

A GUIDE TO FOSSIL GAS IN SOUTHERN AFRICA



DEFINITION LIST OF KEY WORDS YOU WILL NEED TO KNOW

Climate Change	Long-term changes in weather patterns over a period of time, largely caused by greenhouse gas emissions from human activities such as burning fossil fuels.
Fossil Fuels	Energy sources such as coal, oil, and natural gas that are formed from ancient organic matter. Burning fossil fuels releases greenhouse gases that contribute to climate change.
CNG (Compressed Natural Gas):	Natural gas that has been compressed and stored under high pressure, commonly used as a fuel for vehicles.
LNG (Liquefied Natural Gas):	Natural gas that has been cooled to a liquid state for easier storage and transport over long distances.
Offshore:	Oil and gas exploration, drilling, or production that takes place at sea, usually beneath the ocean floor.
Onshore:	Oil and gas exploration, drilling, or production that takes place on land.
Upstream:	The stage of the oil and gas industry that involves exploring for and extracting oil and natural gas from the ground or seabed.
Midstream:	The transportation, storage, and processing of oil and gas after extraction, including pipelines, shipping, and processing facilities.
Downstream:	The final stage of the oil and gas industry, where oil and gas are refined, distributed, marketed, and sold to consumers for use.

ORIGIN AND THREATS OF NATURAL GAS THROUGHOUT IT'S LIFECYCLE

ABOUT GAS

Natural gas, alternatively known as “fossil gas” is a fossil fuel that can be burned for energy just like coal and oil. The process of natural gas is risky, poses a threat to public health and contributes to climate change.

As the production and trade of Liquefied Natural gas is increasing worldwide so is scientific research proving the harmful effects of gas production on human health and our environments.

This guide will unpack some of the basics and legal aspects of gas projects, and ways we can take action in our communities.

THE ORIGIN OF GAS

- Residues of dead plants and animals that accumulated in thick layers under the earth's surface and the ocean floor tens of millions of years ago
- Often mixed with sand, silt and calcium carbonate
- Over time, the layers are buried under sand, silt and rocks.
- Pressure and heat change these materials into coal, oil and natural gas.
- Natural gas is mostly made of methane, and trace amounts of butane, ethane and propane.



GAS PROCESSING LIFE CYCLE

UPSTREAM Gas is extracted and treated

PRODUCTION



Gas Processing



Gas Production



Gas Flaring

NOTABLE HARMFUL IMPACTS

AIR: polluting emissions at production stage degrade air quality at local and regional level.

Risks:

Climate change and health risks for residents of nearby areas. Hazardous air pollutants include a mixture of methane, nitrogen oxides and volatile organic compounds and other harmful substances such as benzene, formaldehyde, hexane and hydrogen sulphide.

LAND: Natural ecosystems and wildlife habitats suffer when gas fields and associated infrastructures are developed.

Risks:

Land and marine areas deterioration resulting in vegetation loss and damage to biodiversity. The loss of natural habitats occurs with onshore and offshore gas operations. Healthy ecosystems essential for preventing climate change are affected.

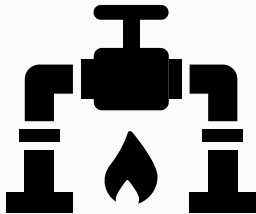
WATER: Gas production causes water pollution and water scarcity especially in semi-arid regions.

Risks:

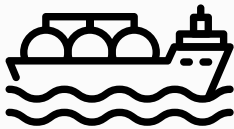
Inadequate sealing of gas wells and poor management of hazardous wastes which are usually produced in large amounts result in surface water and ground water contamination. Wastes contain poisonous chemicals composing fracking fluids and hazardous substances drilled out of the earth's crust. Water scarcity occurs due to the large quantity of water required in drilling processes.

