

2025 Report

The Production Gap Executive Summary



Executive Summary

Since 2019, the Production Gap Report (PGR) has examined how governments' collective production plans for coal, oil, and gas diverge from the Paris Agreement's goal of limiting global warming by "holding the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels". Governments have explicitly acknowledged the need to transition away from fossil fuels to achieve this goal, a conclusion now reinforced by an opinion of the International Court of Justice. Yet 10 years on from the Paris Agreement, the situation remains stark: countries are in aggregate planning even more fossil fuel production than before, putting global climate ambitions at increasing risk.

Key Findings

Governments, in aggregate, still plan to produce far more fossil fuels than would be consistent with achieving the goals of the Paris Agreement. Countries are now collectively planning even more fossil fuel production than two years ago, with projected 2030 production exceeding levels consistent with limiting warming to 1.5°C by more than 120%.

Taken together, governments now plan even higher levels of coal production to 2035, and gas production to 2050, than they did in 2023. Planned oil production continues to increase to 2050. These plans undermine countries' Paris Agreement commitments, and go against expectations that under current policies global demand for coal, oil, and gas will peak before 2030.

The continued collective failure of governments to curb fossil fuel production and lower global emissions means that future production will need to decline more steeply to compensate. Reaching net zero greenhouse gas emissions in the second half of the century, as the Paris Agreement calls for, will require cutting fossil fuel production and use to the very lowest levels possible.

Achieving these reductions will require deliberate, coordinated policies to ensure a just transition away from fossil fuels. While a few major fossil-fuel-producing countries have begun to align production plans with national and international climate goals, most still have not.

As governments submit their third round of nationally determined contributions under the Paris Agreement, they must commit to reversing the continued expansion of global fossil fuel production, explicitly integrate plans for reducing production within wider energy transition efforts, and redouble cooperative efforts to ensure a just transition globally.

