OCTOBER 2023

AFRICA GAS FACT SHEET 1

THE CLIMATE CASE AGAINST GAS EXPANSION

Despite the accelerating climate emergency, the fossil gas industry has big plans for growth in Africa.[1] Over 20,000 kilometers of planned gas pipelines and around 30 gas extraction areas are in development across the continent.[2] Much of the planned gas extraction is designed for export to foreign markets.[3]

Instead of forming a bridge – as gas proponents claim – gas expansion builds a wall against the clean energy future we need. It also risks perpetuating destructive and inequitable models of development.

RISING EMISSIONS FROM GAS COMBUSTION BUST THE CLIMATE BUDGET

We need to reduce the consumption and production of all fossil fuels immediately, gas included, if we are to meet the Paris Agreement goal of limiting global warming to 1.5 degrees Celsius (°C) and avert the worst impacts of the climate crisis.[4] At current emission rates, the carbon budget for a 50% chance of maintaining 1.5°C will be exhausted in less than ten years.

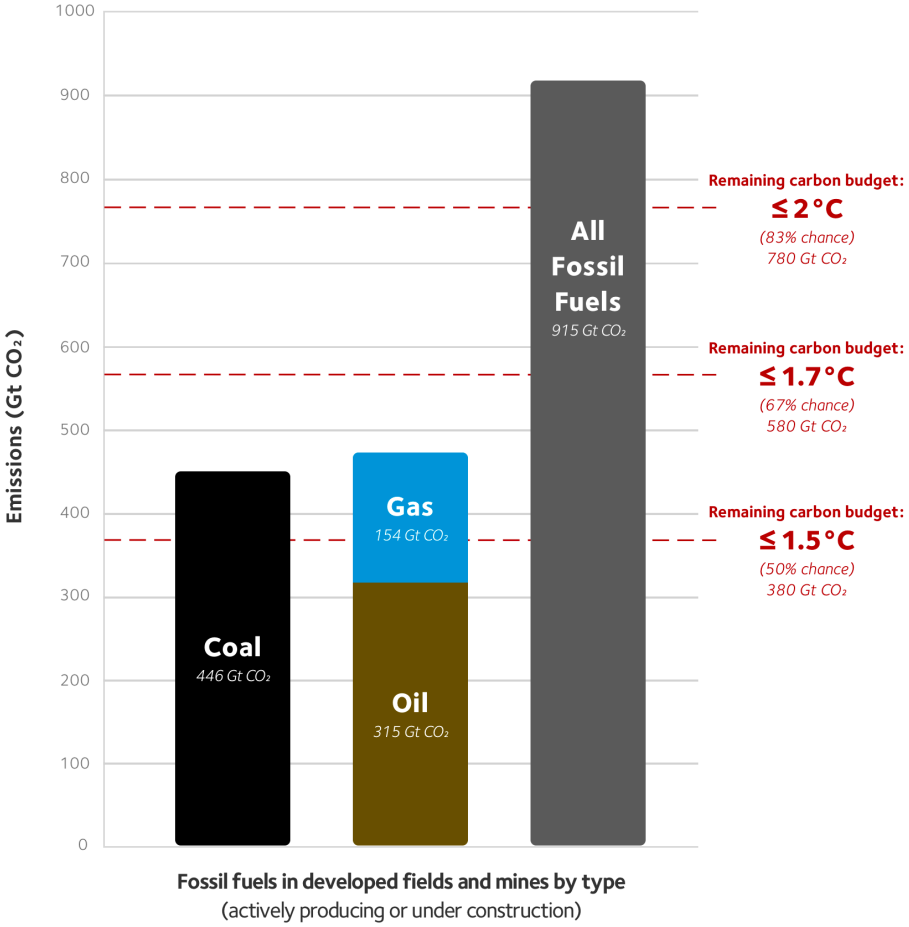
Figure 1 shows that global projects currently producing oil, gas, and coal hold enough fossil fuels to cause 2°C of warming. Even if coal use ends immediately, we still cannot burn all the oil and gas in these developed extraction projects without overshooting our targets. In fact, 60% of fossil fuels in existing projects must be left in the ground to have a chance of limiting global warming to 1.5°C.[5]

New fields and mines will only worsen the climate crisis or become stranded assets that leave behind unfunded clean-up, shortfalls of government revenue, and overnight job losses.

