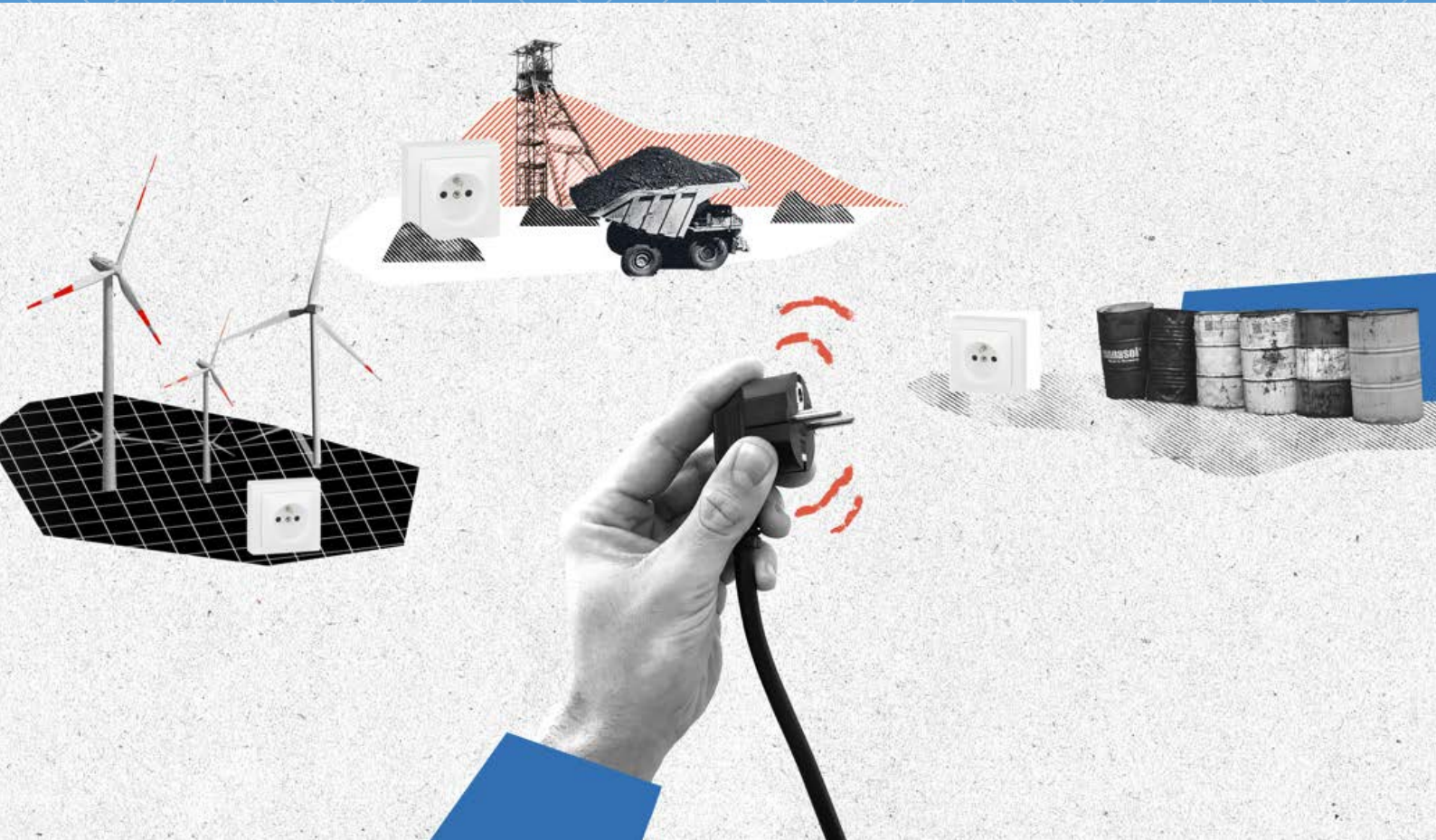


OCTOBER 2024



OVERCOMING OIL DEPENDENCE

Managing the economic risks of the
global energy transition for oil- and
gas-exporting countries



