

Closing the Fossil Fuel Production Gap

With increased climate ambition, coal, oil, and gas production will need to wind down

As the UN Secretary General calls on governments to stop building new coal-fired power plants, emerging research shows that countries are actually on track to produce far more coal, oil, and gas by 2030 than would be consistent with Paris Agreement goals.

As countless studies show, countries must significantly reduce their emissions to meet the Paris Agreement goals. Current climate pledges will only limit global warming to about 3°C above preindustrial levels, by the end of the century; the UNEP Emissions Gap Report estimates that countries need to triple their emission reduction pledges to limit warming to the Paris goal of “well below” 2°C and increase reductions fivefold for a 1.5°C scenario.¹

This emissions gap is related to—and widened by—the “production gap.” Countries continue to expand the production of coal, oil, and gas, creating a significant gap between that expansion and what is possible to use within the limits of a 1.5°C or 2°C carbon budget. This gap stymies climate ambitions by locking in fossil fuel infrastructure that will make emission reductions harder and more costly to achieve.

The Production Gap Report — set for release in November 2019 — will equip decision-makers with a resource on how to better align fossil fuel production with climate objectives. It will show how current national plans, projections, and policies would significantly increase fossil fuel production, and could thereby potentially undermine countries’ emission reduction plans. The report will

provide a reference point to measure progress, simply presenting the divergence between the current course of global fossil fuel production and future pathways consistent with Paris goals. Preliminary findings suggest that the world is on track to produce 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.

The production gap is initially largest for coal, but oil and gas are also on track to exceed carbon budgets, with the effects of lock-in increasing over time.

The 2019–2020 period is an opportune moment to bridge this production gap. Countries are in the process of preparing new or updated nationally determined contributions (NDCs), which set out their new emission reduction plans and climate pledges under the Paris Agreement. The UN Secretary-General’s Climate Action Summit in September 2019 is a key part of this process, with the Secretary-General calling on governments to enhance ambitions and to stop building new coal plants in 2020.² The Summit is a space for countries to start aligning coal production — as well as oil and gas supply — with the Paris goals.³

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Fossil fuels: the heart of the climate problem

The combustion of fossil fuels accounts for 70% of all global greenhouse gas (GHG) emissions and over 90% of all CO₂ emissions (excluding land use, land-use change, and forestry).^{4,5} Until recently, that has meant that policy-makers and international agreements have focused almost solely on the points of combustion and use. These efforts to decrease fossil fuel demand include policies on energy efficiency, low-carbon power supply technology, and carbon pricing, among others.

Such policies are crucial for climate mitigation, but they have not yet put fossil fuel use on a trajectory consistent with keeping global warming at 1.5°C or well below 2°C. Their success is linked to the other side of the coin — namely, policies to limit the extraction and delivery of coal, oil, and gas.

The political and economic interests and institutions that underpin fossil fuel production help to perpet-

uate fossil fuel use, and even to increase it. From this perspective, continued investment in fossil fuel exploration, extraction, and delivery infrastructure makes global climate protection objectives much harder to achieve.⁶

There is also an important economic rationale for focusing on the supply side of fossil fuels: investors and financial institutions are increasingly warning that climate change and broader environmental concerns may lead to the premature retirement of fossil fuel reserves and supply, resulting in “stranded assets” and associated financial losses for investors and governments.⁷ A failure to take this “unburnable carbon” into consideration in economic and development planning will lead to a more drastic, costly, and socially disruptive transition from fossil fuels in the next few decades.

How can countries keep fossil fuel production in line with climate goals?

Policies to constrain fossil fuel production are beginning to gain ground, including moratoriums on new exploration licenses, the removal of subsidies to the fossil fuel industry, and divestment from fossil fuel holdings.

The governments of New Zealand, France, Costa Rica, Belize, and Denmark, for instance, have all set limits on the exploration and future extraction of oil and gas. Likewise, Germany and Spain have committed to phasing out coal production.

These “supply-side” policy options broaden and strengthen the climate policy toolkit and can help countries enhance their emission reduction targets. This is particularly important as the 2020 deadline approaches for countries to update their NDCs.

Limiting fossil fuel production can also help avoid “carbon lock-in”, where investments in ongoing production uphold the advantages of fossil fuel incumbents, and tie the economy to ongoing production in the future.

