

The Production Gap Executive Summary

Key Findings

Governments are planning to produce about 50% more fossil fuels by 2030 than would be consistent with a 2°C pathway and 120% more than would be consistent with a 1.5°C pathway.

This global production gap is even larger than the already-significant global emissions gap, due to minimal policy attention on curbing fossil fuel production.

The continued expansion of fossil fuel production — and the widening of the global production gap — is underpinned by a combination of ambitious national plans, government subsidies to producers, and other forms of public finance.

Several governments have already adopted policies to restrict fossil fuel production, providing momentum and important lessons for broader adoption.

International cooperation plays a central role in winding down fossil fuel production.

Executive Summary

This report addresses the necessary winding down of the world’s production of fossil fuels in order to meet climate goals. Though coal, oil, and gas are the central drivers of climate change, they are rarely the subject of international climate policy and negotiations. This report aims to expand that discourse and provide a metric for assessing how far the world is from production levels that are consistent with global climate goals.

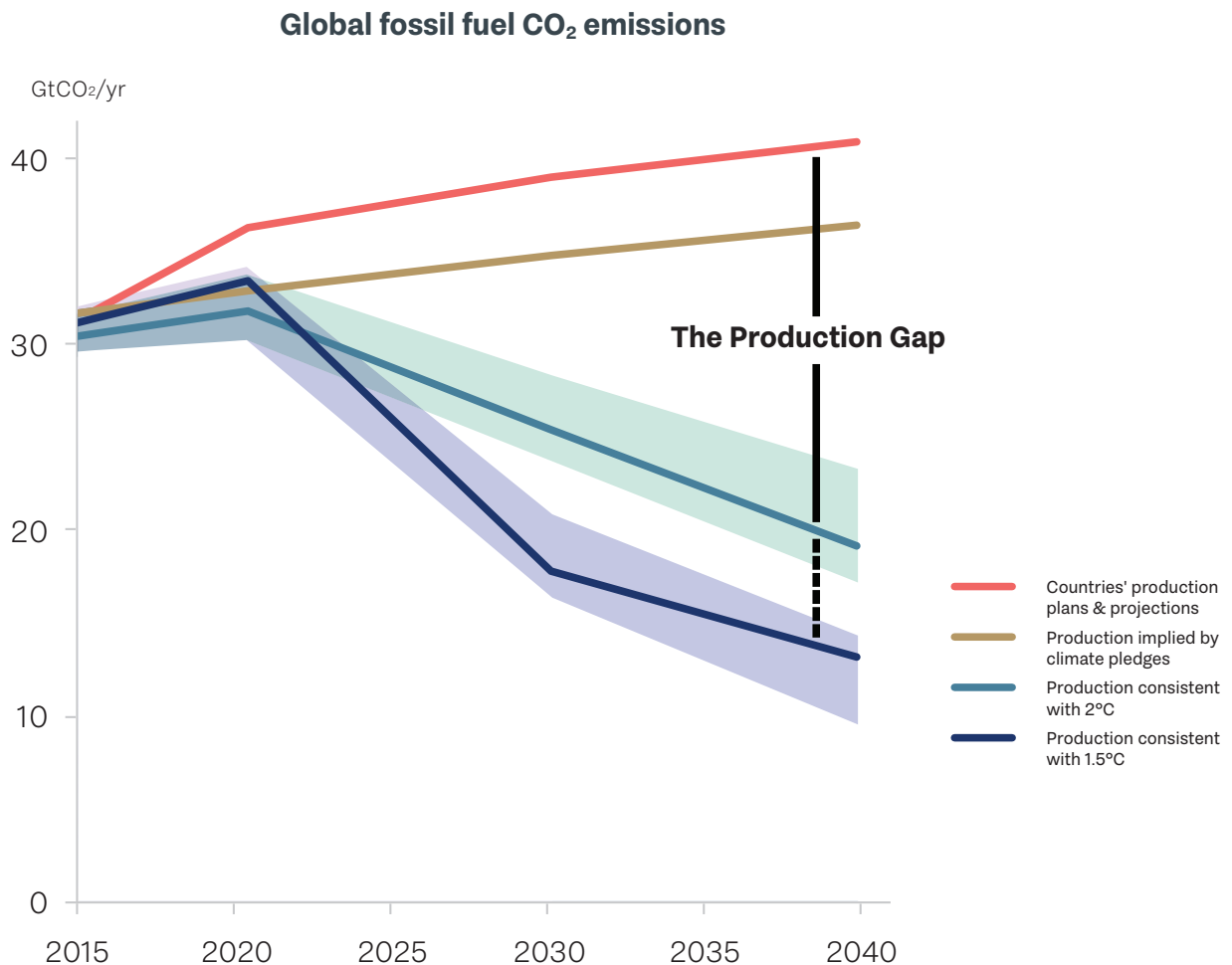
Specifically, this first *Production Gap Report* assesses the discrepancy between government plans for fossil fuel production and global production levels consistent with 1.5°C and 2°C pathways. This *production gap* tells us the magnitude of the challenge.