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OVERVIEW AND KEY MESSAGES

- The global energy transition will drive down demand for fossil fuels, and will lead to lower prices for oil and gas. This presents challenges for countries whose economies depend on oil and gas exports.
- According to an analysis by Carbon Tracker, there are nine countries where government revenues could fall by more than 40% under a moderate-paced energy transition, and a further ten countries where government revenues could fall by more than 20%. This would have a severe impact on public services, public sector salaries, and the wider economy.
- The Natural Resource Governance Institute finds that a quarter of national oil companies' new investments over the next decade - which are funded by public budgets - could become unprofitable in a moderate-paced transition.
- Contracts with international oil companies are often structured so as to front-load payments to the companies, while the governments see significant revenue only much later. The effect of this is that governments face the risks of the transition, while company profits are secured.
- Oil and gas expansion commonly lead to deepening international indebtedness; if oil and gas projects become stranded assets, they will not be able to help service the debts. These risks are especially great in countries that become new producers of oil and gas.
- To manage these risks, governments of oil- and gas-dependent countries urgently need to diversify their economies and broaden their sources of revenue. Civil society can help build democratic visions for the post-oil economy.
- Governments and civil society can press internationally for a fair transition away from fossil fuels, in which less-dependent countries phase out faster, and richer countries provide international support and resources where needed to enable just transitions.

ABOUT THIS DOCUMENT

The world's energy markets are going through a profound transformation, driven by the need to reduce greenhouse gas emissions. As global fossil fuel demand decreases, economies that rely on oil and gas exports will face major challenges.

This briefing aims to provide an introduction to these challenges, and what governments can do to address them. It summarises research by Carbon Tracker, the Natural Resource Governance Institute (NRGI), the Civil Society Equity Review, and others.

THE CONTEXT: LOWER OIL AND GAS DEMAND, LOWER PRICES DURING ENERGY TRANSITION

Many governments have pledged to reach net-zero emissions by mid-century. If they achieve their pledges, global consumption of oil would fall from present levels by 45% by 2050, pushing the oil price down to \$60 per barrel in real terms (compared to recent prices of about \$85), according to projections by the [International Energy Agency](#) (IEA). If governments go further and achieve the Paris Agreement goal of limiting warming to 1.5°C, oil consumption would fall by 78% by 2050, and the price would drop to \$42 by 2030 and \$25 by 2050.

The rapid growth of electric vehicles is already eating into oil demand from cars, while wind and solar are taking away demand for gas in power generation. As a result, even if governments adopt no new climate policies and fail to implement their net zero pledges, the IEA forecasts that global oil and gas consumption will peak during the 2020s, followed by slow decline. [BP](#) and [ExxonMobil](#) also forecast a peak in oil consumption during the 2020s,

then either a decline or a plateau after 2030. This would mark a new era. Since the start of the modern oil industry in the mid-nineteenth century, global consumption has consistently increased, with the exception of a few temporary declines during major economic recessions. The dynamics of a [post-peak](#) market are quite different - governed by [abundance rather than scarcity](#) - and can lead to significantly lower prices.

The [Organisation of the Petroleum Exporting Countries](#) (OPEC) and the [US Energy Information Administration](#) (EIA) hold a more bullish view of oil's future, projecting continued steady growth in consumption until 2050, if no new policies are adopted. In any case, the future of oil and gas markets is now highly uncertain. And since governments agreed in COP28 in Dubai to ["transition away from fossil fuels in energy systems"](#), we can expect new policies to drive demand downward.

THE PROBLEM: RISKS TO GOVERNMENT BUDGETS IN OIL-DEPENDENT COUNTRIES

These changes will have a major impact on the economies of countries that depend on oil and gas exports. According to research by [Carbon Tracker](#), there are 28 countries where oil and gas provide over 20% of government revenues; in 14 of these countries, it is more than 50%. These revenues are used to pay public sector salaries, to provide public services such as health and education, and to invest in infrastructure and in new industries.

The oil price crash due to Covid-19 in 2020 gave a taste of what an unplanned transition could look like. For example, **Iraq's** fiscal deficit in 2020 reached [15% of GDP](#). As the country depleted its financial reserves, it was repeatedly [unable to pay](#) monthly public sector salaries, the population's most important income source. At the same time, [devaluation](#) of the dinar drove up the price of food and other essentials. The crisis pushed 4.5 million Iraqis below the [poverty line](#), and nearly doubled the child poverty rate to 38%.