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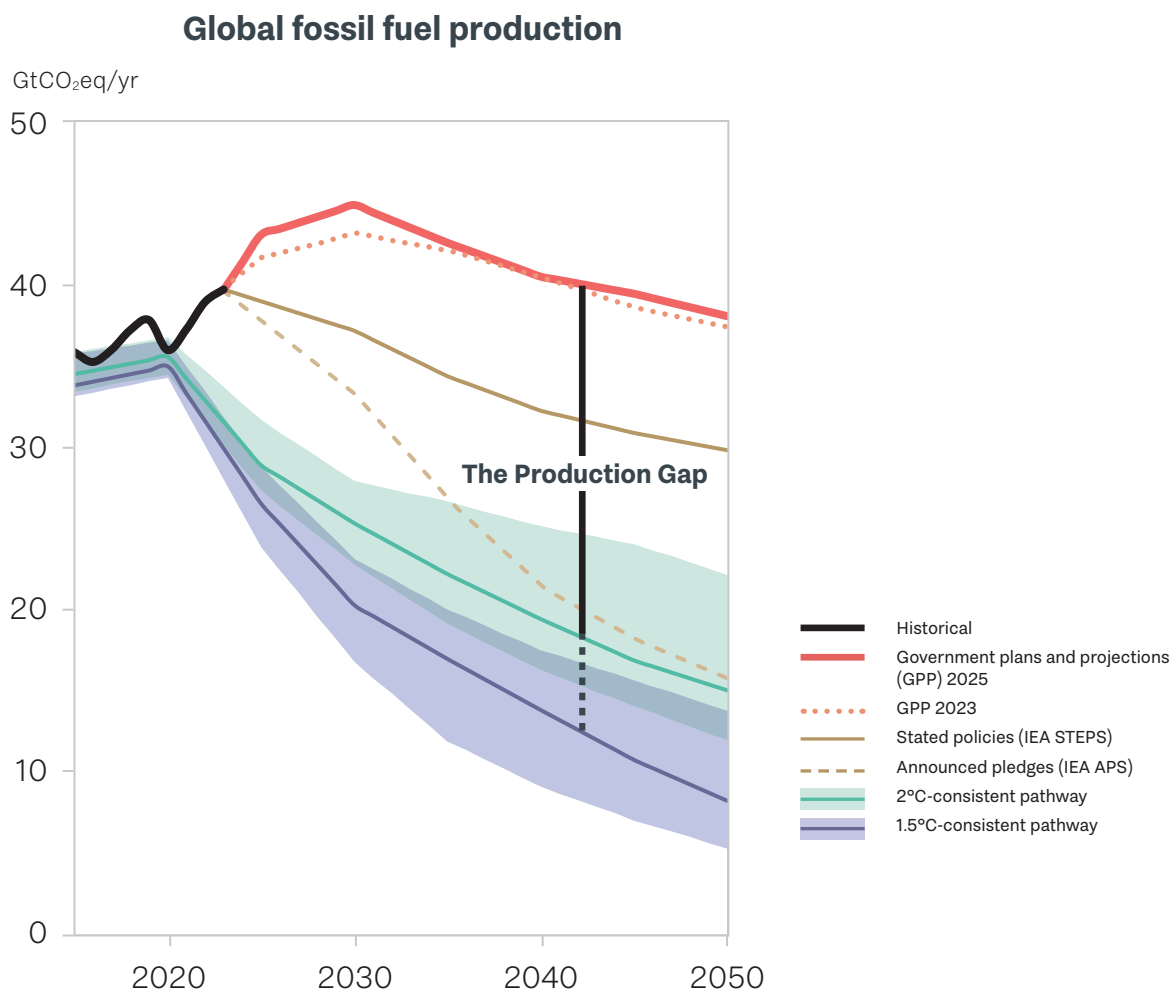
The production gap is the difference between governments' planned fossil fuel production and global production levels consistent with limiting global warming to 1.5°C or 2°C. This assessment updates the one conducted in the 2023 PGR, which profiled the plans and projections of 20 major fossil-fuel-producing countries, representing a mix of the world's largest producers. The assessment compares the global production these countries' latest plans imply to the same Paris-aligned climate mitigation scenarios used in PGR2023.

The resulting analysis, summarized in Chapter 2, finds that governments still plan to produce more than double the amount of fossil fuels in 2030 than would be consistent with the median 1.5°C pathway, as Figure ES.1 shows. The 2030 gap has increased, to more than 120% above the median 1.5°C pathway and 77% above the median 2°C pathway (compared to 110% and 69%, respectively, in the 2023 PGR).

As Figure ES.1 shows, governments' fossil fuel production plans also remain well above global levels implied by their stated climate mitigation policies and announced pledges as of September 2024, as modelled by the International Energy Agency.

Figure ES.1

Global fossil fuel production under six pathways from 2015 to 2050, denominated in units of billion tonnes of carbon dioxide equivalent per year (GtCO₂eq/yr) — the amount of greenhouse gas (GHG) emissions expected to be released from the production and combustion of extracted coal, oil, and gas. For the 1.5°C- and 2°C-consistent pathways, the figure shows the median and 25th–75th percentile range (shaded) of all selected scenarios. The dotted red line indicates the pathway implied by government plans and projections (GPP) estimated in the 2023 Production Gap Report. The black trend line shows historical 2015–2023 annual production; all other pathways are plotted at five-year resolution.



Taken together, governments now plan even higher levels of coal production to 2035, and gas production to 2050, than they did in 2023. Planned oil production continues to increase to 2050. These plans undermine countries' Paris Agreement commitments, and go against expectations that under current policies global demand for coal, oil, and gas will peak before 2030.

The near-term gap increase is the result of government plans for expanded coal and gas production. As Figure ES.2 shows, aggregate planned coal production for 2030 is 7% higher than estimated in the 2023 PGR analysis; planned gas production is 5% higher.