Measures that address both the supply and demand of fossil fuels simultaneously can also help achieve emission reductions more cost-effectively than through

demand-side policies alone.⁸ Supply-side policies furthermore target a narrower set of actors, and thus may be easier to administer.^{9,10} Given that fossil fuels are more tangible than emissions, they may also more easily attract public support.⁹

There may also be broader sustainable development benefits to focusing on fossil fuel supply. Tackling fossil fuel production can help reduce air and water pollution, and carry significant co-benefits for health, biodiversity, and the local environment.^{11,12}

In their NDCs, countries could include not just targets to limit oil, gas, and coal production, but also plans for economic diversification, reforms for fossil fuel subsidies, and development limits. Policy-makers have a broad array of supply-side options, from economic instruments to regulations and divestment (Table 1).

Reducing fossil fuel demand is key. But production matters too; using both supply and demand levers can ensure greater emission reductions and combat carbon lock-in.

Table 1: Examples of policy options to support a managed decline in fossil fuel production

| Category | Supply-side policy |
|--|--|
| Economic instruments | Remove fossil fuel producer subsidies |
| | Introduce fees or taxes for fossil fuel production or export, and increase royalties |
| Regulatory approaches | Limit exploration, production, or export (e.g. via moratoria, bans, or quotas) |
| | Prohibit development or limit permits for specific resources, infrastructure (oil pipelines and terminals, coal ports, etc.), or use of certain technologies |
| | Ensure comprehensive (upstream and downstream) emissions assessments in environmental impact reviews of new fossil fuel supply projects |
| Government provision of goods and services | Assist workers and communities transitioning out of fossil fuel production |
| | Divest state-controlled investment funds from companies involved in fossil fuel production |
| | Restrict export credit agency or development finance for fossil fuel supply infrastructure |
| Information and transparency | Require corporate disclosure of long-term, climate-related risks associated with capital-intensive, upstream production and exploration ¹⁵ |
| | Set targets for reducing fossil fuel production, and report on progress alongside existing climate mitigation accounts (e.g. using an extraction-based emissions accounting framework) ¹⁶ |

Source: Lazarus and van Asselt (2018), adapted from Somanathan et al. (2014) Table 15.2^{13,14}

Ideally, these policies to constrain oil, gas, and coal production should be enacted jointly with measures that limit the demand for fossil fuels. This offsets potential leakages from enacting either policy alone. For example, a demand-side policy to increase energy efficiency could, in turn, lead to lower fossil fuel prices, which then increases fuel use; this leakage would be neutralized if a supply-side policy limiting fossil fuel production were in place.^{8,17,18}

Similarly, pairing supply-side measures with demand-side measures can increase the scale of emission reductions that can be achieved at a given cost.^{18,13} A long-term strategy to decrease both the production and consumption of fuels — at a pace aligned with the temperature goals of the Paris Agreement — can send a powerful signal to markets about the transition away from fossil fuels.

This transition should come with consideration for those who depend on the oil, gas, or coal industry for their livelihood. Many governments are recognizing the need for “just transition” planning to minimize disruption for workers and communities who may be disproportionately affected by a shift to a low-carbon economy.

For example, the governments of Germany, Spain, and New Zealand are all developing or implementing new transition planning processes and support programs to help fossil-fuel-dependent workers and communities adjust as their industry declines. These transition policies are important because they help build consensus for more ambitious climate policy, and they help ensure that no groups in society are left behind in the shift to a greener economy.