While the effect of the pandemic was temporary, we now face a future where these pressures are structural and long-term. Unlike the pandemic, governments can and should know that the energy transition is coming, and they can adapt their economies accordingly.

The transition will have both a price effect and a volume effect on government budgets. Lower oil and gas prices will reduce the amount of government revenue per barrel produced. And lower overall volumes of production means fewer barrels.

Countries vary widely in how much it costs to extract oil: it is generally cheap where the geology is simple and the volumes large, but more expensive where fields are technically difficult and require expensive equipment

(such as in deep ocean), or where the industry is inefficiently managed. High-cost producers such as **Timor Leste** and **Mexico** will experience the price effect most intensely because their margins are smaller, and so will be squeezed more by lower prices. At the same time, they will face a volume effect: some high-cost projects will become unviable with reduced global demand, with the result that these producers also see a faster reduction in the volume they produce.

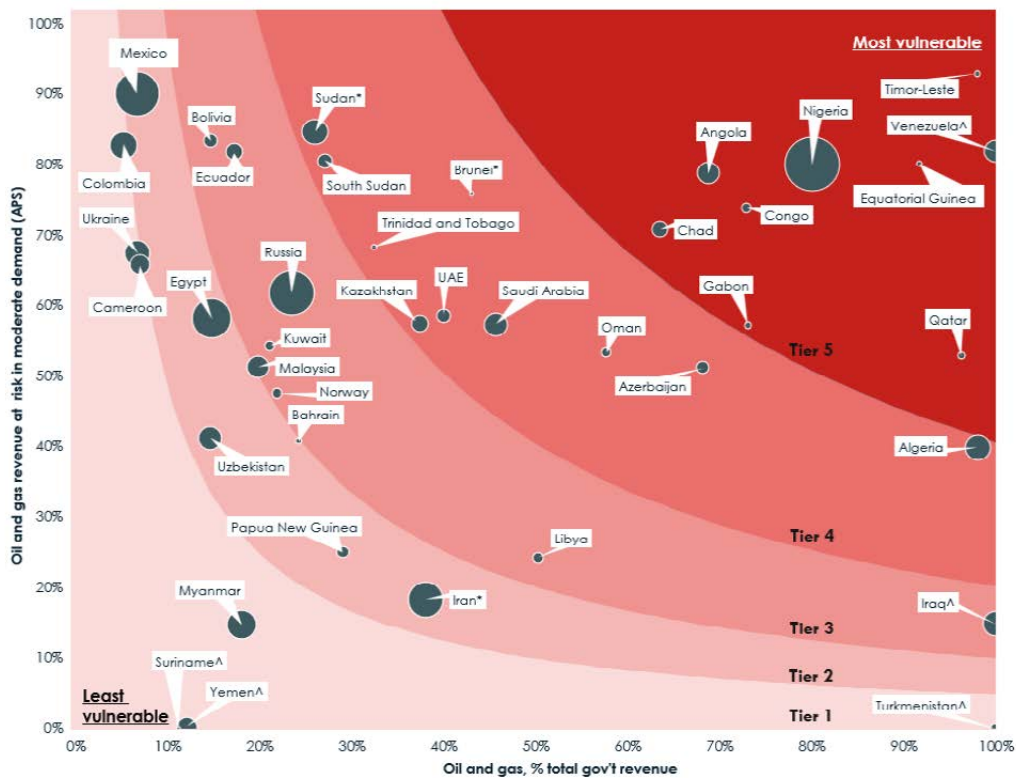
However, it would be wrong to think that lower-cost producers will be unaffected. Low-cost producers like **Kuwait** and **Iraq** will experience less of a volume effect (apart from OPEC quota restrictions), as their production will remain competitive, and indeed is likely to become a larger share of total world supply. However, while this fact has led to complacency by some governments, the reality is that as global oil prices fall, the price effect will cut government revenue, as happened in Iraq during covid-19. Countries will be especially vulnerable if oil and gas provide a large share of government revenue or of exports.

[Carbon Tracker](#) estimates the impact of the energy transition on government budgets in oil-dependent countries, in a moderate-paced transition, where governments achieve their net-zero pledges, and global temperatures stabilise at 1.7°C above pre-industrial levels. This is shown in Figure 1. The vertical axis shows the projected impact of this moderate-paced transition on countries' oil and gas revenues, while the horizontal axis shows the extent to which state budgets depend on those revenues. By multiplying these two values, we can determine the proportion by which government revenues would decrease.