MIDSTREAM: Gas is processed and transported

TRANSMISSION



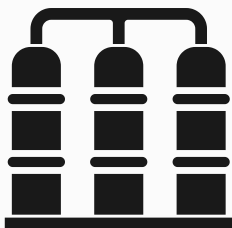
Gas Piping



FSRU
(Floating Storage and
Regasification Unit)



LNG (Liquefied natural
gas) Shipping



LNG Storage



LNG Transport and CNG
Distribution

NOTABLE HARMFUL IMPACTS

Gas pipelines deteriorate and break with time.

Risks: Gas leakages are likely to occur resulting in explosions and fires.

Gas can be transported as Liquefied Natural Gas (LNG). From liquefaction facilities to ship terminals, and from storage tanks to regasification units, harmful air pollutants are released.

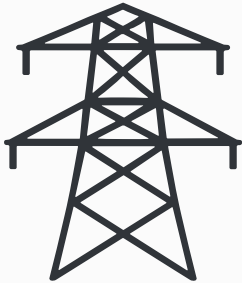
Risks : Vapour cloud explosions, harmful emissions from gas flaring

The lifecycle of greenhouse gases is extended when gas is liquefied, transported as LNG and regasified assuming no major leaks from gas pipelines.

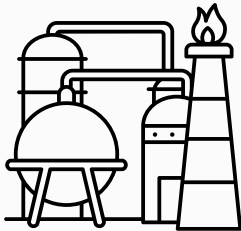
Risk: The total amount of greenhouse gas releases throughout the lifecycle of gas and its consequences is thoroughly underestimated.

DOWNSTREAM: Gas is burned and used to produce energy

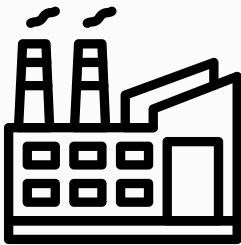
DISTRIBUTION



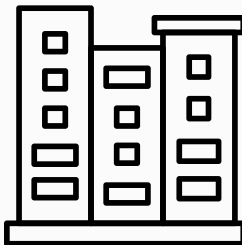
Gas-to-Power



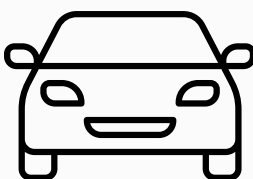
Petrochemicals



Industry



Residential



Transport

NOTABLE HARMFUL IMPACTS

Current and future proposed uses of gas at downstream level include gas – to – power plants, industrial heating and gas – to – liquid plants.

Risks:

- When gas is burned for energy, large quantities of polluting emissions and hazardous waste are produced. These include methane, nitrogen oxides, carbon dioxide, volatile organic compounds and other hazardous air pollutants such as formaldehydes resulting from incomplete combustion.
- Methane is 80 times a more potent green house gas than carbon dioxide over a 20 – year period intensifying climate change.
- Existing gas – to – liquid plants operated by Sasol emit volatile organic compounds, greenhouse gases and other harmful air pollutants in addition to large amounts of liquid wastes including oils, sludges, waste chemicals and contaminated waxes.
- Hazardous air pollutants from gas – to – power plants impact human health and the environment. For example, Nitrogen Oxides cause respiratory track diseases like coughing, shortness of breath, airway damage including death at higher concentrations. It reacts with other chemicals in the atmosphere to form acid rain and particulate matter.

THE SOUTHERN AFRICAN PERSPECTIVE ON GAS, EXISTING PROJECTS

The current trail of ageing and highly polluting coal-fired power stations are nearing the end of their life cycle and therefore, there is an urgent call for new low-carbon, utility scale electricity producing infrastructure.

However, there are strong signals that South Africa and many other Southern African countries are inclined to supporting gas investments that could turn out to be a costly mistake with negative impacts on the population.

Most of these indications are a result of economically and politically sustained gas interests, some emanating from inside the government.