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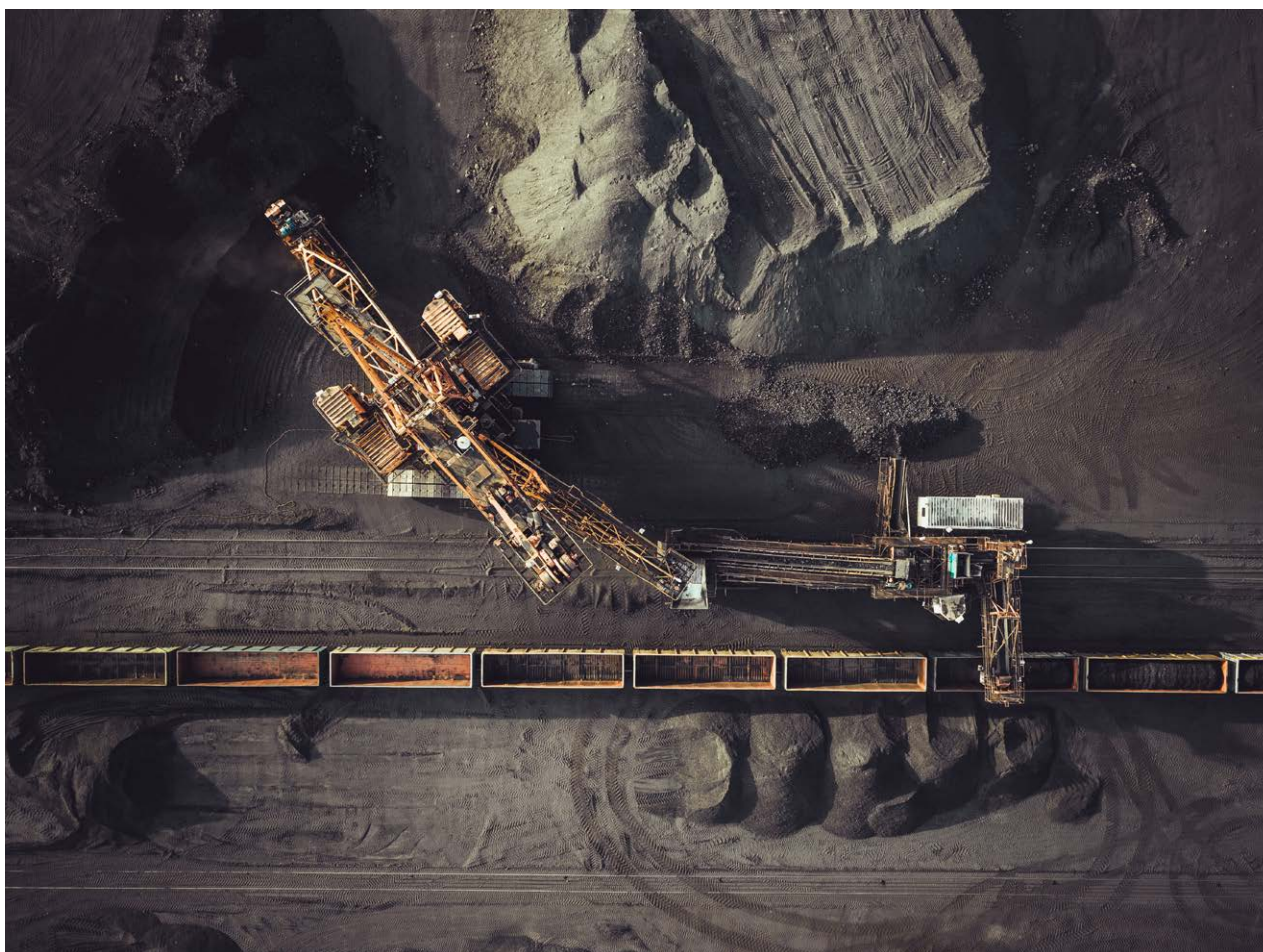
Mobilizing a global response

While on their own, the measures listed in Table 1 can help to speed the transition away from fossil fuels, they will be the most effective if adopted collectively as part of a global response to climate change.

The Paris Agreement offers a range of tools — including NDCs — that allow countries to communicate their efforts to wind down fossil fuel supply and thus build international momentum. For example, countries can map out a transition away from fossil fuel production through their long-term low greenhouse gas emissions development strategies, which the Paris Agreement invites them to submit by 2020. The global stocktake, scheduled for 2023 and every five years thereafter, is also an opportunity to assess how and whether countries are winding down fossil fuel production. High-income countries and financing institutions could also direct support to developing countries to reduce their dependence on (or need for) further fossil fuel production.

Beyond the UN process, non-state actors — such as subnational governments, investors, industry, and civil society — can help spotlight the need to transition away from fossil fuel production and ramp up national ambition. More than 500 non-governmental organizations, for instance, have signed the “Lofoten Declaration”, calling for an end to fossil fuel development and the managed decline of existing production.¹⁹ Many city and regional governments are putting in place policies to restrain fossil fuel supply, and help communities move into alternative economic development models. And individuals and institutions have already pledged to divest almost USD 10 trillion in fossil fuel stocks, bonds, and investment funds.²⁰