Nine countries are in the most vulnerable tier, whose total government revenues would fall by more than 40%. For example, in **Nigeria**, oil and gas revenues, which Carbon Tracker estimates provide about 80% of government revenue, are

set to decrease by 80% under the moderate-paced transition, leading to a 64% fall in total government revenue. A further ten countries are in the second tier, whose total revenues would fall by more than 20%.

Figure 1: Vulnerability of government revenues to reduced oil and gas demand resulting from a moderate-paced energy transition



<https://carbontracker.org/reports/petrostates-of-decline/>

Even some countries that score lower on Carbon Tracker’s vulnerability index will face economic challenges. For example, in **Iraq** and **Turkmenistan**, oil and gas revenues provide almost the entirety of government budgets. Over the long term, such countries will have to restructure their entire economies.

Far from acknowledging these risks, many governments are **doubling down** on fossil fuel production, leaving their economies exposed to even greater risks. **Nigeria** plans to dramatically

increase its gas extraction, declaring the 2020s the “decade of gas”. While **Mexico**’s oil and gas extraction has been in long-term decline, the government hopes to reverse this with large new investments and subsidies. As **Kazakhstan**’s supergiant fields peak and decline, the government hopes to boost extraction from mature fields (long-exploited reserves whose output is starting to decrease), to open new sites, and to continue unconventional extraction methods, using techniques such as hydraulic fracturing for shale oil and gas.

STRANDED ASSETS, DEEPENING DEBTS

If oil and gas prices fall, costlier projects can become stranded assets, meaning that investments in oil and gas fields lead to financial losses for investors and governments.

In many oil-producing countries, state-owned national oil companies (NOCs) play a major role in production. [NRGI analysis](#) finds that based on current price expectations, NOCs are set to invest USD 1.8 trillion in new oil fields over the next ten years. However, a quarter of this investment will be unprofitable in the moderate transition scenario described above, where governments achieve their net zero pledges. These risks threaten some NOCs' financial viability, which in turn can have knock-on effects on their countries, given NOCs' institutional roles in funding, supporting and delivering on their states' development agendas.

In some cases, poor NOC financial performance can impact the state more widely. **Mexico's** Pemex is the [world's most indebted oil company](#), with over USD 100 billion in debts, about 8% of the country's GDP. After several bailouts, the company debt is contributing to sovereign debt, and was one reason credit rating agency Moody's downgraded Mexico in 2022, increasing the cost of borrowing and debt servicing. (the total amount the country must pay each year to repay its debt).

A few NOCs [acknowledge](#) these risks. For example, **Indonesia's** Pertamina has noted that the company "is projected to lose around 50 percent of its revenue by 2030 if the Company does not immediately respond by developing other sources of revenue besides fossil-based energy." Other NOCs have yet to recognise the risks. For instance, the **Nigeria** National Petroleum Company and the **Ghana** National Petroleum Corporation have not acknowledged the global transition in their official publications such as annual reports.

A particular danger is that financing the development of new oil and gas extraction projects may deepen countries' international indebtedness. The International Monetary Fund reports that giant discoveries of oil and gas tend to lead to [permanently higher government debt](#), and often episodes of debt distress. A study by the [Overseas Development Institute](#) reveals a cycle where debt increases when oil and gas prices are high (because higher credit ratings increase their borrowing capacity) and also increases when oil and gas prices are low (because government budgets become stretched).

GOVERNMENTS CARRY THE RISKS

The energy transition will, of course, unfold over time. In the very short term, the economic risks are relatively modest. Further into the future, the risks become more serious, as demand may have decreased more substantially by the mid-2030s, for example.

A common practice in many oil and gas contracts is to [frontload payments](#) to international companies, while delaying revenue for the governments. This means that companies recoup their investments and receive profits during the early period of a project, when the transition risks are smaller. Meanwhile,

by the time the government is due to receive significant revenues, the transition will be well under way, meaning that governments carry that risk.

