

**IN THE HIGH COURT OF SOUTH AFRICA
(WESTERN CAPE DIVISION, CAPE TOWN)**

Case No/2024

In the matter between:

AUKOTOWA FISHERIES PRIMARY CO-OPERATIVE LIMITED First Applicant

THE GREEN CONNECTION NPC Second Applicant

NATURAL JUSTICE Third Applicant

and

**DIRECTOR-GENERAL: DEPARTMENT OF MINERAL AND
PETROLEUM RESOURCES** First Respondent

MINISTER OF ENVIRONMENTAL AFFAIRS Second Respondent

TGS GEOPHYSICAL COMPANY (UK) LTD Third Respondent

MINISTER OF MINERAL AND PETROLEUM
RESOURCES Fourth Respondent

EXPERT AFFIDAVIT : G K HAMILTON

I, the undersigned,

GILLIAN KAY HAMILTON

do hereby make oath and state:



1. I am an economist specializing in climate change, particularly in climate mitigation, energy, and development economics.
2. The facts contained in this affidavit fall within my personal knowledge, except where I indicate otherwise and are, to the best of my knowledge, true and correct. To the extent that I rely on information supplied by others, I believe that such information is true and correct.
3. I hold a Master's degree in Sustainable Development from Stellenbosch University, a BPhil (Honours) in Sustainable Development from Stellenbosch University, an Honours in Economics specializing in trade and development from the University of Johannesburg, a Postgraduate Diploma in Management from Wits Business School, and a BCom from Pretoria University.
4. With over 20 years of experience, I have conducted extensive research and identified solutions to developmental challenges in South Africa, including economic models of development. As the former Branch Manager for Al Gore's NGO in Africa, the African Climate Reality Project, I possess comprehensive knowledge of climate change and climate mitigation policies. In this capacity, I represented civil society in discussions on various climate mitigation and economic policies in South Africa, including the carbon tax regulations and the green taxonomy.
5. In 2021, I authored a literature review titled "The Socioeconomic Consequences of Offshore Oil and Gas Activities on South Africa" for The Green Connection. I presented my findings at the African Oceans Tribunal and to the Energy Governance Network of South Africa. I have also published several opinion pieces advocating for sustainable economic practices, such as



"The GNU must come to grips with energy transition" and "Gas is a risky investment for SA amid renewables push."

6. My experience and qualifications are set out in my curriculum vitae, a copy of which is attached marked Annexure "GH1". By virtue of my qualifications, training and experience, I submit that I am qualified to give expert evidence on the issues traversed in this affidavit.
7. In order to arrive at a balanced assessment of whether or not the 3rd Respondent's proposed offshore 3D seismic survey (a technology used for the acquisition of seismic data for possible future oil and gas exploration) is socially, environmentally and economically sustainable, it is necessary to assess, evaluate and consider the social, environmental and economic impacts (and risks) of those activities, both positive and negative.
8. In the 2nd Respondent's Appeal Decision, it is recorded that the 1st Respondent indicates that "...It is also important to note that the proposed project has the potential to produce long-term benefits to South Africa, even though immediate benefits are limited..." (at para 2.9.3) and "...Whilst there are no immediate benefits from the proposed activity, however, dependent on the success of the proposed project, there might be future benefits" (at para 2.9.8).
9. The 2nd Respondent notes in her evaluation (reasons for decision) that "...some of the concerns raised by the Appellants extend beyond the proposed project activity in respect of which the EA was granted. I confirm that any activity beyond the EA will be subject to a separate application and a separate assessment process. Accordingly, it is not necessary to consider submissions made in respect of activities that fall outside the EA for the purposes of this

Two handwritten signatures in black ink, one to the left of the other, located at the bottom right of the page.

appeal” (para 2.21.2). The 2nd Respondent indicates further she is “...satisfied that the socio-economic impacts and mitigation measure on *inter alia*, marine fauna, small scale and commercial fishing have been considered and assessed...” (at para 2.21.6) and that “Many of the comments made by the appellants were made on the assumption that the impacts associated with production had to be considered, not just those associated with exploration. This approach is incorrect. The EA and accordingly, this appeal is limited to considerations of the impacts of exploration which are far less significant and far less invasive than they will be if extraction and production takes place. As such, it is not necessary to consider the possible impacts of a project that is not yet planned and falls outside the scope of the EA” (at para 2.21.7).