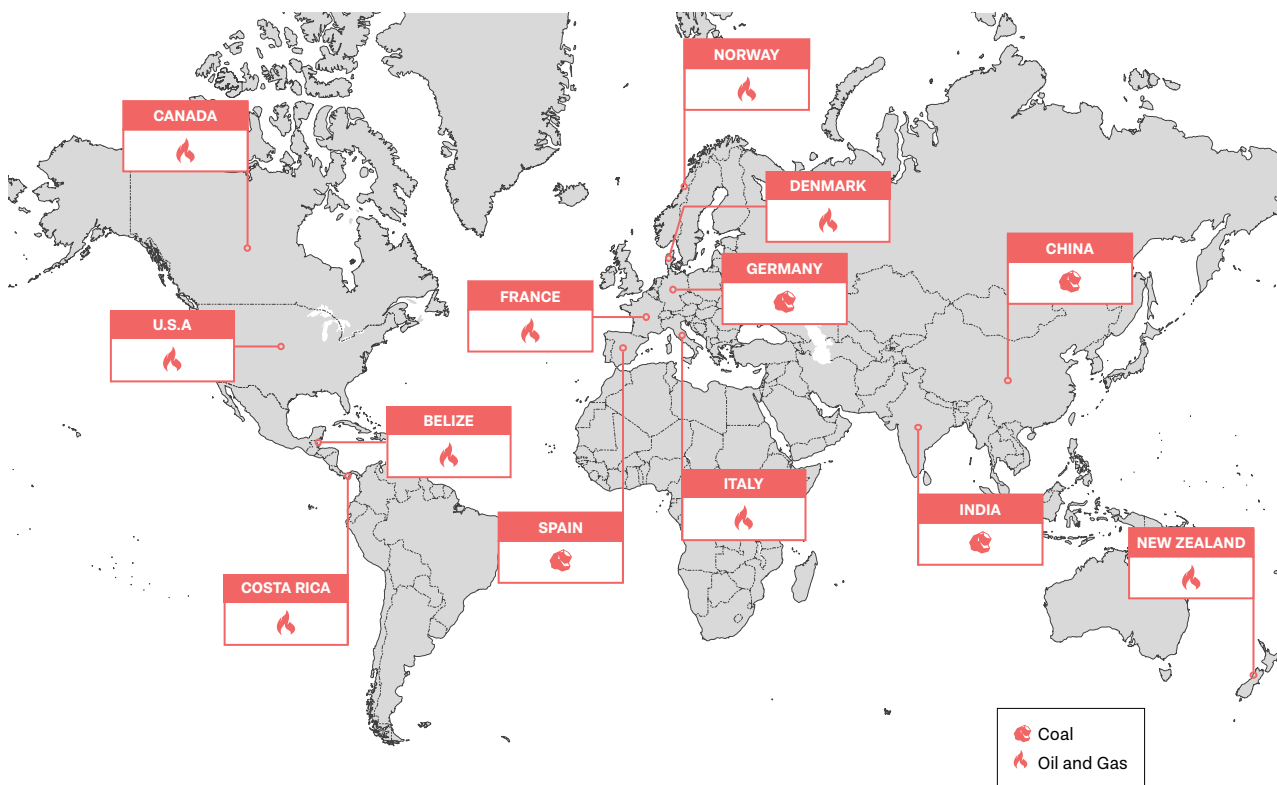
The UN Secretary-General’s Climate Action Summit is an opportunity for countries to “demonstrate a leap in collective national political ambition”.²¹ By building on existing actions by governments, subnational actors, and civil society, countries can help close the production gap and bring this vision within reach.



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Examples of supply-side policies and measures adopted by national governments

This map serves as an illustrative, not comprehensive, overview of supply-side measures.



BELIZE

🔥 Moratorium on offshore oil exploration and drilling

CANADA

🔥 Phase-out of the accelerated capital cost allowance for oil sands projects and the Atlantic Investment Tax Credits for use in oil and gas activities (subsidy reform)

🔥 Moratorium on offshore oil and gas activities in Canada's Arctic waters and in designated marine protected areas

CHINA

🔥 Supply-side structural reform (closure of coal mines) and just transition support measures

COSTA RICA

🔥 National moratorium on oil exploration and exploitation

DENMARK

🔥 Ban on exploration and drilling for oil, gas, and shale gas on land and in inland waters

FRANCE

🔥 No new or renewal of exploration permits for conventional and unconventional fossil fuels; Phase-out of all oil and gas production within the country and its overseas territories by 2040

GERMANY

🔥 Phase out of subsidies for domestic hard coal industry by 2018

🔥 Just transition plan for the coal industry: compensation for coal mining provinces; compensation and training for coal miners

INDIA

🔥 Cess (tax) on coal production

ITALY

🔥 18-month moratorium on offshore oil and gas exploration permits

NEW ZEALAND

🔥 Ban on new offshore oil and gas exploration permits

🔥 Establishment of a "Just Transitions Unit" with a focus on supporting the region most dependent on the oil and gas industry

NORWAY

🔥 Certain offshore areas closed for drilling (including Lofoten archipelago and other coastal and sensitive areas and in the Arctic)

SPAIN

🔥 Closure of domestic coal mines with Just Transition plan (compensation and re-training)

USA

🔥 Moratorium on oil and gas exploration in some areas of the Arctic and Atlantic

Endnotes

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