



Countdown to COP28:
**Time for world to focus on oil and gas phase-out,
renewables target – not distractions like CCS**

June 2023



Summary

COP28 in the UAE needs to send a clear signal towards ambitious climate action by initiating a phase-out of oil and gas production, setting a new global target on renewables and avoiding distractions like CCS or co-firing old combustion technology with synthetic fuels from renewable sources.

There is already a globally-accepted consensus on phasing out coal, with many governments signing up to a coal exit, agreements at COP, G20 and G7 level, and international and national financial institutions on their way to defunding it, but there's no such agreement on oil and gas. Neither is there a global target for renewable energy.

In this briefing the Climate Action Tracker assesses recent action from national governments to start phasing out oil and gas production and support renewable electricity—or promoting distractions like CCS.

To initiate the end of oil and gas production, the CAT has identified four main actions and checked whether national governments are following them (Table 1).

We find:

None of the world's largest fossil fuel producers have committed to ending new investments in oil and gas production and are instead increasing them. This is despite the clear scientific evidence that, to limit global warming to 1.5°C, such investments need to stop immediately. The fossil fuel “goldrush” is continuing, as most of the major fossil fuel producers continue to invest in exploration and production.

Developed countries must lead the way and set end dates for oil and gas production—only minor producers are doing so. Major oil and gas producers and exporters, such as the US, Canada, Norway and Australia have a clear responsibility to move first. However, they are all planning to expand their production and export of fossil fuels. Only a handful of countries—all minor producers—have ended or pledged to end oil and gas production.

Most governments have failed to eliminate fossil fuel subsidies despite longstanding promises to do so. Across the board, governments continue to support fossil fuels, directly by expanding infrastructure for production or by providing financing or other forms of support.

G7 members continue to support international public finance for fossil gas despite pledging to end new international public finance for fossil fuels in 2022. The 2023 G7 meeting once again confirmed its support for public investment in fossil gas using the energy crisis as an excuse. And many governments continue to provide indirect finance to fossil gas through financial intermediaries.

The current system works for the rich: Oil and gas exploration, production and trade washed record and windfall profits into the pockets of corporations in 2022. The big western oil companies alone paid out USD 110bn in dividends and share repurchases (Reuters, 2023a)— a number higher than the global climate finance target of the Paris Agreement of USD 100bn by 2020, which developed countries have still not met. Oil and gas majors have dumped their plans to reduce investment in production, increasing it instead. At the same time many developing countries still lack access to clean and affordable energy and around the world people increasingly suffer from energy poverty, at least in part exacerbated by high fossil fuel prices and lack of finance for renewables.

Table 1: Recent examples for policies to phase-out oil and gas production.

	✓ EXAMPLES OF POSITIVE ACTION	✗ GOVERNMENTS MOVING IN THE WRONG DIRECTION
End new oil and gas exploration & production	France Sweden Ireland Colombia Portugal New Zealand Spain	All major oil & gas producers
Set end dates for all oil and gas production	Sweden Denmark France Spain	All major oil & gas producers
End subsidies for oil and gas production	New Zealand	United States Norway Australia Canada
End international public finance for fossil fuels	New Zealand	Japan Norway Germany Russia United States

The CAT also finds that major oil and gas producers promote technologies that simply enable prolonging oil and gas production and distract from the real need to halve greenhouse gas emissions by 2030 and reduce global production of fossil fuels (Table 2).

We find:

Carbon capture and storage cannot be a lifeline for oil and gas:









The UAE, as the world's 7th largest oil and 15th largest fossil gas producer, has officially been promoting an "emissions free" fossil fuel agenda—touting the use of CCS in the energy sector rather than phasing out oil and gas. In a sustainable 1.5°C pathway, CCS with fossil fuels does not play a relevant role in energy sector decarbonisation, as renewable energy is much cheaper in comparison and has a much lower environmental footprint. The use of CCS needs be limited to industrial applications where it is proven there are no other options to reduce process emissions.

In any event CCS is nowhere near the scale and commercial viability needed to deliver on emissions reductions at scale, in large part due to technological and cost challenges. Beyond the UAE, other major fossil fuel exporting economies such as the US, Canada, Australia and Saudi Arabia are also pushing for CCS to reduce emissions from oil and gas production and combustion.

Co-firing fossil fuels with renewable resources will never be competitive:

Several governments are now promoting the use of fuels made from renewable electricity to reduce fossil fuel use in existing infrastructure: co-firing ammonia in coal-fired power plants, blending hydrogen in fossil gas networks or using e-fuels for cars. In these applications, electricity can be used directly and the use of fuels from renewable sources is a risky distraction: it allows building new coal-fired power plants and extending their lifetime, installing new gas boilers and selling fossil fuel cars—with a clear risk they will end up running on fossil fuels.

Table 2. Recent examples of distraction

	✗ GOVERNMENTS MOVING IN THE WRONG DIRECTION
Avoid promotion of carbon capture and storage with fossil fuels	<div>  Japan  Norway  United States </div> <div>  Germany  Russia  Saudi Arabia </div>
Avoid fuels from renewable sources where direct use of electricity is possible	<div>  Germany  Japan </div>

Electricity generation needs to rapidly transition to zero emissions, primarily through renewable energy, to meet sustainable development goals and stay below the Paris Agreement's temperature limit. Governments have not taken sufficient action on three important elements:

National renewable electricity targets need to be more ambitious, Paris aligned, inclusive and push implementation. New renewable targets are again in the spotlight. While some countries have updated their renewable energy targets in light of the energy crisis, others, such as South Korea, have moved backwards. All countries need to set targets in line with the required transition for 1.5°C—noting there is a clear need for increased international cooperation.

The creation of favourable conditions for increased renewable energy uptake is advancing, but also lagging behind in some countries: As technologies mature, governments can slowly remove financial support schemes for new wind and solar installation, and direct them to less mature technologies. Removing policy barriers is also an important step towards renewable energy deployment. India and Germany have for example adjusted administrative processes to prioritise and speed up renewable energy additions.

Phase-out targets for coal-fired electricity generation and moratoriums on new coal plants are becoming more widespread, but some major players have failed to act. On the one hand, the pipeline for new coal fired power plants is decreasing, particularly in India. On the other hand, there are no signs of phase-out in China and Japan. Phasing out coal and replacing it with renewables is key.

If a global target on renewable expansion is set, it should be a value that is clearly larger than 1 TW added capacity per year on average as of today for the coming decades to support a full phase-out of fossil fuels in the electricity sector. Recently, different policy makers and civil society organisations have started to call for a global renewable electricity target. For it to be effective, the global target needs to be ambitious enough to drive rapid change. The G7's new target for solar PV merely reflects already stated policies according to the IEA's World Energy Outlook.