10. As a consequence, the potential negative economic impacts and risks of developing an oil and gas sector in South Africa have not been assessed, evaluated or considered.
11. In this affidavit, I explain the potential negative economic impacts and risks of developing an oil and gas sector in South Africa, based on an extensive literature review and research. The views expressed in this affidavit are dealt in more detail in the Addendum ‘***Literature Review: The Negative Economic Impacts of Developing an Oil and Gas Sector in South Africa***’ (Annexure “GH2”).
12. In Summary, the research shows (among other things) that:
 - 12.1. The disparity between the narratives of African leaders and the realities faced by communities in sacrifice zones (A sacrifice zone refers to a geographic area that has been permanently impaired by environmental

damage or economic disinvestment) illustrates a fundamental misunderstanding of the adverse effects fossil fuel investments can have on local economies.

- 12.2. Research shows that establishing an offshore oil and gas industry within South Africa is unlikely to yield significant economic benefits. Instead, it may exacerbate existing challenges. Past experiences across Sub-Saharan Africa indicate that actual benefits often fall short of forecasts.
- 12.3. With an accelerated global energy transition through increased shifts towards renewable energy and increasing climate mitigation commitments, the risks associated with oil and gas developments are profound. The financial, environmental, and social repercussions may well outweigh any anticipated economic gains in the form of increased levels of sovereign debt, lower credit ratings
- 12.4. It is imperative for South Africa to adopt a sustainable and renewable energy-focused economic approach, acknowledging the importance of protecting the socio-economic well-being of its citizens and environment.

Differentiating between Economic impacts during the reconnaissance (3D seismic survey), exploration and extraction phases

13. The economic impacts on South Africa of developing an oil and gas sector will differ during the reconnaissance (3D seismic survey), exploration and extraction phases:



- During the reconnaissance phase (3D seismic survey), the impacts are likely to be short term in duration (due to the surveys estimated to take no more than 70 days). However, if these surveys have a negative impact on the fish stocks and the fishing industry then there are likely to be long-term, negative ramifications in the longer term on the local economy.¹
 - During the exploratory phase, the impacts are likely to be largely localised and positive, albeit, of a relatively short-term duration (likely around six months) and smaller in magnitude. This assumes there won't be negative impacts on the fishing industry which will have extensive longer-term impacts on the local primary, secondary and tertiary industries reliant on fish stocks.
 - During the extraction phase, the impacts are likely to be negative both at a national and local level. Moreover, these impacts will have large, long-term consequences.
14. The reconnaissance (3D seismic survey) phase will likely require local service providers for refuelling, catering as well as transport and accommodation for crew members i.e. a small, positive impact.
15. The exploratory phase will likely require local service providers for refuelling, catering, goods as well as transport and accommodation for crew changes –

¹ For instance, the research on Saldanha Bay Municipality 'Socio-Economic Futures' notes that in Saldanha Bay Municipality (SBM), 'Livelihoods in the area are heavily dependent on fishing and, to a less extent, agriculture. Fishing accounts for 31% of all jobs, agriculture 6% and food processing, which is predominately fish processing, a further 5%.' The research adds that '...while the 'financial, insurance and business services' sector is large it only exists because of the income generated from fishing, 'food, beverages and tobacco' and construction.' Fishing is the most important economic sector in Saldanha Bay Municipality, at 15% of the total value added in the SBM. The report concludes that the local municipal area is overwhelmingly dependent on fishing and fish processing as nearly all the tertiary industries are a product of these industries. A downturn in these sectors will largely increase unemployment, poverty and inequality at a local scale.

with impacts more similar to tourism. This is due to the specialised nature of the survey vessels and drilling unit which are sourced from international contractors. The technical nature of the operations means that the survey vessels and drilling unit are crewed by highly skilled and experienced personnel largely recruited internationally.

16. The extraction phase could last for decades and during this time, South Africa's 'resource curse' (explained below) is likely to be magnified, and experience both in South Africa and internationally has indicated extensive negative local economic development, essentially maldevelopment.

Experience from other African Countries

17. Lessons learnt from other African countries indicates that there are numerous challenges that arise between the reconnaissance (3D seismic survey) and exploration phase and the actual production, and that these have economic consequences that must be taken into account:
 - **Overvaluation of oil and gas finds:** For oil and gas to be commercially viable, the deposit size of the find is important. Many oil and gas finds in Africa tend to be overestimated due to companies wanting to emphasize positive results to inflate their share prices. This misled governments and other companies exploring in the same areas.
 - **Timeline from discovery to production:** Oil and gas projects frequently have time and cost overruns, especially in Africa. Globally, the average amount of time it takes to get from discovery to production is 7.5 years. In Sub-Saharan Africa, the average time is around 12 years. For gas assets, the average time is 9 years globally, versus 15 years in Africa. The



extensive time and cost overruns may make these extractive projects less commercially viable.