Plans to develop new gas fields and expand gas consumption – in Africa or anywhere – are incompatible with the crucial 1.5°C warming limit and would compound Africa's already heightened climate vulnerability.

Wealthy countries in the Global North most responsible for past and current emissions, and with the greatest economic means to finance a just transition, must move first and fastest to phase out their existing production. They must also pay their fair share for the global energy transition and climate-related loss and damage.[6] But all countries must now stop gas expansion to meet climate goals. A headlong rush into expanding gas production in Africa risks undermining global climate goals and perpetuating destructive and inequitable models of development that fail to advance sustainable development on the continent.

Figure 1: CO_2 Emissions Committed by Developed Oil & Gas Fields and Coal Mines, Compared to Remaining Carbon Budgets from the Start of 2023[a]



Source: Oil Change International analysis of Rystad Energy data (2023) (oil and gas); Trout and Muttitt et al (2022) (coal); Intergovernmental Panel on Climate Change (2021) and Global Carbon Project (2022) (carbon budgets).

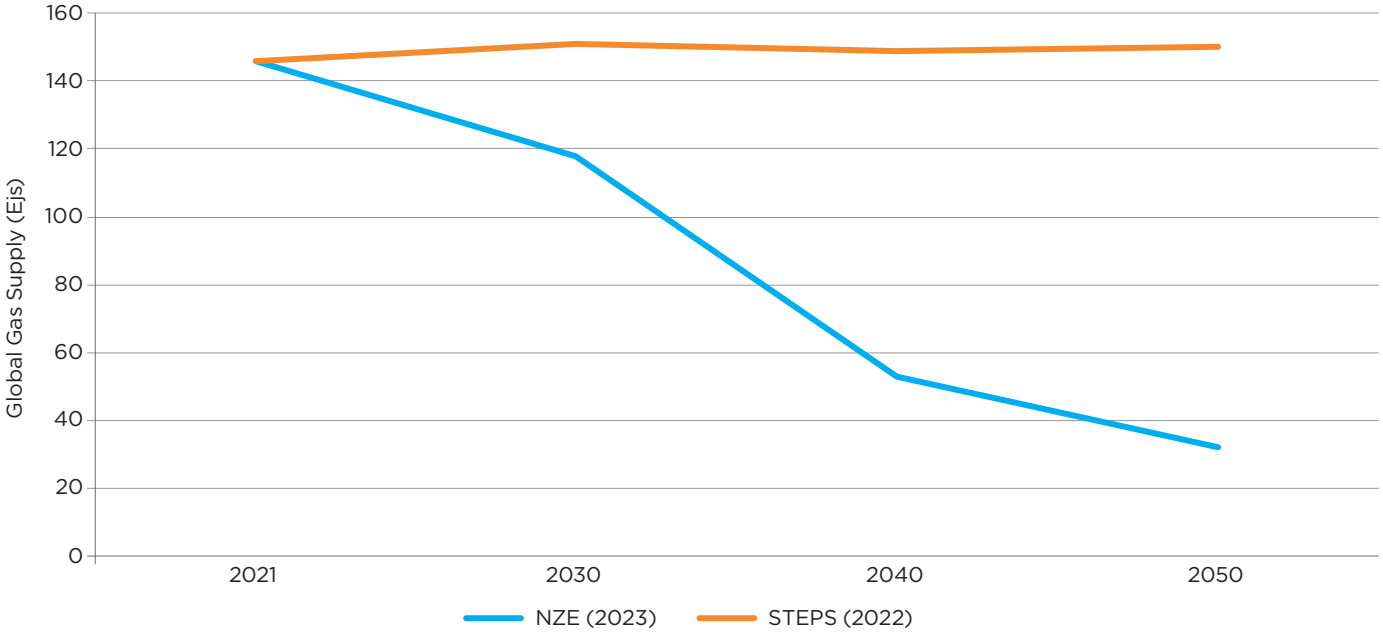
a Newer analysis finds the remaining budget may be even smaller. An authoritative group of scientists have updated the IPCC estimates of the remaining carbon budget based on more recent science. They estimate that, as of the start of 2023, the carbon budget for a 50% chance of limiting warming to 1.5°C is just 250 Gt CO_2, or 6 years of carbon pollution at 2022 levels.