The UAE's action to support oil, gas and CCS casts serious doubts on its ability to broker an ambitious deal at COP28. The UAE is clearly pushing an agenda that distracts attention from a fossil fuel phase-out—and which, if successful, would lock in large scale oil and gas production. This misses an opportunity to negotiate an equitable oil and gas phaseout at COP28 that would take into account the urgent need for decarbonisation.



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1 Introduction

The state of global climate action has not changed much since the UN's Secretary General António Guterres warned that the world is on a "highway to climate hell" at COP27. Not a single major emitter has put forward a stronger NDC target since 2022. Our current projections show that, with the action and policies currently implemented by governments, the world is still heading to a catastrophic 2.7°C of warming by the end of the century (Climate Action Tracker, 2022).

Global greenhouse gas emissions need to roughly be halved by 2030 compared to today's levels if we are to limit warming to 1.5°C (IPCC, 2022). However, they are still on the rise, with energy-related global carbon dioxide (CO₂) emissions even reaching a record high of 36.8 GtCO₂ in 2022 (IEA, 2023a).

Oil, fossil gas and coal are responsible for around 90% of global CO₂ emissions, with oil and gas alone representing close to half of total energy-related CO₂ emissions (IEA, 2023a). The science is clear: fossil fuels need to rapidly decline, and eventually be phased out.

In parallel, governments need to massively ramp up renewable energy supply to enable a just energy transition, in line with "sustainable development and efforts to eradicate poverty" (Article 2 of the Paris Agreement (UNFCCC, 2015)). International cooperation and climate finance is required to increase access to technologies, de-risk investments and build capacities.

Despite support from 80 countries, governments failed to agree to phase out fossil fuels at COP27 in Sharm el-Sheikh, only just managing to reiterate the weakened call from COP26 to phase down unabated coal power and inefficient fossil fuel subsidies.

The imperative for a coal phaseout is no longer a subject for debate – but despite the scientific evidence, it has taken long to get to this point. While implementation may be lagging, many of the largest coal-consuming nations have now established targets for phasing out coal. It is crucial that we apply the same sense of urgency to phasing out oil and gas.

Already two years ago the IEA showed that there should be no new investments in oil, gas and coal if we are to stay below the 1.5°C limit of the Paris Agreement. Despite this warning, many of the world's largest oil and gas producers are still planning major increases in production.

The United Arab Emirates (UAE), COP28 president and one of the world's largest oil producer and exporter, is now actively promoting a CCS-driven "emissions-free" fossil fuel development, raising concerns around the world.

Given the urgency of the climate crisis and emissions reductions needed in the near term, there is no time to waste on distractions that serve to prolong the lifetime of fossil fuels:

- ▶ CCS is not a viable solution for decarbonising the electricity sector, where it remains much more expensive than renewable energy and storage. The use of CCS should be limited to industrial applications where it is proven options to reduce process emission are not available.
- ▶ Reducing emissions linked to oil and gas (and coal) production (including by reducing flaring, loss of reservoir CO₂, methane leakage and improving efficiency) is necessary but has to go hand in hand with a rapid reduction in overall production.

Present atmospheric CO₂ levels mean that negative CO₂ emission technologies, such as Bioenergy with Carbon Capture and Storage (BECCS) or Direct Air Capture, will need to be deployed at scale in coming decades to reduce the CO₂ in the atmosphere and to compensate for residual GHG emissions from some sectors such as agriculture. However, these negative CO₂ emissions must be additional to decarbonising the energy sector, and cannot be used to compensate for emissions from fossil fuels and prolong their use.

COP28 would ideally be the stage for a historic agreement on the rapid, just, and well managed transition away from all fossil fuels – although this is looking increasingly unlikely, with the current COP presidency promoting the expansion of oil and gas.

Developed countries need to lead the way and immediately end new oil and gas developments and exploration. Leading industrialised oil and gas exporters do have a responsibility for their fossil fuel exports – we highlight this by looking in depth at the examples of the US, Norway and Australia. We also look at the case of the UAE as the COP28 president.

In parallel, the discussion about a global renewable energy target has begun, as this is also needed to enable a full phase-out of fossil fuels. European Commission President Ursula von der Leyen has called for a global renewable energy target at the Major Economies Forum this April. Germany has also called for a global renewable target at the Petersberg Dialogue in May 2023 and the G7 countries have committed to a joint target.

This briefing covers findings from some of the [40 countries](#) analysed by the Climate Action Tracker and draws from those assessments. While the CAT only covers the EU as a whole (and Germany), this briefing also mentions action taken by several individual EU member states.

In this briefing we look at actions and policies governments can put in place to limit warming to 1.5°C, including moving away from oil and gas production (chapter 2), avoiding distractions from rapid emissions reductions (chapter 3), and supporting renewable-based energy systems (chapter 4). This briefing focuses on the energy supply side but acknowledges the relevance of limiting demand through energy efficiency and, particularly in the Global North, avoiding overconsumption.

To limit warming to 1.5°C, oil and gas production ultimately needs to be phased out entirely. To do so, several steps have to be taken extremely fast:

- ▶ Investments in new oil and gas projects should end immediately (IEA, 2021a).
- ▶ Oil and gas use needs to start declining now, with drastic reductions in the next few decades. The IPCC (2022) underscores the need for global CO₂ emissions to reach net zero by 2050, which means that without significant dependence on removals oil and gas need to be virtually phased out.

Individual countries would need to end production with differentiated timelines. Information on country-specific dates for ending oil and gas production is limited. One study finds that developed countries need to phase out oil and gas production by 2034 if taking equity considerations into account (Calverley and Anderson, 2022).

Governments need to put the following measures in places, at a minimum, to phase out oil and gas production as part of a clear vision for a managed and just transition:

- ▶ Immediately end new oil and gas exploration and production.
- ▶ Set end dates for all oil and gas production, with developed countries leading the way.
- ▶ Immediately end subsidies for oil and gas production.
- ▶ Immediately end all international public finance for fossil fuels.

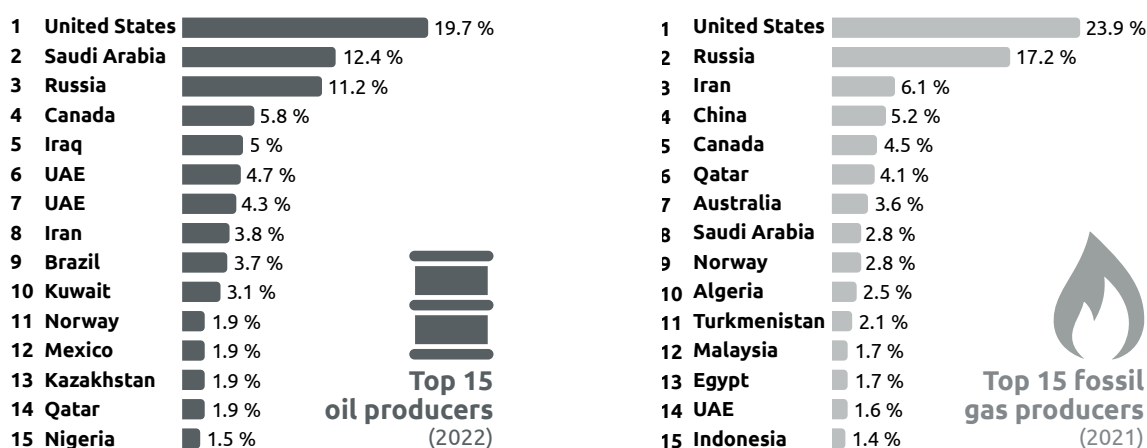
The following sections of the report show what governments are doing (or failing to do) in these areas.