The report reviews, across 10 fossil-fuel-producing countries, the policies and actions that expand fossil fuel

production and, in turn, widen the gap. It also provides policy options that can help countries better align production with climate goals. This is especially relevant over the next year, as countries prepare new or updated nationally determined contributions (NDCs), which set out their new emission reduction plans and climate pledges under the Paris Agreement.

Figure ES.1

The fossil fuel production gap — the difference between national production plans and low-carbon pathways (1.5°C and 2°C), as expressed in fossil fuel carbon dioxide (CO₂) emissions — widens between 2015 and 2040.



The report's main findings are as follows.

Governments are planning to produce about 50% more fossil fuels by 2030 than would be consistent with a 2°C pathway and 120% more than would be consistent with a 1.5°C pathway.

To estimate the production gap, this report puts forward a method analogous to that used in the *Emissions Gap Report*. It uses publicly available data to estimate the difference between what countries are planning and what would be consistent with 1.5°C and 2°C pathways, based on scenarios from the recent Intergovernmental Panel on Climate Change (IPCC) Special Report on *Global Warming of 1.5°C*.

This analysis shows that:

- In aggregate, countries' planned fossil fuel production by 2030 will lead to the emission of 39 billion tonnes (gigatonnes) of carbon dioxide (GtCO₂). That is 13 GtCO₂, or 53%, more than would be consistent with a 2°C pathway, and 21 GtCO₂ (120%) more than would be consistent with a 1.5°C pathway. This gap widens significantly by 2040.
- This production gap is largest for coal. By 2030, countries plan to produce 150% (5.2 billion tonnes) more coal than would be consistent with a 2°C pathway, and

280% (6.4 billion tonnes) more than would be consistent with a 1.5°C pathway.

- Oil and gas are also on track to exceed carbon budgets, as countries continue to invest in fossil fuel infrastructure that “locks in” oil and gas use. The effects of this lock-in widen the production gap over time, until countries are producing 43% (36 million barrels per day) more oil and 47% (1,800 billion cubic meters) more gas by 2040 than would be consistent with a 2°C pathway.

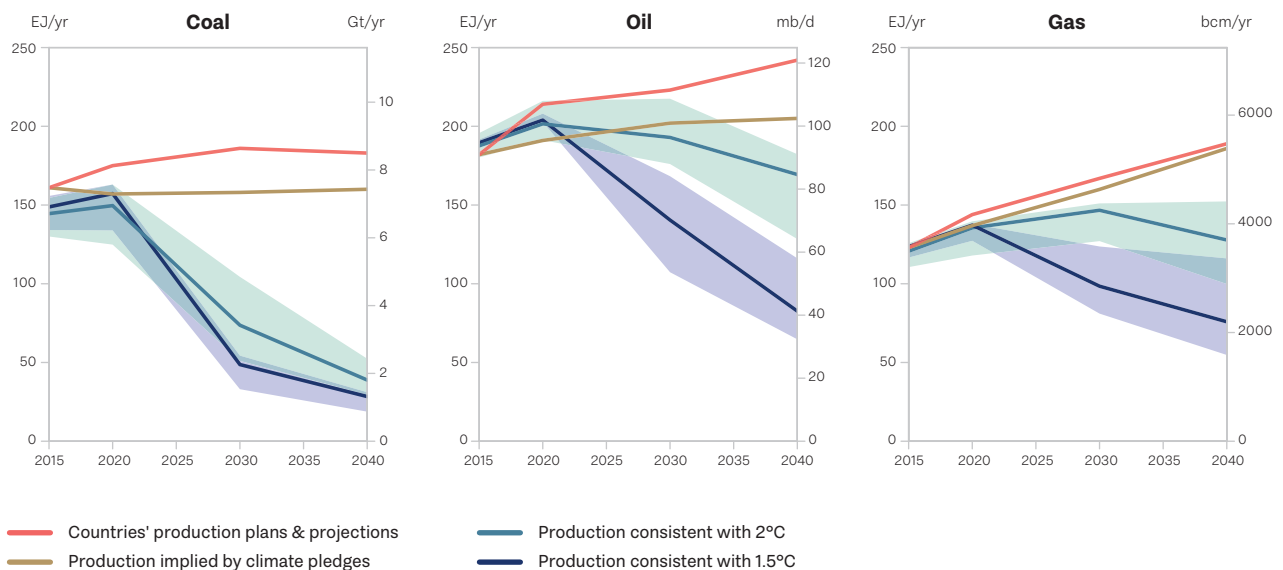
This global production gap is even larger than the already-significant global emissions gap, due to minimal policy attention on curbing fossil fuel production.

