), engineered and novel types of carbon dioxide removal (CDR) or carbon markets under Article 6, should be stated separately.

Governments have - and should - continue to include information on the form, scope and coverage of their NDC targets. This includes quantifiable information on the reference point, time frame and/or periods for implementation, scope and coverage of the NDC (e.g. what is the target? Which categories and gases are covered?), and all assumptions and methodological approaches.



Chile: includes two separate targets in its NDC, one for economy-wide emissions and another for the forestry sector. In its economy-wide target it includes an emissions budget building on sectoral budgets, a peak year and the absolute emissions level in 2030.

Prioritising domestic sectoral decarbonisation

Full transformation is needed across all sectors: taking a long-term view means all sectors and all countries need to decarbonise to reach net zero CO₂ emissions globally by 2050. Our recently-published [analysis on the use of CDR](#) in governments' long-term targets points at the risk of an over-reliance on such removals at the expense of delaying rapid and deep cuts in emissions. This would prolong the global use of fossil fuels, and put the 1.5°C warming limit at risk.




The same risks lie with the promise of Carbon Capture and Storage (CCS or CCUS), technologies where current and projected costs are simply too high and project sizes much too small to deliver the removals needed. Equally, rather than supporting rapid decarbonisation in all sectors, CCS prolongs the global use of fossil fuels. A case in point is [Saudi Aramco's plan to reach net zero](#) – through the use of CCUS - without cutting oil production. CCS still produces emissions from fossil fuels, so is not carbon "removal", simply a mitigation action.

Increased transparency on contributions from forestry and land use, other carbon dioxide removal, and Article 6

Three additional elements are key to further increase the transparency of national climate targets:

Clarity on the contribution of forestry and land use

Unlike other sectors, forestry and land use emissions pose unique challenges due to their high variability, measurement complexity, potential reversibility (e.g. forest fires) and high volatility. Additionally, the LULUCF sector constitutes an emissions source in some countries and an emissions sink in others, and this may also vary over time.

-  **Australia** creates an illusion of progress towards its NDC through constantly (and upwardly) recalculating reported and projected LULUCF sinks. These recalculations result in an increase land sink estimate that [allows fossil fuel emissions to continue without compromising the achievement of its net 2030 target](#).
-  **Mexico** defines its NDC as a reduction from BAU, pursuing a "gross-net" approach. It counts only emissions sources in its BAU -ignoring sinks- but intends to use land use and forestry sinks to achieve the NDC target. This has been criticised as intransparent for over 20 years.
-  **New Zealand** also pursues a "gross-net" approach in its accounting methodology. Removing the gross-net accounting, their target translates into real emissions reductions that are less than half of what the government claims.

While stopping deforestation, reforestation and bolstering the land sector can be highly beneficial to the climate and biodiversity, they should not substitute the primary task of phasing out fossil fuels and cutting GHG emissions.

NDC targets that aggregate the land use and forestry sector together with other sectors can allow countries to mask inadequate overall action and essentially allow ongoing or even increased fossil fuel use.

Clarity on the contribution of CDR by type

Over-reliance by governments on carbon dioxide removal to meet their climate targets distracts from the urgent need to make rapid cuts in emissions, prolonging the use of fossil fuels, and puts the 1.5°C temperature limit at risk.

Governments who intend to use them to achieve their climate targets should transparently communicate and differentiate CDR by type in their target-setting and progress reporting. Generally speaking, different types of CDR face different uncertainties and challenges; putting governments' current planning on the pace, scale, and costs of deploying CDR as part of their net zero strategies into question.

Conventional CDR, such as forest sinks in particular, face issues of both permanence and scarcity. Forest fires release stored carbon into the atmosphere, negating its climate benefit and there is limited land available for carbon dioxide removals from forest sinks.

Engineered CDR such as Direct Air Carbon Capture and Storage (DACCS) or Biomass Energy Carbon Capture and Storage (BECCS) face challenges in relation to financial cost, limitations on biomass availability in the case of BECCS, scalability and access to sufficient and appropriate geological storage.

Novel CDR based on sea or land such as biochar and ocean alkalisation face environmental hazards and unwanted side effects, financial and technological viability, and legal issues.

Clarity on the intent to use Article 6

The Paris Agreement foresees ambitious mitigation efforts in all countries in line with the 1.5°C limit, progressively increasing these efforts over time. This means there is a very narrow scope, if at all, for countries to sell or transfer emissions reductions they may have achieved.

It is crucial to recognise that the use of Article 6 cannot serve as a substitute for domestic mitigation efforts, but should, if pursued, be separate. Some governments have signalled their intent to use credits but do not specify to which extent, and this lack of clarity makes it difficult to assess their level of domestic action.

In their NDCs, governments should therefore provide clarity on their intended use of international credits and the scale they intend to rely on them, clearly separating these from both their domestic and overall emissions reduction targets.



Annex 1 – 1.5°C aligned sectoral benchmarks



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Global, Sectoral Targets from the *State of Climate Action* Series

The *State of Climate Action* series translates the Paris Agreement's 1.5 degrees Celsius temperature limit into quantitative, timebound targets across sectors that account for roughly 85% of global greenhouse gas emissions – power, buildings, industry, transport, forests and land and food and agriculture. These reports also establish targets focused on scaling up carbon removal technologies and climate finance, both of which will be needed to mitigate climate change.

This table features targets published in the *State of Climate Action 2023* primarily for 2030 and 2050, with 2035 and 2040 targets included where available. New targets for 2035 are also featured below, which were developed following the same methods described in the report's technical note.