The world's largest oil and gas producers all need to come forward with Paris-aligned oil and gas production pathways. Advanced economies need to phase out oil and gas production and phase-in renewable energy to replace them with their own resources. Lower income countries will need support to transition to an energy system powered by renewables.

The world's largest oil producers are the US, Saudi Arabia, Russia and Canada (Table 3), while the largest fossil gas producers are the US, Russia, Iran, China (Table 3). The top three for both oil and gas jointly produced almost half of the global volume for each fuel respectively, which gives an indication of the countries that most urgently need to take action to drive down global emissions.

Oil and gas exporters must come under particular scrutiny, especially when it comes to advanced economies, as exported emissions are not accounted in domestic emissions inventories – yet all have a responsibility to contribute to a rapid reduction of emissions, including fossil fuel exporters. The case studies for Norway, the US, Australia and the UAE, from page 8 highlight this issue.

Table 3 World's largest oil and fossil gas producers (US EIA, 2023a)



2.1 Stop issuing new permits for oil and gas exploration and production

Governments control permits for new oil and gas exploration and production. Setting an end to new oil and gas licenses gives a clear signal to industry and helps prevent additional stranded assets, as current oil and gas projects are to meet the demands for these fuels under a 1.5°C compatible scenario (IEA, 2021b; IISD, 2022).

To date, none of the world's largest oil and gas producers (see Table 3 and Table 4) have stopped issuing new licenses for oil and gas. The two most significant producers that have done this or have pledged to do so are Colombia and Denmark.

Major oil and gas producers from the most advanced economies, such as the **US, Norway, Australia and the UK, need to lead the phaseout and immediately end new licenses to oil and gas projects.** Other producers should also follow.



POSITIVE ACTION

- ▶ Some **EU member states** have stopped issuing new licenses as part of their commitment as members of the Beyond Oil and Gas Alliance. This includes **Denmark, France, Ireland, Portugal, Spain and Sweden.**
- ▶ **Colombia's** president Gustavo Petro ran on a campaign to end oil and gas licenses. While the government has not completely excluded future licenses, there is clear commitment to tackle this issue.
- ▶ **New Zealand** has banned offshore oil and gas exploration.



WRONG DIRECTION

- ▶ **Norway** is expanding drilling and exploration in the Barents Sea and the government recently handed dozens of new licenses for offshore oil and gas exploration.
- ▶ **Canada** approved a large offshore project in 2022 (though one of its provinces, Quebec, has banned oil and gas exploration).
- ▶ **Australia** continues to offer new areas for offshore exploration and is sanctioning large land areas for fracking.
- ▶ The **UK's** latest round of licensing for offshore production in the North Sea concluded in January 2023.
- ▶ **The US** included the issuance of new licences in the "Inflation Reduction Act", as a compromise to get the law through Congress. The US has approved major oil drilling projects on federal lands in Alaska and it has auctioned even more for offshore oil and gas drilling in the Gulf of Mexico. The state of California has however banned new fracking permits from 2024 (Government of the State of California, 2022).
- ▶ The **UAE** is heavily invested in ramping up its offshore gas exploration.
- ▶ All of the other major oil and gas producing countries are also continuing to issue new licenses for exploration and production.

BEYOND OIL AND GAS ALLIANCE

The core members of the Beyond Oil and Gas Alliance launched at COP26 in Glasgow commit "to end new concessions, licensing or leasing rounds and to set a Paris-aligned date for ending oil and gas production". Those countries jointly only produced a minimal amount of global oil and gas. The largest producer, Denmark, only produces less than 0.1% of the world's oil and an even more minimal amount of the world's fossil gas. Other core members include: Costa Rica, France, Greenland, Ireland, Portugal, Quebec, Sweden, Tuvalu, Vanuatu, Wales and Washington State.

2.2 Set end dates for oil and gas production

To limit global temperature increase to 1.5°C oil and gas production needs to be reduced significantly by 2050. Developed countries need to completely phase out oil and gas production well before that.

To achieve this, governments need to set Paris-aligned end dates for oil and gas production. In many cases, current reserves and producing fields far exceed what is compatible with limiting warming to 1.5°C.

Only very few countries of those the Climate Action Tracker analyses have committed to phasing out their oil and gas production and they are all small producers. Most of the largest oil and gas producing countries actually aim at increasing their production (see examples below).

The global trend is still heading in the wrong direction. While oil and gas production should already be declining in 1.5°C compatible pathways, oil demand is expected to reach a new record in 2023 at 102 million barrels per day (IEA, 2023c), with oil supply also set to increase to match this (US EIA, 2023b). Total gas production is estimated to have remained constant in 2022 compared to the year before (IEA, 2023b) despite Russia's war in Ukraine and the embargoes many countries imposed on Russian gas.

This is why it is crucial for governments to set out a clear vision for the future, and to ensure an orderly transition out of oil and gas in the long run.



POSITIVE ACTION

- ▶ Some **EU member states** have set an end for oil and gas production. This includes Sweden (by 2022), France (2040, with some exceptions), Spain (2042), Denmark (2050). The largest of these, Denmark, produced around 25% of the EU's oil and 5% of its gas in 2019 (before it banned new licenses for oil and gas projects in 2020). The 2050 date for Denmark is also much too late to lead the way.



WRONG DIRECTION

- ▶ The **US** is planning to increase both oil and gas production and is expected to reach production records in the next couple of years. The state of California is however aiming to phase out oil production by 2045 (Government of the State of California, 2021).
- ▶ **Saudi Arabia:** While OPEC members announced oil production cuts in the short-term, Saudi Arabia's national oil company has a target to increase oil production to 13 million barrels of oil per day by 2027, up from 11–12 million in recent years.
- ▶ **Russia's** oil production continued to grow in 2022 despite its illegal invasion of Ukraine and the sanctions imposed against it.
- ▶ **Australia**, the world's largest LNG exporter with Qatar, has projected an 11% increase in LNG production and export between 2020 and 2030.
- ▶ **China's** Xi Jinping announced greater efforts to explore and develop oil and gas reserves to increase production at the 20th National Congress of the Chinese Communist Party in 2022.
- ▶ The **UAE** is planning to increase its oil production by 30% by 2025, coupled with increases in its gas production.