SOCIO-ECONOMIC IMPACTS

- Relocation of communities from gas fields.
- Threat to local economies as indigenous business initiatives provide more employment opportunities than fossil fuels.
- Fisherfolk livelihood in coastal communities is affected due to the extinction of sea life.
- Employment opportunities emanating from the gas industry are most likely to be open to skilled workers and specialists.
- Loss of sources of income.
- Stranded assets

IMPACTS ON ENERGY SECURITY

- Lack of affordable electricity on a long - term basis
- Gas investments are coupled with several risks that lead to rather higher costs for consumers, creating roadblocks in the “just transition” process for workers and causing loss. Therefore, it is imperative to rethink the development of electricity production sector.

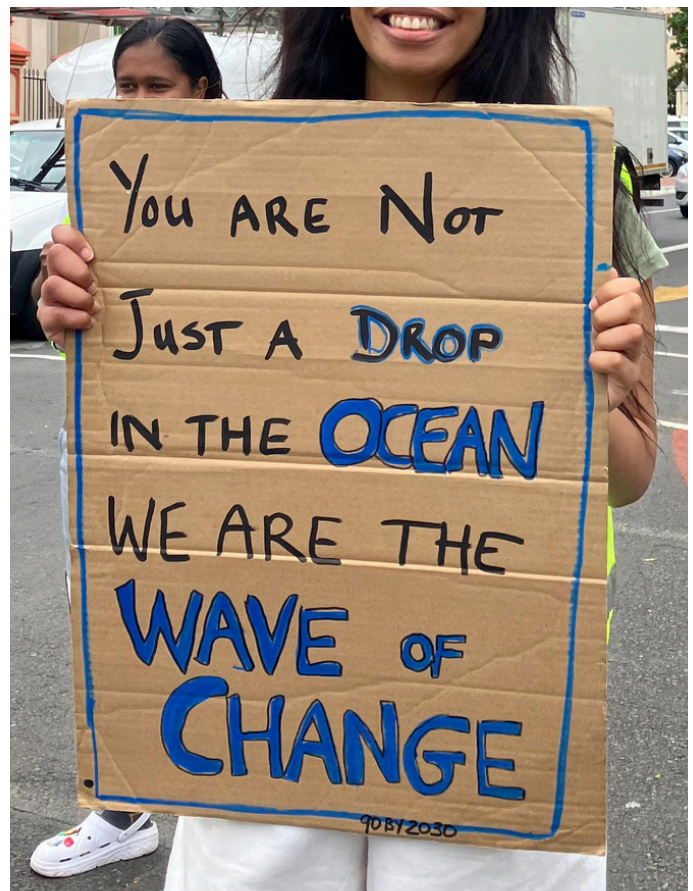
CAMPAIGNING AND OPPOSING GAS PROJECTS AND ACTIVISM IN SOUTHERN AFRICA

CAMPAIGNING

Campaigning against gas projects and supporting activism in Southern Africa involves working alongside communities, civil society organisations, and social movements to challenge the expansion of fossil gas and advocate for a just and equitable energy transition. Campaigning approaches must be tailored to each country, as the legal framework governing protests, public participation, and civic action differs across the region.

Activists should also carefully assess the level of risk involved, recognising that political, legal, and security contexts vary significantly and may have implications for the safety and wellbeing of individuals and communities.

Through public awareness campaigns, community organising, policy engagement, research, media, and peaceful mobilisation, campaigners can advance community priorities while taking appropriate measures to protect participants and promote safe, informed, and effective campaigning.



WAYS WE CAN TAKE ACTION

Taking action is essential to ensuring that the voices of communities affected by gas development are heard and considered in decisions that shape their future. Collective action can influence policy, strengthen accountability, protect people's rights, and promote more sustainable and equitable energy solutions.

POPULAR EDUCATION

Building the Foundation

Education IS action. Meeting people where they are, deepening analysis, and connecting struggles for collective power.

Workshops · Community dialogues · School programmes · Digital content · Facilitator training



POLICY AND STRATEGIC ENGAGEMENT

Demanding Accountability from Power

Taking organised demands to the institutions that have the power to make structural change - municipalities, provincial governments, national departments, and international climate finance bodies.