INDICATORS	TARGETS		
	2030	2035	2050
Power			
Share of zero-carbon sources in electricity generation (%) ^a	88–91	96 ^b	99–100
Share of wind and solar in electricity generation (%)	57–78	68–86 ^b	79–96
Share of coal in electricity generation (%)	4	1 ^b	0–1 (2040) 0 (2050)
Share of unabated fossil gas in electricity generation (%)	5–7	2 ^b	0
Carbon intensity of electricity generation (gCO ₂ /kWh)	48–80	15–19 ^b	<0 ^c
Buildings			
Energy intensity of building operations (kWh/m ²)	85–120	<i>Forthcoming</i>	55–80
Carbon intensity of building operations (kgCO ₂ /m ²)	13–16	<i>Forthcoming</i>	0–2
Retrofitting rate of buildings (%/yr)	2.5–3.5	2.5–3.5 ^b	3.5 (2040)
Share of new buildings that are zero-carbon in operation (%)	100	100	100
Industry			
Share of electricity in the industry sector's final energy demand (%)	35–43	43–46 ^b	60–69
Carbon intensity of global cement production (kgCO ₂ /t cement)	360–370	<i>Forthcoming</i>	55–90
Carbon intensity of global steel production (kgCO ₂ /t crude steel)	1,340–1,350	<i>Forthcoming</i>	0–130
Green hydrogen production (Mt)	58	<i>Forthcoming</i>	330
Transport			
Number of kilometers of rapid transit per 1 million inhabitants (km/1M inhabitants)	38	<i>Forthcoming</i>	N/A
Number of kilometers of high-quality bike lanes per 1,000 inhabitants (km/1,000 inhabitants)	2	<i>Forthcoming</i>	N/A
Share of kilometers traveled by passenger cars (% of passenger-km)	35–43	<i>Forthcoming</i>	N/A
Share of electric vehicles in light-duty vehicle sales (%)	75–95	100	100

Share of battery electric vehicles and fuel cell electric vehicles in bus sales (%)	60	<i>Forthcoming</i>	100
Share of battery electric vehicles and fuel cell electric vehicles in medium- and heavy-duty commercial vehicle sales (%)	30	<i>Forthcoming</i>	99
Share of sustainable aviation fuels in global aviation fuel supply (%)	13	<i>Forthcoming</i>	100
Share of zero-emissions fuels in maritime shipping fuel supply (%)	5	<i>Forthcoming</i>	93
Forests and Land			
Deforestation (Mha/yr)	1.9	<i>Forthcoming</i>	0.31
Peatland degradation (Mha/yr)	0	0	0
Mangrove loss (ha/yr)	4,900	4,900 ^b	4,900 ^b
Reforestation (total Mha)	100 (2020–2030)	150 (2020–2035)	300 (2020–2050)
Peatland restoration (total Mha)	15 (2020–2030)	16 ^b (2020–2035)	20–29 (2020–2050)
Mangrove restoration (total ha)	240,000 (2020–2030)	<i>Forthcoming</i>	<i>Forthcoming</i>
Food and Agriculture			
GHG emissions intensity of agricultural production (gCO ₂ e/1,000 kcal)	500	450	320
Crop yields (t/ha)	7.8	8.2	9.6
Ruminant meat productivity (kg/ha)	33	35	42
Share of food production lost (%)	6.5	6.5	6.5
Food waste (kg/capita)	61	61	61
Ruminant meat consumption (kcal/capita/day) ^d	79	74	60
Technological Carbon Removal			
Technological carbon removal (MtCO ₂ /yr)	30–690	150–1,740 ^b	740–5,500
Finance			
Global total climate finance (trillion \$/yr) ^a	5.2	<i>Forthcoming</i>	5.1
Global public climate finance (trillion \$/yr)	1.31–2.61	<i>Forthcoming</i>	1.29–2.57
Global private climate finance (trillion \$/yr)	2.61–3.92	<i>Forthcoming</i>	2.57–3.86
Ratio of investment in low-carbon to fossil-fuel energy supply	7:1	<i>Forthcoming</i>	10:1 (2040)
Share of global GHG emissions under mandatory corporate climate risk disclosure (%)	75	100 ^b	100
Weighted average carbon price in jurisdictions with emissions pricing systems (2015 \$/tCO ₂ e)	170–290	<i>Forthcoming</i>	430–990
Total public financing for fossil fuels (billion \$/yr)	0	0	0

Notes:

^a Zero-carbon sources include solar, wind, hydropower, geothermal, nuclear, marine and biomass technologies.

^b These targets were not published in the *State of Climate Action 2023*, but they were developed following methods detailed in the report's technical note.

^c Achieving below-zero carbon intensity implies biomass power generation with carbon capture and storage. Our targets limit bioenergy with carbon capture and storage use to five gigatonnes of carbon dioxide per year in 2050.

^d This diet shift applies specifically to the high-consuming regions (Americas, Europe and Oceania). It does not apply to populations within the Americas, Europe and Oceania that already consume less than 60 kcal/capita/day, have micronutrient deficiencies and/or do not have access to affordable and healthy alternatives to ruminant meat.

^e This indicator includes public and private, as well as domestic and international, flows.





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The Consortium



The Climate Action Tracker (CAT) is an independent scientific analysis produced by three research organisations tracking climate action since 2009. We track progress towards the globally agreed aim of holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C.

climateactiontracker.org



Climate Analytics is a non-profit institute leading research on climate science and policy in relation to the 1.5°C limit in the Paris Agreement. It has offices in Germany, the United States, Togo, Australia, Nepal and Trinidad and Tobago.

climateanalytics.org



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

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