For example, while some of the world's largest gas discoveries occurred in **Mozambique** in 2010, leading to first production in 2023, the government will not see significant revenues until the [mid-2030s](#). Analysis by [OpenOil](#) finds that revenue flows are so heavily backloaded that the stake in the gas projects of ENH, Mozambique's NOC, is effectively worthless, and may even be a liability. Meanwhile, Mozambique's [government debt](#) expanded from 37% of gross national income in 2012 to 99% in 2022.

Contracts tend to be most unbalanced for countries that are new to oil and gas production. The reason is that without an existing industry, their bargaining power is weaker in negotiations with companies; at the same time, they have not yet developed the experience of oil and gas economics, nor the expertise in the technical details of contracts.

Countries that newly seek to become oil and gas producers hope that oil and gas revenues can boost their economies and drive development. But as the global energy transition proceeds, these countries may instead find themselves with stranded assets and costly liabilities, locked into international debts. One [lesson](#) from studies of the "[resource curse](#)" is that countries achieve better economic outcomes when they proceed slowly with oil and gas development, giving them time to build local supply chains and workforces to earn from the industry, and institutions to oversee the process and manage the revenues. Unfortunately, the global energy transition means that countries do not have this time, and are less likely to capture benefits from extraction.

For example, **Senegal** hopes to benefit from exports of both oil and liquefied natural gas (LNG), but this comes [at a time](#) when the world has a glut of LNG production, and constraints on future oil and gas demand. The country has started a process of [reviewing its contracts](#) with international oil companies, over fears that they gave away too much of the benefits to the companies.

SOLUTIONS AT HOME: ECONOMIC DIVERSIFICATION

In order to reduce their exposure to the economic risks of the energy transition, governments should urgently seek to diversify their economies away from oil and gas. The process will take time: many oil producers have sought to diversify their economies since the 1970s or earlier, but [progress has been slow](#). Many are caught in a vicious circle, as the more oil-dependent an economy, the more structural barriers it faces to reducing that dependence. The clear implication is that governments of very dependent economies should start actively diversifying as soon as possible, in order to avoid the social and economic harms of a rushed transition.

There are two main dimensions of diversification. First, governments will need to support the growth of other sectors, to reduce oil and gas' relative role in the wider economy. Second, they will need to build alternative sources of fiscal revenue, to progressively replace oil and gas revenue.

One general lesson from past diversifications is that success requires a concerted industrial strategy on the part of the government. This means identifying the country's strengths, weaknesses and potential, creating a vision for the future of the economy, and investing in a targeted way to remove barriers and enable this economic transition.

For example, **Dubai**'s government successfully moved the emirate away from oil dependence, with a [concerted strategy](#) based on identifying that its historic merchant culture and geographical location at the entrance to the Persian Gulf gave it structural advantages to become a trade logistics hub. As trade expanded the economy, Dubai then built up the high value-added sectors of finance, property and tourism.

Indonesia is another success story. In response to the oil price crash of 1985, the government implemented economic reforms with the aim of boosting the alternative sectors of labour-intensive manufacturing and agribusiness. Like in Dubai, the state played a driving role, both by [investing oil revenues](#) in infrastructure, education and new industries and by [enabling exports](#) through greater integration in the regional and global economy.

Naturally, industrial strategy must be informed by strong technical analysis of what is viable, and its likely economic prospects. However, diversification plans to date have often been developed with the International Monetary Fund, donor governments, and private international consultancies. One consequence of this has been that economic plans have generally been high-level and technocratic, with little engagement with the wider public. This has weakened the mandate for such plans, creating no political pressure for continued momentum when government attention drifts elsewhere. One solution to this can be to build domestic expertise and technical advice, such as in economics departments of local universities. Another is to combine the technical aspect with a democratic one: to build publicly-owned visions of the future of the economy after oil.

For example, in **Colombia**, civil society organisations led by [NRGI](#) have articulated a consensus narrative on their vision for the country's post-oil economic future. In **Nigeria**, a collaboration of [Environment Rights Action and the Nigerian Labour Congress](#) conducted a survey in select parts of the oil-producing region, to gather some communities' views on the future economy.