The examples show that even most of the developed countries, who should lead the way in phasing out fossil fuels, are far from doing so.

2.3 End fossil fuel subsidies

The oil and gas industry has historically benefited from generous subsidies and favourable tax regimes. Fossil fuel subsidies, both direct and indirect, continue to distort energy prices by keeping oil and gas prices artificially low, discouraging investment in cleaner alternatives. Fossil fuel subsidies place a heavy burden on public finance, while diverting resources away from other policy areas.

A report by the IMF shows that proper pricing of fossil fuels could help cut 36% of global CO₂ emissions (Parry et al., 2021). Setting prices that reflect the true costs of fossil fuels would also further increase the cost-competitiveness of renewable energy.

A study by the IEA and the OCED shows that fossil fuel subsidies provided by G20 countries doubled in 2021, totalling USD 190 bn (OECD, 2022). This recent surge in subsidies, in particular in consumption subsidies, was driven by soaring energy prices and the demand rebound following the COVID-19 pandemic. However, this trend stands in stark contrast with the Glasgow Climate Pact which calls out countries to phase out inefficient fossil fuel subsidies.



POSITIVE ACTION

- ▶ **New Zealand** has committed to implementing a domestic subsidy reform to end oil and gas the subsidies, while also ending public financing of oil and gas domestically.



WRONG DIRECTION

- ▶ **The US** gives some of the world's largest subsidies for all fossil fuels per capita. The government provided USD 8.4 billion in production subsidies to the oil and gas industry in 2021 (Fossil Fuel Subsidy Tracker, 2023).
- ▶ **Australia:** fossil fuel subsidies cost around ~USD 7.2 billion in 2022–2023 across the state, territory, and federal governments (The Australia Institute, 2023). Forward estimates reached USD 39 bn, up USD 1.3 bn from the 2022 forecast.
- ▶ **Norway** provided USD 361 million in production subsidies to the oil and gas industry in 2021 (Fossil Fuel Subsidy Tracker, 2023).
- ▶ **Canada's** subsidies to the oil and gas industry amounted to USD 3 bn in 2021 (Fossil Fuel Subsidy Tracker, 2023), though has promised action on subsidies this year.

2.4 End international public finance for fossil fuels

During COP26, 39 countries and institutions signed the “Glasgow Climate Pact”, committing to end any new direct public finance support for unabated fossil fuel energy projects abroad by 2022 and instead prioritise investment in clean energy. This followed an initial commitment by G7 members to stop funding any overseas fossil fuel development by the end of 2022.

The Glasgow Pact leaves the door open for indirect finance, for example through financial intermediaries, and speaks of “clean” rather than renewable energy and unabated fossils. And despite the initial momentum and commitments, many countries continue to fund fossil fuel projects abroad.



POSITIVE ACTION

- ▶ **New Zealand** has moved to transform the Glasgow pledge into action: its export credit agency has committed to end international public financing of oil and gas (in addition to domestic finance – with possible exceptions to small-scale projects in developing countries where no alternatives exist (New Zealand Government, 2022). The exemption does not apply to gas-fired power plants, contrary to the UK.



MIXED SIGNALS

- ▶ **The UK** ended support for new fossil fuel projects abroad in April 2021 (UK Government, 2022b), but agreed to support a massive new LNG plant in Mozambique just months before making the policy announcement (UK Government, 2022b). It also continues to finance entities providing auxiliary support to the oil and gas industry (UK Government, 2022a).
- ▶ **Canada** stopped providing new direct support for unabated fossil fuel energy projects abroad at the end of 2022 (Government of Canada, 2022b). Its export credit agency has existing commitments of CAD 2.5bn (Government of Canada, 2022a).



WRONG DIRECTION

- ▶ **Japan** plans to keep funding gas infrastructure and so-called “clean coal” technologies in ASEAN countries through the Asia Zero Emissions Community (AZEC) initiative.
- ▶ **Germany's** bilateral development bank KfW is discussing generous exceptions for fossil oil and gas infrastructure (Kachi, 2023), and, together with Japan which imports 100% of its fossil energy, pushed for exceptions in the commitment to end public investment for fossil gas in the latest G7 Communiqués.
- ▶ **Norway** continues to fund fossil fuels overseas.
- ▶ **The US** committed to ending finance for unabated fossil fuels abroad at COP26 but the Export-Import Bank of the United States recently decided to finance an oil project in Indonesia (Copley, 2023; The Export-Import Bank of the United States, 2023).
- ▶ **Russia** actively finances fossil fuels abroad. From 2013 to 2019, Russia provided USD 1.5 bn in public finance to support fossil fuel projects in Africa and the Middle East.

CAT METHODOLOGY

The CAT uses and rates emissions within a country's own borders, as reported to the UNFCCC (or similar datasets).

What does this mean for fossil fuel exporters? For a fossil fuel exporter, the CAT would account for domestic emissions linked with the production of oil, gas and coal but not the emissions derived from combusting the fossil fuels in the importing country.

While governments are accountable for emissions occurring within their own borders, fossil fuel exporters also have a responsibility to support the objectives of the Paris Agreement and align their actions to limit warming to 1.5°C – which means ending additional investments in oil, gas and coal coupled with a rapid reduction in production.

The following snapshots highlight this for some of the world's largest oil and gas exporters, with a particular emphasis on developed countries – Australia, Norway and the US – and the UAE as the COP28 president.



UNITED ARAB EMIRATES

OVERALL CAT RATING

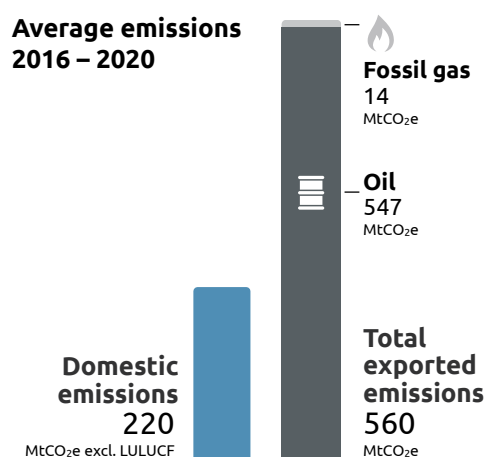
HIGHLY INSUFFICIENT

The UAE is the world's seventh largest oil producer and 14th largest gas producer. It is also one of the world's largest oil exporters. The CAT rates the UAE's overall climate action as "Highly insufficient", taking into account greenhouse gas emissions within its own borders. The UAE's greenhouse gas emissions were at 220 MtCO₂e on average in 2016–2020 (excluding land use and forestry emissions). The carbon dioxide emissions resulting from the combustion of its oil and gas exports amounted to 570 MtCO₂, nearly triple that of its domestic emissions in the same period (Figure 1).

The UAE not only continues to heavily support the expansion of fossil fuels, but has also recently doubled down on its plans, with an aim to increase oil production by 30% in the next three years, from 3.8 to 5 million barrels a day by 2025 – moving this target forward from 2030 (Di Paola, 2022). This comes along plans to develop massive offshore gas infrastructure (The Guardian, 2023).