- **Government revenues generated tend to fall significantly short of forecasts:** Revenue projection is on average 63% lower than is initially estimated. The shortfall has been attributed to lower rates of production than originally forecast; challenges associated with taxing production as the resource sector can be hard to tax effectively; underestimates of costs or cost deduction; and, mistaken fiscal assumptions in modelling. Consequently, the share of after-cost revenues that flow to the government as opposed to companies (known as the 'government take') is lower than initial expectations.

18. Senegal and Mozambique are recent examples of countries that have faced these challenges. Senegal's oil and gas sector has faced project delays, political uncertainties, mismanagement while their domestic energy poverty has not declined. Mozambique estimated that Area 1 and Area 4 within the Rovuma Basin would earn between \$31 and \$63 billion in government take over the lives of the two projects, with the likely figure (its base case scenario) being in the region of \$49 billion. However, these revenues are significantly overstated and modelling undertaken in 2021 indicates that revenues are likely to be in the region of \$18.4 billion, 70% of which will only come after 2040.

The Resource Curse and Localised Maldevelopment

19. The resource curse, also known as the 'Paradox of Plenty' refers to the failure of states to improve the social and economic conditions of their citizens despite being rich in resources such as oil and gas. In addition, countries rich in

extractive resources tend to have higher levels of inequality and lower levels of democracy. South Africa already suffers from the resource curse, experiencing many of the symptoms outlined in the resource curse literature. These symptoms include relatively slow GDP growth, gross inequality and entrenched poverty. Most of the SA population has failed to benefit from natural resource wealth – with sections of society actively harmed through the process of mineral extraction.

20. There is an assumption that the establishment of an oil and gas industry brings extensive local economic benefits to the areas in which the industry takes hold. International experience indicates that regions rich in non-renewable resources have tended to be cursed, rather than blessed and tend to suffer from localised maldevelopment. For example, evidence from the United States and Canada shows that the influx of people that follows the emergence of extractive industries results in increased demand for public services for several complex and often interrelated reasons. A growing population clearly demands increased infrastructural support in terms of basic municipal services such as health, education, emergency services, water and sanitation, electricity, and transport.
21. The influx of people to local areas also has other negative social ills or consequences such as:
 - Increases in prostitution.
 - Sex trafficking, including children, in oil boomtowns linked to 'a confluence of underlying forces including big oil money, an increase in drug cartels

and drug use, degradation of women in a male-dominated workforce, increased access to weapons, and a rise in transient populations’.

- Increases in domestic violence, dating violence, sexual assault, and sexually transmitted diseases.
- Increases in traffic violations, traffic accidents and fatalities.
- Increased drug abuse and drug trafficking.
- Crime levels increase compared to before the extraction of oil and gas and compared to other towns without extractive industries.
- Unemployment levels in these towns tends to increase.

22. An excellent example of the resource curse and local maldevelopment in South Africa is the platinum boom in Rustenburg. Between 1994 – 2009, platinum output increased by 67% between 1994 and 2009, changing Rustenburg from an agricultural community to city. By 2012, Rustenburg contributed almost 5% to South Africa’s GDP. During this period, people migrated to Rustenburg to find jobs in the platinum sector which resulted in the population growing from about 68 000 in 1996 to 626 522 in the 2016. The most significant increase was among the male population in the 20 – 34 age group. However, the impact of the platinum boom has been largely negative.

23. The rapid increase in population density has led to numerous social challenges, including increased unemployment rates, increased crime rates (and frequently noted as the most dangerous city in Africa), substantial increases in HIV and AIDS rates, and significant poverty levels and income inequality threaten social cohesion as almost 62% of the population live in poverty. Evidence shows that the local government is unable to meet the demand for basic services such as housing, water, electricity, sewerage, public transport, health facilities and

schools. This inability to meet with the demands for social goods has been hampered by the mismanagement of local public finances, inadequate government capacity, and questionable policy decisions.

The Reduction in Demand for Fossil Fuels and Transition Risk

24. It is widely agreed that the world is currently transitioning its energy sources from fossil fuels to clean energy. A number of global energy scenarios forecast a global decline in oil and gas use (some from as early as the 2020s) although the pace and scale of the transition differ amongst scenarios. The drivers responsible for these differences range from the implementation of stronger climate-friendly policies, improvements in technology, increasing energy efficiency and the cost competitiveness of oil substitutes amongst other factors. Mass-manufactured technologies such as solar photovoltaic (PV), wind turbines and electrical vehicles (EVs) are leading the way. Sales of residential heat pumps and stationary battery storage are also rising. At the same time, implementation and updating of government policies and the slowdown of China's growth rate are expected to continue to drive the global energy transition.
25. Transition risk is the risk that the value of assets and income are less than expected because of climate policy and market transformations, such as the transition away from fossil fuels i.e. a reduction in demand. Modelling indicates that **both current and emerging African petrostates should be cautious** when considering investing in gas and gas infrastructure because investments in African gas are ultimately value destructive. Notably, this declining demand is important for new oil and gas projects to take into account when considering



the economic, financial and climate change risks of major new oil and gas projects.