Oil generates revenues on a much greater scale than any other sector (except some forms of finance). Therefore, the task of diversification is not as simple as substituting oil extraction with some other sector that generates the same revenue: it entails a more fundamental economic transformation into a broader-based set of sectors. In particular, governments will need to develop sources of revenue other than oil, such as excise duties (taxes on specific goods like alcohol or tobacco), value-added taxes (VAT), income taxes and business taxes. The base for income and business taxes will grow as the economy diversifies. Since oil-dependent states commonly exhibit both inequality and energy over-consumption, [wealth taxes](#) and [taxes on energy consumption](#) may both be possibilities.

There are [various additional actions](#) governments can take to support diversification efforts. Reforming fossil fuel subsidies can give governments more fiscal flexibility, and reduce the incentives that tie the economy to fossil fuels. Use of a sovereign wealth fund can provide more consistency of revenues through the transition. And at the same time, governments can stop deepening the problem, by avoiding risky new investments in oil and gas, and reviewing whether contracts fairly allocate the economic risks of the energy transition.

SOLUTIONS INTERNATIONALLY: A FAIR PHASEOUT

It is agreed in the [UN Framework Convention on Climate Change](#) and in the [Paris Agreement](#), that countries should act at different paces on climate change, to reflect their differing circumstances, to support sustainable development, and in accordance with their common but differentiated responsibilities and respective capabilities. One step the governments of oil-dependent economies in the Global South can take, is to argue for a fair international process of fossil fuel phaseout that reflects these differences.

The energy transition will have a much greater effect on countries that depend heavily on fossil fuel extraction – for government revenues, for jobs and/or for energy supplies – than those with more diversified economies. It is therefore reasonable that those more dependent countries should be given more time to phase out fossil fuels, and should be given international support, including finance, technological transfer and capacity-building.

Supported by over 200 organisations, the [Civil Society Equity Review](#) (CSER) assesses how fast countries would need to phase out their extraction to limit warming to 1.5°C, if they are given more or less time in proportion to their dependence. It finds that the least-dependent

countries – including the UK, United States and Canada – would need to end their extraction of oil and gas soon after 2030. This rapid phaseout would leave carbon budget for where it is most needed, allowing the most dependent countries such as **Iraq**, **Congo** and **Angola** until the late 2040s to end extraction. This is still a challenging timeframe, but is the latest date consistent with the 1.5°C limit.

Some Southern countries with lower levels of economic dependence would also need phase out extraction relatively quickly, such as **Egypt** by 2035 for oil and 2039 for gas, and **Colombia** by 2035 and 2033 respectively. Given these countries' development needs, phasing out oil and gas extraction will not be a priority for scarce public resources: it will only be possible with adequate international support.

Figure 2 below shows what year (horizontal axis) different countries would need to end their oil and gas extraction, according to these principles. The horizontal blue line shows global average per-capita capacity: countries above this line would provide international support (with their share of that provision in brackets); countries below the line would be recipients of support.

Figure 2: Phase-out years for oil-extracting countries plotted against their per-capita capacity, and provision of support: countries above the horizontal blue line provide support; those below receive support.