The UAE has persistently tried to present its plans as "sustainable" and shut down critics by pushing a "low carbon oil and gas" and "phase out of fossil fuel emissions" narrative (Reuters, 2023c). The UAE is heavily betting on the use of CCS to allow for continued investments in oil and gas. It has come up with a net zero target by 2050 but has yet to put forward credible policies to start reducing emissions. The UAE set out a target to reduce emissions by up to 5 MtCO₂e per year by 2030 with the use of CCS (Reuters, 2023b), which is only around 2% of its current emissions and less than 1% of its exported emissions.

The nomination of Sultan al-Jaber, the current head of the national oil company ADNOC, as the COP28 president gives an indication that UAE's objectives for the COP are aligned with their national strategy: keep fossil fuel production alive.



Source: CAT (2022) & own calculations based on IEA (2022)



UNITED STATES OF AMERICA

OVERALL CAT RATING

INSUFFICIENT

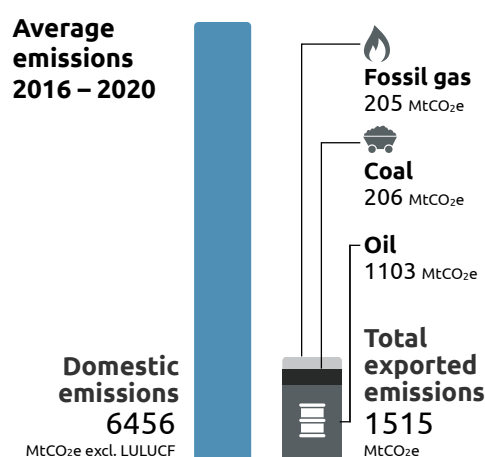
The US is the world's largest oil and gas producer, and also one of the largest fossil fuel exporters. The US' oil and gas production¹ has massively increased in recent years and is projected to continue increasing. US oil production has more than doubled since 2010– from 8.6 to around 19 million barrels of oil per day in 2021, whereas gas production has increased by around 60% in the same period (US EIA, 2023a).

The US exported 1.5 GtCO₂ worth of oil, gas and coal in 2016–2020 – the second highest worldwide just after Russia. Most of these emissions come from exported oil. As outlined above, this value has been on the rise in recent years, with emissions from exports amounting to 1.8 GtCO₂ in 2021 (of which 1.6 Gt from oil and gas). In comparison, the US' domestic greenhouse gas emissions amounted to 6.3 GtCO₂e in 2021.

As the world's largest fossil fuel producer, one of the largest greenhouse gas emitters and one of the richest countries, the US needs to take leadership on phasing out fossil fuels. While it eventually backed language on a "fossil fuel phasedown" at COP27, the US needs to do more and translate this intention into action when it comes to its own fossil fuel production, consumption and exports.

The state of California is the only oil and gas producing state that has moved to end production: it has banned new fracking permits from 2024 and is aiming to phase out oil production by 2045. The state of Washington has joined the Beyond Oil and Gas Alliance and has put in place measures to ban new fossil infrastructure, including oil refineries, but it does not produce any oil and gas.

The US continues to have one of the world's highest levels of subsidies for fossil fuels and provides significant subsidies to the oil and gas industry (Fossil Fuel Subsidy Tracker, 2023). While it has committed to ending finance for fossil fuels abroad, its Export-Import Bank recently approved funding for an oil refinery in Indonesia.



Source: CAT (2022) & own calculations based on IEA (2022)

¹ Including crude oil, NGPL and other liquids, as compiled by the U.S. Energy Information Administration

OVERALL CAT RATING
ALMOST INSUFFICIENT

Norway was the third largest exporter of fossil gas globally in 2021 (BP, 2022). Almost all oil and gas produced on the Norwegian shelf is exported meaning that export emissions dwarf domestic emissions by about 10 times.

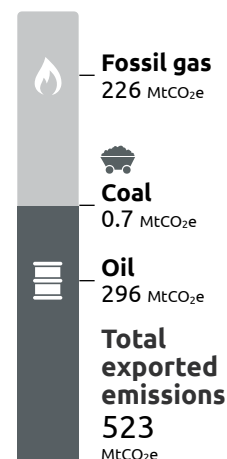
The CAT rates Norway as “Almost sufficient” – or in line with limiting warming to 2°C. However, this only reflects Norway’s domestic action. As one of the most advanced economies that has significantly benefited from oil and gas revenues, Norway should set an example for others and immediately end new investments in oil and gas – along with a clear plan to phase out production.

Between 2012 and 2022, the Norwegian government awarded more than 700 oil and gas exploration licenses, as much as in the preceding 47 years (Oil Change International, 2022). These licenses represent 2.8 billion barrels of new oil and gas resources. If development of oilfields already licensed but not producing is permitted, this could lead to an additional 3 GtCO₂ of emissions if these fuels are sold and consumed (Oil Change International, 2022).

After overtaking Russia in 2022 as the number one supplier of fossil gas to Europe (Buli and Adomaitis, 2022), the Norwegian government is seeking to shore up its position with plans to increase its oil and gas production until at least 2025 and the minister of energy signalling interest in continuing current levels of gas production until 2030 (Lundgren, 2023). To that end, the government offered a record number of new offshore oil and gas exploration blocks in the Arctic in this latest round of awards in pre-defined areas (Government of Norway, 2023).

With no plans to phase out of the fossil fuel industry, the government anticipates a 7% increase in oil production this year and gas output to continue at near record high levels (Norwegian Petroleum, 2023). In addition to oil and fossil gas production levels rising, so too is investment by oil and gas producers (Adomaitis and Fouche, 2023). These policies and actions on the part of the Norwegian government stand in stark contrast to the fact that oil and gas production should already be declining in 1.5°C compatible pathways.

**Average
emissions
2016 – 2020**
**Domestic
emissions**
52

 MtCO₂e excl. LULUCF


Source: CAT (2022) & own calculations based on IEA (2022)



AUSTRALIA

OVERALL CAT RATING

INSUFFICIENT

Australia is the world's largest LNG exporter, roughly equal with Qatar. While coal is its largest fossil fuel export (see graph), in the midst of a worldwide effort to curtail the production and consumption of fossil fuels, Australia has projected an 11% increase in LNG production between 2020 and 2030, with the aim of exporting 88 Mt annually by the end of the decade (Government of Australia, 2022), which manufacture and combustion would cause emissions of about 275 MtCO₂e/year.²

Woodside's Western Australia Scarborough-Pluto project has been deemed a bet against the world implementing the Paris Agreement, with export emissions projected to be upwards of 1.4 GtCO₂e over the life of the project (2021–2056) (Climate Analytics, 2022).