THE ONLY WAY FOR GAS IS DOWN

The International Energy Agency (IEA) has developed a Net Zero Emissions energy scenario, mapping out what the future of fossil fuels should look like if we want to stay under 1.5°C of warming.[7] It projects a nearly 80% decline in fossil gas use by 2050 compared to 2022 levels (see Figure 2).

However, the orange line in Figure 2 shows the IEA's business-as-usual trajectory for global fossil gas demand. This would lead to a 2.5°C average global temperature rise by the end of the century.[8] This shows how current plans to grow gas production and consumption fail the 1.5°C test.

Figure 2: Global Gas Supply in IEA Scenarios - Business-as-Usual (STEPS) Vs Net Zero Emissions (NZE)



Source: Oil Change International based on IEA's Net Zero Report (2023) and World Energy Outlook 2022

GAS NEEDS TO BE CLEANED UP AND PHASED OUT

Claims that fossil gas is cleaner than coal and, therefore, has a role in addressing the climate crisis do not add up. The emissions analysis in Figure 2 is based solely on the emissions from burning fossil gas and does not include the substantial pollution from extracting, processing, transporting, and distributing gas. This pollution adds significantly to the climate impact of fossil gas but cleaning it up is not enough to justify expansion.

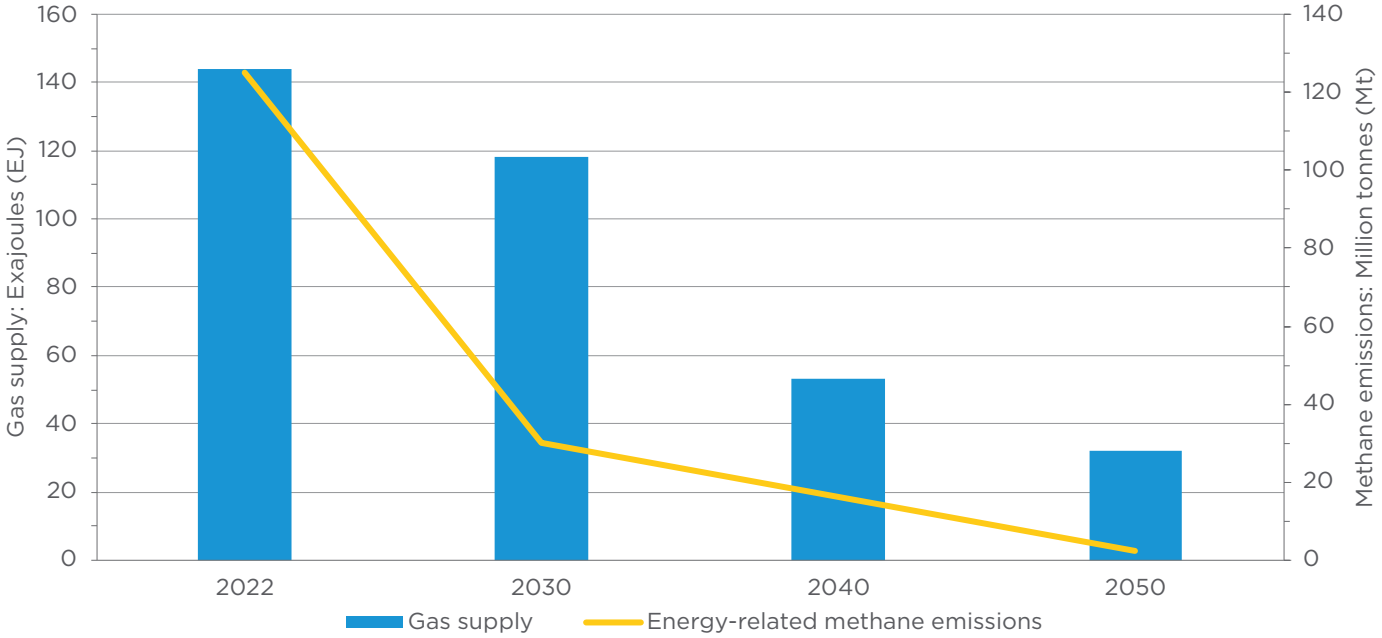
Methane – a climate super-pollutant over 80 times more potent than carbon dioxide – is the main ingredient of fossil gas. Methane is vented and leaked along the entire gas supply chain and has recently reached record levels in the atmosphere.[9] Methane concentrations in the atmosphere have more than doubled over the past 200 years, and scientists estimate that this increase is responsible for 20 to 30% of climate warming.[10]