Collectively, countries' planned fossil fuel production not only exceeds 1.5°C and 2°C pathways, it also surpasses production levels consistent with the implementation of the national climate policies and ambitions in countries' NDCs. As a consequence, the production gap is wider than the emissions gap.¹

Indeed, though many governments plan to decrease their emissions, they are signalling the opposite when it comes to fossil fuel production, with plans and projections for expansion. This hinders the collective ability of countries to meet global climate goals, and it further widens not just the production gap, but the emissions gap as well.

Figure ES.2

The production gap is widest for coal but grows rapidly for oil and gas. By 2040 the production gap, in energy terms, is as large for oil as it is for coal. Physical units are displayed as secondary axes: billion tonnes per year for coal, million barrels per day for oil, and billion cubic meters per year for gas.



¹ Since the emissions gap is the difference between the implementation of NDCs and Paris Agreement goals, an exceedance of planned fossil fuel production above the level consistent with NDCs implies that the production gap is larger than the emissions gap, at least for CO₂ emissions from fossil fuel combustion

The continued expansion of fossil fuel production — and the widening of the global production gap — is underpinned by a combination of ambitious national plans, government subsidies to producers, and other forms of public finance.

Governments support production in numerous ways. They not only play central roles in the permitting of exploration and production; they also support the fossil fuel industry through direct investments, research and development funding, tax expenditures, and assumed liability and risk. Fossil fuel subsidies span all stages of the fossil fuel production process, from research, development, and exploration, to operations, transport, processing, marketing, decommissioning, and site remediation.

This report reviews specific production plans, outlooks, and support mechanisms in 10 key countries: seven top fossil fuel producers (China, the United States, Russia, India, Australia, Indonesia, and Canada) and three significant producers with strongly stated climate ambitions (Germany, Norway, and the United Kingdom). It finds that:

- The production of coal, oil, and gas in nearly every national plan or outlook exceeds the 2030 levels projected in the International Energy Agency's New Policies Scenario, a scenario roughly consistent with global implementation of the NDCs.
- Many countries appear to be banking on export markets to justify major increases in production (e.g., the United States, Russia, and Canada) while others are seeking to limit or largely end imports through scaled-up production (e.g., India and China). The net result could be significant over-investment, increasing the risk of stranded assets, workers, and communities, as well as locking in a higher emissions trajectory.

Several governments have already adopted policies to restrict fossil fuel production, providing momentum and important lessons for broader adoption.

To help close the production gap, countries would benefit from new models of addressing fossil fuel supply. Though most countries focus exclusively on the “demand side” — with policies that aim to boost renewable energy, energy efficiency, and other low-carbon technologies — some governments have also begun to enact “supply-side” measures that aim to limit fossil fuel production. A range

of policy options can help governments align their fossil fuel development plans and policies with climate goals, including: economic instruments (such as subsidy reform); regulatory approaches (such as banning new extraction permits); government provision of goods and services (such as just transition plans); and measures to enhance information and transparency (such as national reporting of fossil fuel production and targets).

The governments of Belize, Costa Rica, France, Denmark, and New Zealand have all enacted partial or total bans or moratoria on oil and gas exploration and extraction, while Germany and Spain are phasing out coal extraction. Local governments, companies, investors, trade unions, and civil society organizations can also accelerate a transition away from fossil fuels, by mobilizing constituencies and shifting investment to lower-carbon options. For example, individuals and institutions have already pledged to divest over USD 11 trillion from fossil fuel holdings.

International cooperation plays a central role in winding down fossil fuel production.

The UN climate process and other international institutions and initiatives can help catalyse supply-side ambition and action. Measures to move away from fossil fuel production are more effective when countries adopt them together, and international cooperation can send a clear signal to policymakers, investors, consumers, and civil society that the world is shifting towards a low-carbon future.

The Paris Agreement provides key opportunities for countries to report their fossil fuel production and their plans and strategies to align future production with climate goals, including through the global stocktake, NDCs, long-term low greenhouse gas emission development strategies, and financing. Countries that have already begun to wind down fossil fuel production can help other countries learn from their experiences. International financing institutions can accelerate the transition by shifting financial support away from fossil fuel production and towards low-carbon solutions. And, drawing inspiration from models such as the Powering Past Coal Alliance, coalitions of leading actors can work together to raise ambition through joint targets and actions that align future fossil fuel production with global climate goals.

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