The Northern Territory government is giving the green light to the exploitation of the Beetaloo onshore shale gas field, which could generate 0.8 GtCO₂e of exported emissions over a 20-year period (RepuTex, 2021; The Guardian, 2023a).

The government is increasing subsidies. Forward subsidy estimates have risen by USD 1.3bn between 2022 and 2023 to reach USD 38bn (The Australia Institute, 2023). Gas producers have been incentivised to make extensive use of offsets for production emissions under the government's new Safeguard Mechanism policy.

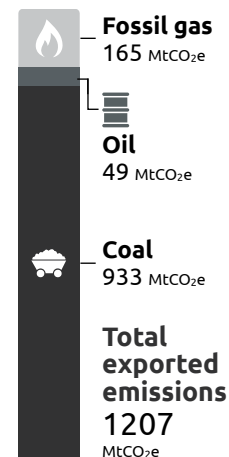
LNG facilities in the country are still not subject to the Petroleum Resource Rent Tax which generated only USD 584m, despite gas companies having accumulated over USD 180bn of tax credits (Australian Financial Review, 2023; RenewEconomy, 2023). By comparison, the Qatari government collects close to USD 20bn in LNG royalties every year (Tax Justice Network Australia, 2017).

The Australian government is advocating for the deployment of CCS infrastructure, citing it as the "single biggest opportunity for emissions reduction in the energy resources sector" (Government of Australia, 2023). The recently-announced 2023–24 budget includes funding to develop a CCS regulatory framework.

The risks associated with this technology are exemplified by Chevron's Gorgon LNG plant, located in Western Australia, the largest functioning CCS facility globally. Despite being in operation for four years, the Gorgon plant has been unable to meet its carbon capture target of injecting 80% of the removed reservoir CO₂ from Gorgon's field underground, and is currently operating at only one-third of its full capacity of 4 MtCO₂e (IEEFA, 2022; ABC News, 2023). In 2021–22, the Gorgon LNG facility reported emissions of 8.3 MtCO₂e.

**Average
emissions
2016 – 2020**

**Domestic
emissions**
543
MtCO₂e excl. LULUCF



Source: CAT (2022) & own calculations based on IEA (2022)

² Using an emission factor of 3.14 tCO₂e/tLNG, see https://climateanalytics.org/media/climateanalytics_scarboroughpluto_dec2021.pdf for details.

4 Avoid distractions that prolong oil and gas production

Many governments currently point to carbon capture and storage, hydrogen and ammonia co-firing and e-fuels as a means of prolonging fossil fuel infrastructure and production. These distractions are counterproductive to the efforts to reduce emissions, as they justify the expansion and continued use of existing fossil fuel infrastructure. These counterproductive activities not only risk prolonged dependencies on fossils, they also require money and time that should be spent on the scale up of sustainable long-term solutions.

4.1 Develop CCS for industrial processes, not as a lifeline for oil and gas

In its role as COP28 President, the UAE has introduced CCS as a “solution” by speaking about a “phase-out of fossil fuel emissions” and not phasing out fossil fuels. This risks diverting attention from the urgent need to reduce oil and gas production and consumption and the need to roughly halve emissions by 2030.

In a sustainable 1.5°C pathway, CCS with fossil fuels does not play a relevant role in the energy sector decarbonisation, as renewable energy is much cheaper in comparison (see (IPCC, 2023b), Figure SPM.7). The use of CCS should be limited to industrial applications where there are fewer options to reduce process emissions.

CCS technologies have yet to be commercially viable and proven at scale, despite large public subsidies for research and development. CCS is expensive and does not get to zero emissions (capture rates and permanence remain an issue), and investing in it risks stranded assets or a lock-in of carbon-intensive infrastructure. It may also divert funds that could be otherwise allocated to renewable energy projects.

The list below shows some of the countries that are most heavily investing in CCS technologies.



WRONG DIRECTION

- ▶ As COP president, the **UAE** is currently pushing for CCS as a tool to cut emissions from oil and gas production, rather than replacing fossil fuel with renewable energy. This is currently not a credible claim, as the UAE currently plans to sequester up to 5 MtCO₂e per year by 2030 (Reuters, 2023b), which is only around 2% of its current emissions and only 1% of its exported emissions.
- ▶ **The US** Inflation Reduction Act (IRA) significantly expands tax credits for carbon capture, utilisation and sequestration.
- ▶ **Canada** uses CCS technologies in the oil and gas sector as part of enhanced oil recovery. The only commercial CCS abated coal-fired power plant in operation is in Canada - which has been wrought with problems. The technology continues to receive government support.
- ▶ **The UK** government sees CCS as a key technology for emissions reduction, recently providing GBP 20bn of funding for CCS, not also for industry where CCS is the only option to decarbonise some processes, but also for hydrogen production and power generation.
- ▶ **Australia** has been promoting CCS technologies as a means to continue investing in fossil fuel extraction. The 2022–23 federal budget also included funding for feasibility studies into CCS for four different gas fields. However, the only operating CCS project, the Gorgon gas project in Western Australia, has encountered numerous problems, resulting in capturing less carbon than contractually agreed, and commencing years later than planned, as emissions from the project continue to rise.
- ▶ **Saudi Arabia** is betting on CCS to reach its 2030 and net zero climate targets and continue its massive oil production and export.

Several governments are now promoting the use of fuels made from renewable electricity to replace fossil fuels in existing infrastructure in the future. This includes co-firing ammonia in coal-fired powerplants, blending hydrogen in fossil gas networks or using e-fuels for cars.

Fuels from renewable sources can be useful for applications where a direct use of electricity is not possible, such as steel production, aviation or shipping.

But wherever electricity can be used directly, the use of fuels from renewable sources is a distraction: such fuels are and will continue to be very expensive, as they have to be produced at significant energy loss from still very scarce electricity from renewable sources. For all these cases, it is more efficient to use the electricity directly—by a factor 3 to 6: electricity from renewables directly instead of co-firing coal-fired power plants, heat pumps instead of gas boilers co-fired with hydrogen and electric cars instead of fossil cars with blended e-fuels.

Yet many governments and lobby groups are displaying such renewable fuels as the solution for these applications in the future, which would allow building new coal-fired power plants, installing new gas boilers and selling fossil fuel cars. If these "green fuels" turn out not to be commercially or technically feasible, this infrastructure will use fossil fuels.