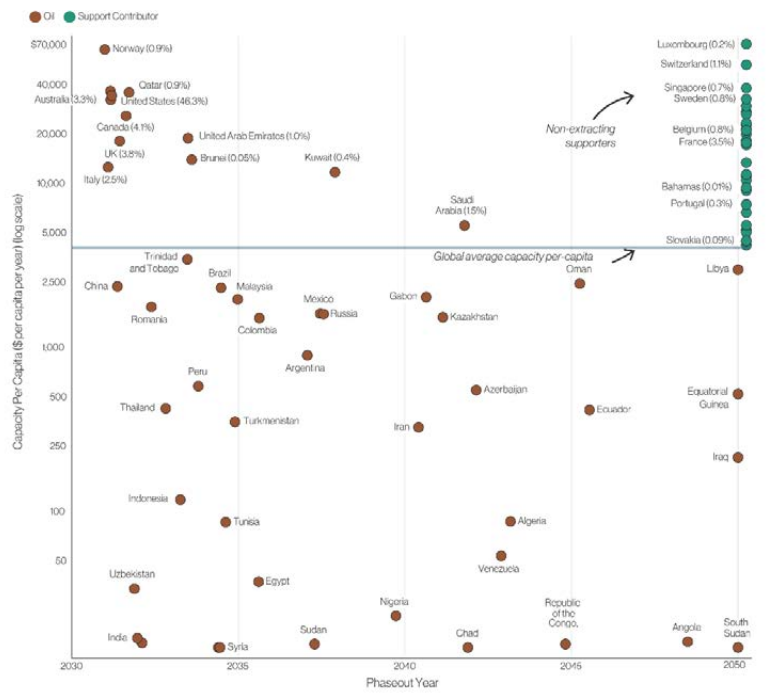


Figure ES-1: Phase-out years for oil-extracting countries plotted against their capacity, and provision of support.
 The horizontal blue line, set at global average per-capita capacity, delineates countries eligible to receive support for their oil extraction phaseout (below the line) from those that are expected to contribute to this support. For the latter, the numbers in parentheses indicate the share of the global support they should provide. Support contributors listed on the right edge of the chart (green dots) do not have their own oil extraction to phase out; only some are identified with labels. Countries shown here are those included in the Statistical Review of World Energy, which contains some data gaps that will be closed in subsequent releases of this analysis.

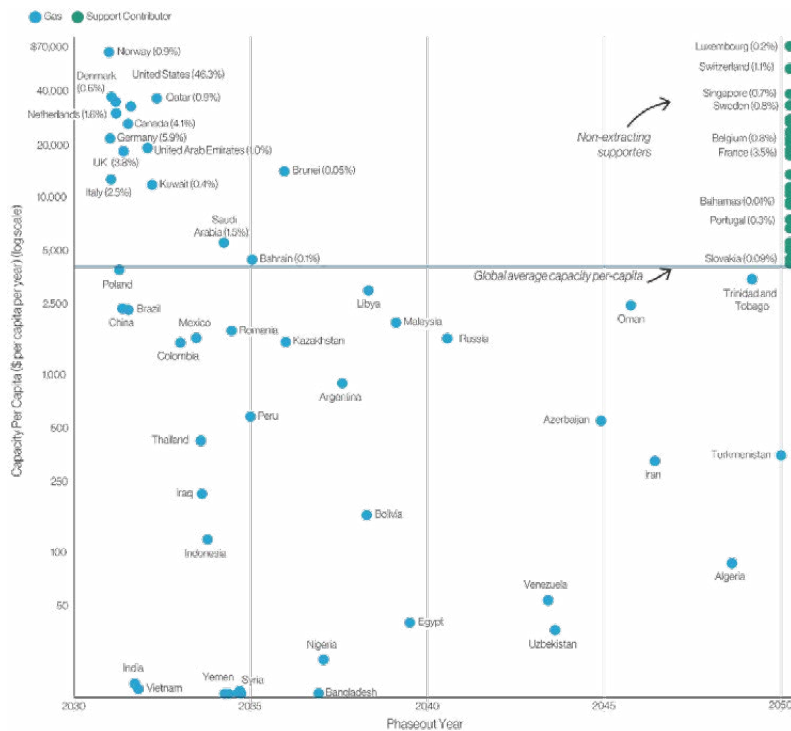


Figure ES-3: Phase-out years for gas-extracting countries plotted against their capacity, and provision of support.
 See caption of Figure ES-1 for further details.

In addition to making the case for a fair phaseout in diplomatic fora, governments can quantify the cost of their phaseout, in order to seek international finance. For example, in September 2024, **Colombia** announced a USD 40 billion [investment plan](#) to help it transition away from fossil fuels and adapt to climate change. Such costings and plans can form

the basis for [country platforms](#), a model for development cooperation that is attracting increasing interest. Governments could also commit to reducing extraction conditional on receiving sufficient finance, such as in their [Nationally Determined Contribution](#) under the Paris Agreement.

HOW PWYP CAN ENGAGE IN THIS ISSUE

This briefing has outlined the serious risks to economic development in oil- and gas-dependent countries. There is an urgent need for those countries to diversify their economies, and an opportunity to advocate for a globally fair transition away from fossil fuels.

As a network, we are increasingly engaged in tackling these issues, by pressing for governments to wean their economies off fossil fuels, while ensuring that no-one is left behind.

PWYP members can take action in numerous ways, such as by communicating in their countries about the economic risks of oil and gas, warning against moves that would deepen dependence on fossil fuels, advocating for contract reform that shares the energy transition risks fairly between government and companies, promoting economic diversification and conducting studies, or gathering and developing public visions for the post-oil economy.



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