A recent study estimates that if as little as 0.2% of produced fossil gas escapes to the atmosphere, the climate impact of burning gas in power plants can be equivalent to coal.[11] Estimates of leakage rates in the world's oil and gas fields range from 0.65% to an astounding 66%.[12] This suggests that the displacement of coal-fired power plants by gas plants in recent decades has likely worsened global warming rather than mitigating it.

A global methane pledge was announced at the COP26 conference in Glasgow in November 2021.[13] While 150 countries have signed onto the pledge to cut methane emissions by 30% by 2030, progress so far has been disappointing. The IEA announced in February that "(m)ethane emissions remained stubbornly high in 2022 even as soaring energy prices made actions to reduce them cheaper than ever."[14] The agency's Global Methane Tracker found that "the global energy industry was responsible for 135 million tonnes of methane released into the atmosphere in 2022, only slightly below the record highs seen in 2019."[15] The Tracker shows that 62% of this, over 82 million metric tons, was from the oil and gas industry. This is equivalent to over 7 billion metric tons of CO_2, an amount over 40% greater than reported U.S. energy-related CO_2 emissions in 2021.[16]

However, achieving methane emissions reduction goals does not change the fundamental trajectory fossil gas must take to maintain a livable climate. The IEA's Net Zero Emissions Scenario charts an energy-related methane emissions reduction trajectory of over 75% by 2030.[17] This is an estimate of "measures (that) lead to the elimination of all technically avoidable methane emissions by 2030" (in the energy sector). Even with this highly ambitious methane emissions reduction course, the production and consumption of fossil gas must decline by almost 20% by 2030 and nearly 80% by 2050 (relative to 2022 levels) to align with a 1.5°C goal. (see Figure 3).[18]

Figure 3: The Decline of Gas Supply and Methane Emissions in the IEA's Net Zero Emissions Energy Scenario (2023)



Source: Oil Change International based on IEA's Net Zero Report (2023)

LNG IS WORSE

Table 1 below shows that current plans target a doubling of LNG capacity in Africa. The LNG process significantly adds to the full lifecycle emissions of producing and using fossil gas. If methane leakage is not kept at very low levels, replacing coal with LNG will increase greenhouse gas emissions.[19]

LNG is fossil gas that is cooled to -162°C to reduce volume and facilitate shipping. On arrival, the liquefied gas is generally regasified to be further transported by pipeline to its final destination.