Examples of this behaviour include:



WRONG DIRECTION

- ▶ **The EU**, due to pressure from Germany, will introduce a new category of cars that can only be run with e-fuels using a conventional combustion engine. Such cars will be allowed under the zero emissions standard for new cars that is applicable as of 2035.
- ▶ **Germany** is discussing whether "hydrogen ready" gas heating systems can be installed to comply with a rule that any new heating system needs to use 65% of renewable energy. 65% hydrogen is not possible with co-firing, as conventional gas heaters would not be able to cope with that. Therefore, a shift to such levels of hydrogen would only be possible if all heaters in the distribution system were changed. It is highly unlikely that this would happen as hydrogen will remain very expensive and inefficient compared to using electricity with a heat pump.
- ▶ **Indonesia** is banking on co-firing ammonia from renewable sources in coal-fired power plants in its long-term strategy. It is highly unlikely that such levels of ammonia will be available at competitive prices compared to new wind and solar.
- ▶ **Japan** keeps pushing for so-called "clean coal" technologies. The government recently unveiled plans to develop ammonia and hydrogen co-firing as tools to curb emissions in coal-fired power plants. It also plans to promote these technologies in electricity sectors of ASEAN countries, through the Asia Zero Emissions Community (AZEC) initiative.

5 Status of national policy making for renewable electricity

In parallel to phasing out fossil fuels, renewable energy needs to expand quickly and rapidly, across all countries, to limit global temperature increase to 1.5°C. Ensuring global access to clean energy and an increased electrification of end uses will continue to increase electricity demand. A rapid expansion in the share of renewable energy in the power sector is therefore essential. This section analyses the state of policy making in three areas needed to meet this increase:

- ▶ Set national targets for renewable electricity,
- ▶ Create favourable conditions for renewable electricity generation, and
- ▶ Phase out coal-power electricity generation.

We do not look at a decrease in gas-fired electricity generation, other energy carriers beyond electricity or replacing fossil fuels for non-energy use, but emphasise that those areas need to largely decarbonise as well by the middle of the century.

5.1 Set national targets for renewable electricity

Strong targets for renewable electricity are needed to set a clear signal to investors, indicating what the country aims to achieve. They provide certainty for the market to invest in renewable energy, particularly if written into law. Renewable electricity targets are a very common tool: 135 countries have a national renewable energy target (REN21, 2022). The level of ambition however varies.

The conversation about a global renewable energy target is gaining significant traction in the run up of COP28. Different government representatives have recently called for such a target, including the president of the European Commission von der Leyen and the German Foreign Minister Baerbock.

In April 2023, the G7 committed to a joint target of more than 1 TW of solar PV and 0.15 TW of offshore wind installed cumulatively by 2030. This target is symbolic more than anything: the IEA's 2022 World Energy Outlook projected similar levels of capacity in the G7 countries under already stated policies.³ The IEA already expects 0.44 TW of additional renewable energy capacity for 2023, a new record high (International Energy Agency (IEA), 2023).

Various studies analyse the global renewable expansion required under 1.5°C compatible scenarios:

- ▶ The IEA "Credible Pathway" scenario shows that renewable capacity additions need to more than triple by 2030 compared to 2022 levels—and reach around 1.2 TW per year by then (IEA, 2023b). These numbers are higher than the earlier IEA publication "Net Zero by 2050" (IEA, 2021b) and in line with its 2022 World Energy Outlook.
- ▶ According to IRENA's World Energy Transitions Outlook, roughly 1 TW (975 GW) of yearly renewable capacity additions are needed from 2023 to 2030 (IRENA, 2023). Given that the capacity additions ramp up from 295 GW in 2022 according to the report, this means that the installation in 2030 would be significantly beyond 1 TW.
- ▶ In 2021, the Energy Transitions Commission stated that solar and wind capacity jointly need to reach 41 to 51 TW by 2050 (ETC, 2021), meaning that solar and wind capacity needs to expand by 1.4 to 1.7 TW per year on average until then.

Most of these scenarios include a significant expansion of biomass and nuclear, and would require substantial carbon removal in the latter half of the century. Limiting reliance on those options – which all come with financial, social and ecological risks – and meeting currently projected electricity demand would require renewable capacity additions significantly above 1 TW per year to achieve a sustainable, 1.5°C compatible energy transition.

3 Own calculations based on the IEA's 2022 WEO



POSITIVE ACTION

- ▶ **Chile's** long-term climate strategy submitted to the UNFCCC at COP26 set ambitious renewable energy targets. Chile currently aims to achieve 80% renewable electricity by 2030 and 100% by 2050.
- ▶ In its Net Zero Strategy, **the UK** committed to achieving 100% clean electricity by 2035, subject to security of supply. The UK is currently targeting 50 GW of offshore wind by 2030, and 70 GW of solar by 2035.
- ▶ Renewable energy plays an increasing role in **China's** long-term "post-coal" strategy. Despite continuing to rely heavily on fossil fuels in parallel, China aims to build 1,200 GW of wind and solar power by 2030, and under current policies it is expected to greatly exceed this target.
- ▶ Under its National Electricity Plan, **India** is planning to add considerable solar and wind capacity, 333 GW and 134 GW respectively by 2031-2032.
- ▶ **Germany** has increased its renewable energy target to 80% of electricity generation by 2030, or 360 GW by 2030 and 630 GW by 2050.



WRONG DIRECTION

- ▶ **South Korea** dropped its 100% renewable energy target after a change in government. Instead, it now sees a stronger role for nuclear. Although nuclear electricity generation does not emit CO₂, the CAT doesn't see nuclear as the solution to the climate crisis due to high and increasing costs (compared to alternatives such as renewables), long construction times, incompatibility with a flexible supply of electricity from wind and solar, its vulnerability to heat waves and risks related to nuclear accidents and proliferation.

5.2 Create favourable conditions for renewable electricity

The type and amount of policy support for renewables depends heavily on the maturity of the market and country-specific circumstances: prices for renewable electricity technologies and battery storage have decreased substantially over the last decade, and in many cases are already cost-competitive.

Yet, this is not the case everywhere, and subsidies for fossil fuels or high financing costs may still result in a low financial attractiveness of renewable electricity investments. Access to technologies, lack of capacities and finance coupled with underdeveloped electricity grids remain a barrier, particularly in developing countries.

Despite this, the share of renewable electricity is rapidly picking up, including in many developing countries. 156 countries already have some sort of regulation in place to favour the uptake of renewable electricity (REN21, 2022).



POSITIVE ACTION

- ▶ **China** has been able to phase out renewable energy subsidies to a large extent, given its mature market for renewable energy technologies. China got to this point after many years of dedicated financial support and direct investments in the renewable energy industry, including in supply chains.
- ▶ **Viet Nam's** feed-in tariff launched the development of solar and wind in the country, leading to a very dynamic growth over the past years.
- ▶ **Australia** has an integrated approach for renewable electricity and battery storage, and it has dedicated a large share of its "Rewiring the Nation" programme to transformational transmission projects in the 2023–2024 budget.
- ▶ **Germany's** financial support scheme for renewable energy has been adjusted many times over the past years. The most recent update of the renewable energy law in 2023 includes targeted financial support and a removal of bureaucratic barriers to ensure renewable energy investments remain attractive – even without a high amount of financial support.
- ▶ **India** is supporting the development of its renewable and green hydrogen industries. State governments often allocate land specifically for renewable energy projects and some have established single-window clearance mechanisms for renewable energy projects. Renewable energy projects, particularly solar and wind, receive expedited approvals to accelerate their development, including environmental clearance.