Petitions · Policy submissions · Media op-eds · Coalition building ·

MASS MOBILISATION

Building Power for Systemic Change -

Sustained, organised, strategically coordinated action by thousands of people across communities, identities, and geographies - united around shared demands and a shared analysis of power.

Marches · Community hearings · Direct action · Mass campaigns



OUR DIFFERENT LANDSCAPES

The laws governing civic action and environmental action are not the same across Southern Africa, but many countries share similar legal foundations. Their Constitutions often contain comparable rights and principles, which influence other national laws.

While these similarities provide a common basis for protecting rights, how the law is enforced and interpreted varies from one country to another. As a result, activists may face very different levels of legal, political, and personal risk depending on where they are working.

The next section aims to look at 7 Southern African countries and the rights they allow for civic groups when it comes to:

- *Freedom of Assembly*
- *Freedom of Expression*
- *Access to Information and Public Participation*



FREEDOM OF ASSEMBLY

- **South Africa:** Strong constitutional protection. Peaceful protests require notice but generally not permission.
- **Namibia:** Protected by the Constitution. Notification may be required.
- **Botswana:** Protected, but police often regulate public gatherings.
- **Lesotho:** Constitution protects peaceful assembly.
- **Eswatini/Swaziland:** Constitution protects assembly, but protests face significant restrictions.
- **Mozambique:** Constitution protects assembly, but protests face greater restrictions and police intervention.
- **Zimbabwe:** Constitution protects assembly, but protests are frequently restricted or prohibited.

FREEDOM OF EXPRESSION

- **South Africa:** Strong constitutional protection and active civil society.
- **Namibia:** Generally well protected with a free media environment.
- **Botswana:** Protected, though some restrictions exist.
- **Lesotho:** Constitution protects free expression.
- **Eswatini/Swaziland:** Constitution protects expression, but media and activists face restrictions.
- **Mozambique:** Constitution protects expression, but activists and journalists face intimidation and restrictions.
- **Zimbabwe:** Constitution protects expression, but journalists and activists face intimidation and arrests.

ACCESS TO INFORMATION AND PUBLIC PARTICIPATION

- **South Africa:** Strong legal rights and public participation in EIAs.
- **Namibia:** Public participation required in EIAs.
- **Botswana:** Public consultation required for EIAs, though implementation varies.
- **Lesotho:** Public participation recognised but implementation can be limited.
- **Eswatini/Swaziland:** Public participation exists but is often limited in practice.
- **Mozambique:** Public participation required by law, but access to information and meaningful consultation are often weak.
- **Zimbabwe:** Public participation is provided for in law but can be constrained by limited transparency.



NAVIGATING THE RISKS AND SUPPORT SYSTEMS IN PLACE

Campaigning and activism can expose individuals and communities to legal, political, and personal risks, which vary across Southern Africa. Before taking action, it is important to assess the local context, understand your rights, and identify the support systems available.

WHAT THE SOUTHERN AFRICA YOUTH SUPPORT HUB HAS TO SAY:

- Legal**  Understand your legal rights, relevant national laws, and where to access legal advice or representation if needed.
- Digital**  Protect your digital security by using strong passwords, secure messaging platforms, and being mindful of the information you share online.
- Well-being**  Prioritise your physical and mental wellbeing by taking breaks, accessing peer support, and recognising the impacts of stress and burnout.
- Narrative**  Communicate clear, evidence-based messages that reflect community voices and help counter misinformation or harmful narratives.
- Physical**  Assess potential physical risks before activities, develop safety plans, and ensure participants know emergency contacts and support procedures.

IMPORTANT TO REMEMBER

Collaboration strengthens both the impact and safety of campaigning. By working with civil society organisations, joining networks, attending training and information-sharing sessions, co-creating resources, and sharing lessons and early warnings, campaigners can build stronger, more coordinated, and resilient movements. Working collectively also improves access to legal, technical, and psychosocial support when it is needed most.