The process of making LNG requires a lot of energy. Ozone-depleting refrigerants are used in the super-cooling process. Electricity and gas are generally used to power the plants that chill the gas into LNG. Additional energy is required for shipping and regasification, and methane is released at the LNG plants and during shipping. The emissions associated with the production and distribution of LNG can constitute up to 24% of LNG's total lifecycle emissions.[20] Current plans to add carbon capture and storage to gas processing and LNG plants are a false solution that is failing.[21]

GAS FAILS AFRICA'S DEVELOPMENT GOALS

Fossil fuel extraction in Africa and in many other places worldwide has rarely led to positive development outcomes. Multiple studies have shown that oil and gas extraction is highly correlated with corruption,[22] militarization, economic inequality,[23] and failed development goals.[24] After decades of oil and gas extraction, Africa remains home to the vast majority of people globally who lack access to modern energy services.

An enduring and disturbing example of these failures is the ongoing gas flaring in the Niger Delta. Despite being declared illegal by a Nigerian High Court in 2005,[25] the destructive and wasteful flaring continues.[26]

Table 1: Existing & Planned LNG Capacity in Africa is Dominated by Exports

African LNG Capacity			
	Import Capacity (Million Tons per Year)	Export Capacity (Million Tons per Year)	Export Percentage
Operating	6	76	93%
Planned and Under Contruction	14	70	84%

Source: Global Energy Monitor Gas Infrastructure Database

There are widespread concerns that countries pursuing oil and gas extraction for the first time, such as Senegal, Uganda, Tanzania, and Namibia, may experience similar challenges.[27]

A 2021 Oil Change International report found that 60% of African oil and gas extraction is owned by corporations headquartered outside Africa.[28] This figure rises to 66% when looking at projects in development. This means that most of the revenues and profits from oil and gas development are flowing away from Africa.

An analysis of Global Energy Monitor's data on fossil gas infrastructure in Africa shows that 93% of currently operating LNG capacity on the continent is for export.[29] Meanwhile, 84% of currently planned or under-construction LNG capacity is slated for export. That figure may be much higher as several currently planned export expansions have not yet disclosed capacity figures.

Africa has 39% of the world's renewable energy production potential, which has so far barely been developed.[30] An IEA assessment of technologies that can deliver access to electricity in sub-Saharan Africa by 2030 sees renewable energy delivering 71% of new connections.[31]

Developing renewable energy has been shown to create two to five times more jobs per dollar invested than fossil fuels.[32] There is substantial evidence that renewable energy can provide universal energy access and support stable, sustainable development in developing economies.[33] There is no need to develop fossil fuels first. Renewable energy is tried and tested and can deliver energy for Africa's development.[34]

Rich countries owe a debt to Africa for the fossil fuels they have extracted and consumed, and the climate chaos caused. The climate crisis is upon us, and the impacts disproportionately fall upon poorer countries and communities. Rich countries must move first to reduce emissions and support the transition to clean energy in Africa and elsewhere. They must step up to transfer technology and capital so everyone can benefit from the clean energy transition. This transfer should be done in line with the principles of climate justice in order to avoid replicating current injustices. Those should include but not be limited to intellectual property waivers and debt freezes to prevent new dependencies from replacing the old.