WRONG DIRECTION

- ▶ **The UAE's** 2050 energy strategy sets aside a budget for clean energy sources, which would also be used to fund gas-based power and so-called "clean coal".
- ▶ **Argentina's** plans for tendering transmission lines to locations with large renewable energy potential have been on hold for four years.
- ▶ **The UK:** after a promising start of a process around a smart and secure energy system and storage deployment, the government seems to have dropped the ball and it remains unclear where the responsibilities lie to pick up the topic.
- ▶ Many governments still provide much more in subsidies to fossil fuel production compared to renewable energy subsidies, distorting the market and reducing the effectiveness of policies to support renewable energies – this is the case in **Turkey, India, Singapore** and many more countries.

5.3 Phase-out targets for coal-fired electricity generation and/or moratoriums on new coal plants

Phasing out fossil fuels from the electricity sector, and particularly coal as the most emissions intensive energy carrier, needs to happen in parallel to the phase-in of renewable electricity. Coal-fired power generation needs to be phased out globally by 2040. Some countries have already phased out coal, and many more have committed to doing so, with different phase-out years. It is promising to see that even countries that are largely dependent on coal are starting to discuss or implement at least moratoriums on new coal plants.



POSITIVE ACTION

- ▶ Many countries have committed to a coal phase out, including countries from the Global South, for example **Chile**.
- ▶ A number of coal-dependent countries have banned new coal-fired power plants, such as the **Philippines** and **Morocco**. According to news articles, India is discussing such a moratorium (Reuters, 2023b). These moratoriums are an important signal that the energy system will move away from coal, even if they are still far away from a 1.5°C compatible phase-out plan.
- ▶ **The UK** signed up to the coal exit pledge at COP26 and aims to phase out coal in the power sector by 2024. In 2021, coal provided only 2% of electricity generation, compared to 40% a decade ago.
- ▶ **Canada** co-founded the Powering Past Coal Alliance. It has had a regulatory system in place to phase out unabated coal power by 2030 and is on track to achieve this phase-out.
- ▶ The EU ETS is expected to drive coal out of electricity markets in **EU** countries, for example in Germany (Herpich et al., 2023).



WRONG DIRECTION

- ▶ Too many countries are still expanding their coal capacity. This includes the following ones: **China** (with 126 GW in the pipeline), **India** (60 GW pipeline) and **Turkey** (11 GW pipeline) (Global Energy Monitor et al., 2023).
- ▶ **Japan** remains the only G7 country planning to build new coal power plants. It also keeps pushing for so called “clean coal” technologies. The government recently unveiled plans to develop CCS technologies, and ammonia and hydrogen co-firing as tools to curb emissions in coal-fired power plants. It also plans to promote these technologies in ASEAN countries, through the Asia Zero Emissions Community (AZEC) initiative (also see section 3 on “avoiding distractions”).
- ▶ **South Korea** endorsed the coal exit at COP26. However, the Ninth Electricity Plan shows that coal will not be phased out until 2054, with 27 GW of coal capacity still online in 2034.

6 Conclusions – main gaps and government priorities for this year

The global community needs to give the right signals to ensure a phase-out of all fossil fuels, including oil and fossil gas—not just coal, while increasing access to clean energy and electrifying most of energy end uses. This is a massive challenge that governments need to tackle with urgency.

Our briefing finds that oil and gas production is still very much a priority in many countries. Oil and gas companies make record profits in the light of a global energy crisis that pushes developing countries into energy poverty and worsens the food crisis. It is the responsibility of those countries with higher capabilities and responsibilities to lead the way in mitigating climate change and initiating a full fossil fuel phase-out.

Yet the US, one of the richest countries and largest emitters historically, is the largest producer of oil and gas today, and shows no signs of phasing out production. We find other countries, such as Norway and Australia, clinging to fossil fuels to further build their riches, as temperatures continue to increase globally.

The UAE, in its role as the COP28 president, is attempting to water down a potential fossil fuel phase-out target. With a “fossil emissions phase-out” rather than a “fossil fuel phase-out”, it aims to allow for continued oil and gas use, combined with carbon capture and storage, risking continued dependence on fossil infrastructure and exceeding net-zero CO₂ by 2050.

In comparison to these counterproductive efforts, the support for renewable electricity remains largely insufficient to make up for the rapid growth of electricity demand—despite positive developments globally. Renewable financing costs and the availability of local supply chains vary drastically across countries, which often leads to a slower uptake despite significant technical potentials, such as high solar irradiation or wind speed.

A global target for renewable energy capacity additions, coupled with an objective to phase out fossil fuels, could help focus and accelerate the positive developments—but it needs to be sufficiently ambitious and all governments need to feel responsible to contribute to it, including through making finance and technologies available to countries in need of support. The targets that have been agreed so far, for example in the G7, are far from sufficient to incentivise the required shifts.

Our review of existing analysis finds that significantly more than 1 TW of renewable electricity capacity needs to be added each year over the next decades globally. Given that 0.44 TW of renewable capacity is likely to be added in 2023, a target well above 1 TW is now within reach.

To make this year count, government priorities to phase out oil and gas production and phase in renewable electricity should be to:

- ▶ Work towards an immediate commitment to end new oil and gas exploration and production—in all countries.
- ▶ Set end dates for all oil and gas production, with developed countries leading the way.
- ▶ Push against the notion of a “fossil emissions phase-out” and “clean coal”. Such counterproductive activities serve fossil fuel companies and some countries’ budgets in the near term, not climate change mitigation and a just energy transition.
- ▶ Push for a fast build-up of renewable energy globally. In addition to working towards a global target, this requires comprehensive national action, with policies needed to reduce barriers to renewable energy uptake, and international support.

We have used standard emissions factors for all oil, gas and coal exports in Australia, the UAE, the US and Norway to give an order of magnitude of these emissions. Precise emissions factors vary on a country-by-country basis.

The data used to estimate countries' domestic emissions for the period 2016–2020 was taken from the latest 2022 CAT country assessments (Climate Action Tracker, 2022a). It covers national economy-wide GHG emissions excluding LULUCF and is presented in AR4 GWPs.

The data used to estimate countries' exported emissions comes from two sources:

- ▶ Fossil fuel exports data is taken from the 2022 IEA World Energy Balances (IEA, 2022).
- ▶ Fossil fuel emission factors data is taken from the IPCC emissions factors database (IPCC, 2023a).

The data from the IPCC shows the amount of carbon per energy unit for crude oil, natural gas and coal. This is converted to CO₂ values by adding the atomic mass of oxygen to the value for carbon.

The total emissions of exported fossil fuels is calculated assuming 100% combustion and release of the carbon contained in it, which only provides a rough estimate of real exported emissions.



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CAT Consortium



The Climate Action Tracker (CAT) is an independent scientific analysis produced by two 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.

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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.

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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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