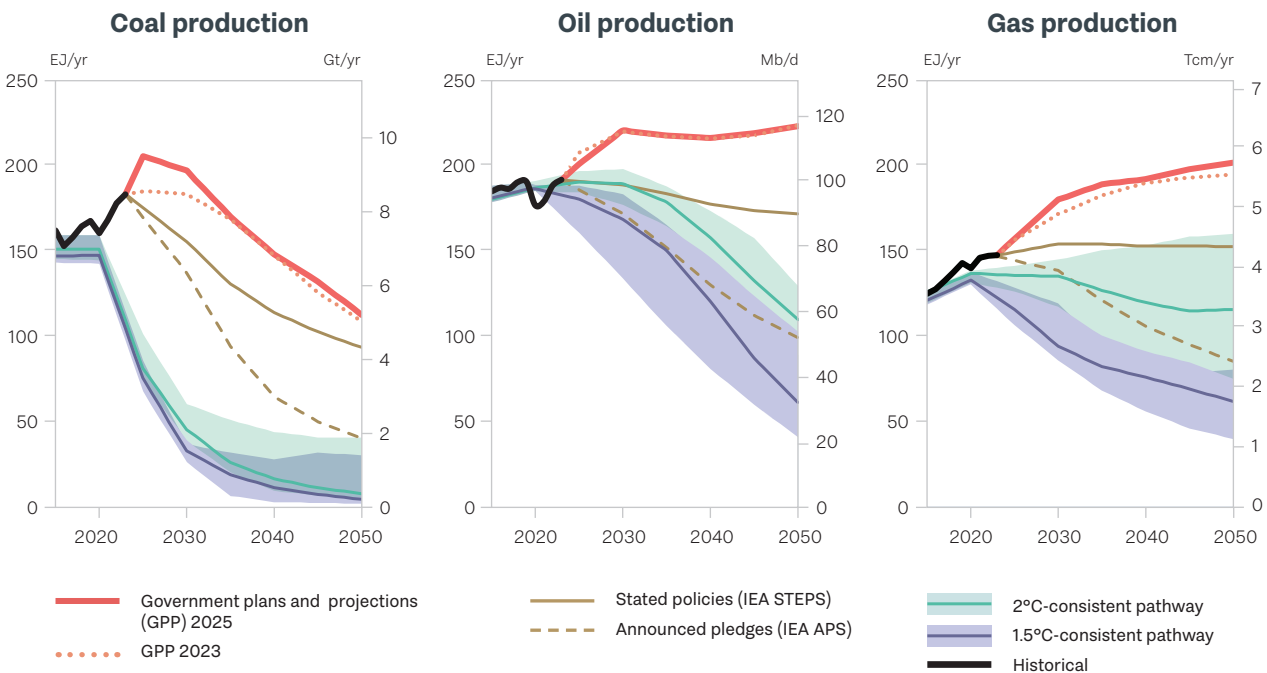
To be consistent with limiting warming to 1.5°C, global coal, oil, and gas supply and demand must decline rapidly and substantially between now and mid-century. However, the increases estimated under the government plans and projections pathways would lead to global production levels in 2030 that are 500%, 31%, and 92% higher for coal, oil, and gas, respectively, than the median 1.5°C-consistent pathway, and 330%, 16%, and 33% higher than the median 2°C-consistent pathway.

The continued collective failure of governments to curb fossil fuel production and lower global emissions means that future production will need to decline more steeply to compensate. Reaching net zero greenhouse gas emissions in the second half of the century, as the Paris Agreement calls for, will require cutting fossil fuel production and use to the very lowest levels possible.

Every year that countries fail to make progress in curbing fossil fuel production and use, it becomes harder for the world to achieve its climate goals. In the first half of the 2020s, rather than peaking and falling rapidly, fossil fuel production has continued to grow. The time lost has two implications. The first is that cumulative fossil fuel production over the 2020s is likely to be substantially higher than in the 1.5°C- and 2°C-aligned pathways used to assess the production gap. Thus, even if the world reduces fossil fuel production in 2030 to the levels seen in these pathways, the total coal, oil, and gas extracted over this decade will still be higher than is consistent with these pathways.