KEY TAKE AWAYS TO KEEP IN MIND CONCERNING GAS

GAS IS RISKY!

Although referred to as “natural” gas, it is a fossil fuel like coal and oil.

ENVIRONMENTAL IMPACTS

- Gas production releases a lot of methane.
- Methane, a powerful short - term pollutant, can potentially leak at all stages of gas processing and volumes are underestimated.
- Methane is 85 times more potent a greenhouse gas than carbon dioxide over a 20-year timeframe.
- Fracking uses a lot of water and polluted water resulting from the processes contaminates groundwater.
- Offshore drilling cause damage to marine ecosystem and impacts on human livelihood.
- Gas emissions pollute the environment and affect human health. i.e. cough and lung disease, acute risks.
- Scientific research suggest that no new gas development is needed if we want to achieve net zero emissions by 2050.

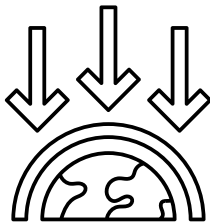
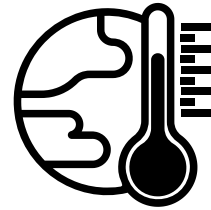
SOCIO-ECONOMIC IMPACTS

- Oil and gas projects do not improve access to affordable electricity or clean household energy, limiting their contribution to energy justice.
- Offshore drilling and fracking negatively affect small-scale fishers, coastal communities, and other local livelihoods that depend on healthy ecosystems.
- Communities often have little access to information or meaningful participation in decision-making, resulting in poor governance and unequal outcomes.
- Gas infrastructure requires significant investment, is vulnerable to volatile global prices, and risks creating stranded assets that may never deliver long-term economic benefits.
- Large-scale extractive projects concentrate benefits among governments and multinational corporations while providing limited local ownership, economic development, or long-term resilience for communities.

TOP 5 RISKS ASSOCIATED WITH GAS -TO - POWER SECTOR

Risk 1 - Climate Contributor

The gas-to-power value chain heavily contribute to climate change.



Risk 2 - Global Pressure

International pressure to shift away from gas due to climate impacts is rising.

Risk 3 - Financial

Gas-to-power are associated with unstable economics: there are multiple financial risks linked with gas – to – power threatening the viability and competitiveness of new gas projects.

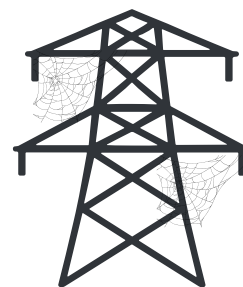


Risk 4 - Affordability

Lack of affordable gas supply and reduced energy security: there is uncertainty regarding the domestic supply of gas for electricity production in South Africa due to significant capital costs.

Risk 5 - Investment and Stranded Assets

Stranded gas assets resulting from unforeseen devaluations and conversions to liabilities in addition to previously mentioned risks. In this case, investors and the governments will not be able to recover their investments.



GET INVOLVED TODAY

ORGANISATIONS AND NETWORKS TO FOLLOW AND SUPPORT:

Stop Fossil Gas Southern Africa Network:

<https://stopfossilgassa.org.za/>

Centre for Environmental Rights:

www.cer.org.za/

The Green Connection:

<https://thegreenconnection.org.za/>

Natural Justice

www.naturaljustice.org/

groundWork

<https://groundwork.org.za/>

Dont Gas Africa

www.dont-gas-africa.org/



GUIDES AND SUPPORT GROUPS

Southern Africa Youth Support Hub:

The Youth Support Hub is a youth led initiative which aims to bring young people in the climate justice movement together and develop their skills, by connecting them to each other and to expert coaches who can help them grow.

www.90by2030.org.za/youth-support-hub/

CJC Activist Resource Guide:

A curated collection of organisations, tools, and resources that support activists, community organisers, and movements working across climate justice in South Africa.

<https://climatejusticecoalition.org/activist-resource-guide/>



TOGETHER FOR A GAS FREE FUTURE

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