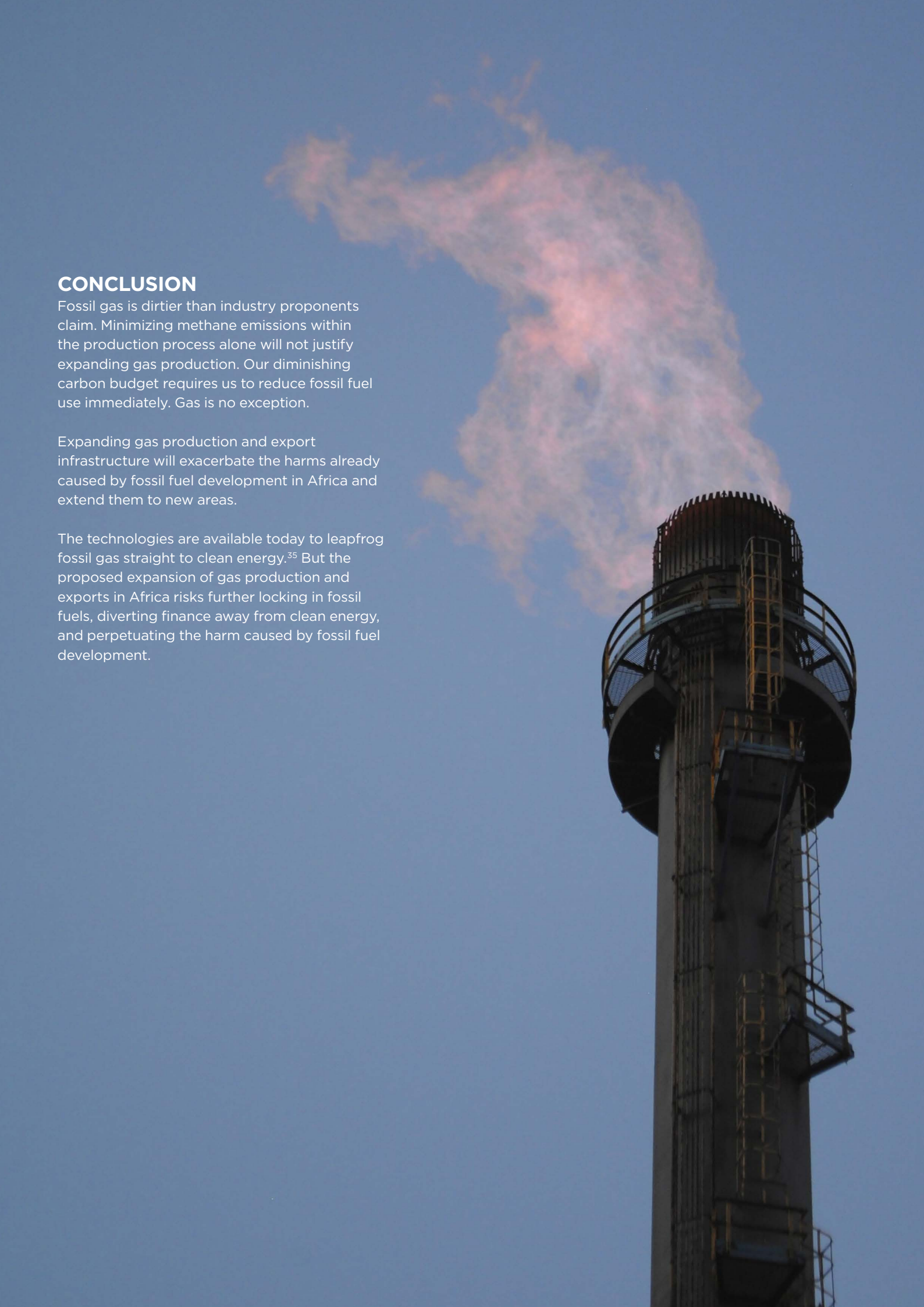
The evidence and data presented in this briefing make clear that fossil gas has no role in the clean energy transition. African countries with gas resources should leave those resources in the ground to avoid the negative impacts of fossil fuel extraction and help the world avoid climate catastrophe. They can only do that with the support of countries that are primarily responsible for creating the crisis. Doing so can open up new opportunities for development and energy access that fossil fuels have never accomplished.

CONCLUSION

Fossil gas is dirtier than industry proponents claim. Minimizing methane emissions within the production process alone will not justify expanding gas production. Our diminishing carbon budget requires us to reduce fossil fuel use immediately. Gas is no exception.

Expanding gas production and export infrastructure will exacerbate the harms already caused by fossil fuel development in Africa and extend them to new areas.

The technologies are available today to leapfrog fossil gas straight to clean energy.[35] But the proposed expansion of gas production and exports in Africa risks further locking in fossil fuels, diverting finance away from clean energy, and perpetuating the harm caused by fossil fuel development.



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ADDITIONAL RESOURCES

www.priceofoil.org/gas https://priceofoil.org/program-areas/africa/ https://dont-gas-africa.org/cop27-report

This fact sheet can be found online at https://priceofoil.org/africa-no-to-gas

Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.

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