Figure ES.2

Global coal, oil, and gas production under six pathways from 2015 to 2050, denominated in exajoules (EJ) per year. Physical units for each fossil fuel show as secondary axes: billion tonnes per year (Gt/yr) for coal, million barrels per day (Mb/d) for oil, and trillion cubic meters per year (Tcm/yr) for gas. For the 1.5°C- and 2°C-consistent pathways, the figure represents the median and 25th–75th percentile range (shaded) of selected mitigation scenarios. The black trend lines show historical 2015–2023 annual production; all other pathways are plotted at five-year resolution.



Second, these deeper reductions will be harder and more expensive to achieve, as the result of further lock-in of fossil fuel infrastructure added in the 2020s, and the increased pace of reductions required from now on. Even with rapid and concerted efforts starting today, fossil fuel production in 2030 will likely exceed the levels in the 1.5°C-compatible scenarios presented in this report.

At the same time, the last two years have also shown the importance of keeping the 1.5°C target in sight. Governments at COP28 agreed to “keep the 1.5°C goal within reach” and called for countries to submit mitigation targets “aligned with limiting global warming to 1.5°C”. The 1.5°C limit has been further reinforced by the International Court of Justice, which found that 1.5°C is the “primary temperature goal” of the Paris Agreement, and that global and national responses must work towards this goal. Doing so will require reaching net zero greenhouse gas emissions in the second half of this century, as called for in the Paris Agreement. This will require fossil fuel production and use to be cut to the very lowest levels possible.

Analysis in the 2023 PGR indicated that countries should aim for a near total phase-out of coal production and use by 2040 and a combined reduction in oil and gas production and use by three-quarters by 2050 from 2020 levels, at a minimum. Growing evidence supports both the necessity and feasibility of such deep reductions.

Achieving these reductions will require deliberate, coordinated policies to ensure a just transition away from fossil fuels. While a few major fossil-fuel-producing countries have begun to align production plans with national and international climate goals, most still have not.

Cutting fossil fuel production will require deliberate strategies to phase fossil fuel production down and out by the second half of the century. Such strategies would help countries fulfil their Paris Agreement pledges and net zero targets. Chapter 3 of this report summarizes recent developments related to the climate ambitions and the plans, perspectives, and policies for fossil fuel production of 20 major producer countries: Australia, Brazil, Canada, China, Colombia, Germany, India, Indonesia, Kazakhstan, Kuwait, Mexico, Nigeria, Norway, Qatar, the Russian Federation, Saudi Arabia, South Africa, the United Arab Emirates, the United Kingdom, and the United States. Most of these countries continue to plan fossil fuel production at levels inconsistent with their net zero climate ambitions.

As Table ES.1 indicates, 17 of the 20 profiled countries still plan to increase production of at least one fossil fuel to 2030; 13 profiled countries plan significant increases in gas production. Moreover, as the country profiles in Chapter 3 indicate, 11 countries now expect higher production of at least one fuel in 2030 than they were planning in 2023, when we last undertook this assessment.



Table ES.1

Net zero commitments and relative changes in planned/projected fossil fuel production for the 20 countries profiled in this report.

Country	Status of national net zero commitment	Net zero target year	Planned change in national fossil fuel production in 2030 relative to 2023 (EJ)		
			Coal	Oil	Gas
Australia	In law	2050	▲ 0.7	▼ 0.1	▼ 0.2
Brazil	In policy document	2050	No data	▲ 4.1	▲ 0.9 ^c
Canada	In law	2050	No data	▲ 2.3	■ 0.0
China	NDC objective	2060	▼ 4.1	▲ 0.2	▲ 2.4
Colombia	In law	2050	▲ 1.8	▼ 0.1	▲ 0.1
Germany	In law	2050	▼ 0.9	No data	▲ 0.1
India	In law	2070	▲ 7.3 ^d	No data	No data
Indonesia	NDC objective	2060	▼ 2.1	▲ 0.8	▲ 1.7
Kazakhstan	In law	2060	▼ 0.2	▲ 0.5	▲ 0.2 ^c
Kuwait	Political pledge	2050 (oil and gas sector) 2060 (rest of economy)	No production	▲ 0.6	▲ 0.2
Mexico	Political pledge	2050	No data	▲ 1.0	■ 0.0
Nigeria	In law	2060	No data	▲ 3.1	▲ 1.8 ^c
Norway	No commitment ^a	-	No data	▼ 0.7	▼ 0.5
Qatar	No commitment	-	No production	No data	▲ 4.3
Russian Federation	In strategy document	2060	▲ 2.2	▲ 0.4	▲ 7.4
Saudi Arabia	Political pledge	2060	No production	▲ 4.2	▲ 1.9
South Africa	Political pledge	2050	No data	No data	No data
United Arab Emirates	In policy document	2050	N/A	▲ 0.6	▲ 0.7
United Kingdom	In law	2050	No data	▼ 0.6	▼ 0.7
United States	No commitment ^b	-	▼ 5.4	▲ 3.3	▲ 3.5

^a Norway has committed to a "low-emission society" by 2050 in its 2018 Climate Change Act, with 90–95% emission reduction targets.

^b In early 2025, the US government revoked Executive Orders 14008 and 14057, both of which had net zero targets.

^c Excluding gas that is reinjected, used by producers, or flared.

^d Planned change for 2029, furthest year for which data is available.

Sources: Net Zero Tracker (2025) and authors' analyses (see country profiles)

Despite an internationally agreed commitment to phase out “inefficient fossil fuel subsidies” — reiterated as part of the Global Stocktake agreed at the COP28 climate conference — many governments continue to provide substantial direct and indirect financial support for fossil fuels. The countries profiled here support production in multiple ways, including direct investment in infrastructure (Canada), streamlining of contracting procedures (Brazil), direct subsidies or investments for state-owned enterprises (China, India, Mexico), tax incentives for exploration and extraction (Kazakhstan, the Russian Federation), and opening up new areas for exploration and development (US, Norway). The fiscal cost of government support for fossil fuels remains near an all-time high.

As governments submit their third round of nationally determined contributions under the Paris Agreement, they must commit to reversing the continued expansion of global fossil fuel production, explicitly integrate plans for reducing production within wider energy transition efforts, and redouble cooperative efforts to ensure a just transition globally.

Not all the indicators reviewed in this report are negative. Six of the 20 profiled countries are now developing scenarios for domestic fossil fuel production aligned with national and global net zero targets, up from four in 2023. And several governments are actively pursuing clean energy transitions. For example, Colombia has adopted a Just Energy Transition roadmap and announced an invest-

ment plan to support it; Germany projects an even faster phase-out of coal production than in prior years; Brazil has launched an Energy Transition Acceleration Program; and China continues to deploy renewables at an unprecedented rate, hitting its 2030 target for solar and wind capacity six years ahead of schedule and lowering carbon dioxide emissions despite growing power demand.

Moreover, multiple countries profiled here remain committed to international cooperation on energy transitions. Although Just Energy Transition Partnerships — launched in 2021 to support a shift away from fossil fuels in emerging and developing countries — have faced implementation challenges, donor countries (except for the US) remain committed to supporting those already underway, and are exploring other types of innovative financing and cooperation mechanisms.

But much more is needed. As this report makes clear, most major fossil-fuel-producing countries have yet to embrace policies for deliberately phasing out fossil fuels and ensuring just transitions (or, in the case of the US, have abandoned them). Widely adopting and implementing such policies will be essential for successfully transitioning to a net zero world at the pace now required.

A digital copy of this report along with supporting appendices is available at <https://productiongap.org/2025report>



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