26. If South Africa plans on exporting oil and gas, as a newcomer to the market, its costs would likely be higher than established players and due to the global transition to net zero, South African gas will not be sufficiently price competitive to be exported or there will be no market for South African oil and gas. If the intention is to use the oil and gas domestically, then models developed in South Africa indicate that South Africa's power needs can be met with very little gas and the large majority of new energy new generation capacity should be wind and solar, with an increasing requirement for flexible (dispatchable) capacity to support this. Moreover, gas power is almost triple the cost of renewable energy and thus not cost-competitive. Research by National Business Institute (NBI) indicates that either way South Africa will have to substitute gas with greener alternatives and phased out by 2050 for South Africa to achieve a net-zero 2050 target. This indicates a high probability of stranded assets if South Africa invests in both the upstream and downstream oil and gas sector.

The Risk of Stranded Assets

27. **Stranded assets** are assets that become devalued or fail to generate an economic return before the end of their economic lifetime or can no longer be monetised due to changes in circumstances. Simply put, stranded assets are projects that fail to deliver adequate returns as conditions change. Economic modelling shows that to achieve Net Zero Emissions in 2050 (NZE2050), with the current levels of investment in oil and gas, over US\$350 billion in African oil



and gas assets would be stranded, with more than US\$90.3 billion in stranded assets in Nigeria alone. The implication for South Africa is that it is likely that investments in an oil and gas industry will end up being stranded assets as the demand from fossil fuels falls and the energy transition gains momentum.

Fiscal Breakeven Price

28. The **fiscal breakeven price** or price necessary for an oil-exporting state to balance its budget is another way to measure a state's vulnerability or economic resilience. Although oil and gas producers do not know what demand and price will do in the future, it is likely that an early excess of supply is likely to push down prices, leading to low subsequent investments, and resulting in higher prices in the short term.
29. Essentially, the **lower the production price is for a state, the less vulnerable these states are** – it is important that a petrostate's fiscal breakeven price is higher than the average price of Brent crude oil (approximately USD 80 per barrel in 2023). Therefore, **only those petrostates that have reduced costs and carbon intensity and become aggressively competitive will be viable** as overall demand and markets become more competitive during the energy transition. The Global Energy Scenarios forecasts that in the **Net Zero Emissions scenario oil will be around \$15 per barrel** and the Mean scenario forecast oil price at around \$65 per barrel from 2027 to 2050. At this stage, few petrostates will have a breakeven fiscal price i.e. their costs are not profitable. As an emerging Petrostate, South Africa's investments in an oil and gas sector are unlikely to be low enough to breakeven, never mind be profitable.

Additional Economic Risks and Decreased Macroeconomic Stability to be



Considered

30. The anticipated negative economic impacts (external costs) of developing a domestic offshore oil and gas sector at this juncture include, but are not necessarily limited to, the social costs of carbon, increasing sovereign debt and fiscal risk, a downgrade in our credit ratings (making capital more expensive), an increase in illicit financial flows and a reduction in our trade and competitiveness. These factors are likely to decrease South Africa's macroeconomic stability.

Increase in Sovereign Debt

31. The increase in sovereign debt levels in low- and middle-income countries is not only attributed to oil and gas dependency however **oil and gas production tends to exacerbate fiscal risks**. Petrostates tend to become locked into debt dependency because they tend to have increased fiscal dependence on oil and gas revenue, increasing their debt levels when the oil price is high because their credit ratings rise and hence make cheaper finance available, **and when it is low**, in order to fill their resulting fiscal gaps. It is likely that **the energy transition will further exacerbate the levels of sovereign debt** as countries credit ratings decline and debt becomes more expensive while also seeing revenue from oil and gas falling and debt servicing becoming more important.
32. South Africa's debt has ballooned and is expected to increase to 77.7% of GDP in the 2025/26 fiscal year. This limits government's ability to channel resources into the productive side of the economy as debt service costs are crowding out social spending as debt repayments form a greater share than social protection, health, community development, or economic development, with one in every



five rands being spent on servicing the debt. However, if SA has to take out further loans to develop an O&G sector, our debt and debt repayments would rise even more which could lead us to default on debt repayments and to shift into a full economic recession. If the oil and gas sector cannot deliver on increasing economic growth, as predicted with the increase in transition risk, it is questionable whether it is prudent to be investing in volatile commodities like oil and gas which could become a serious financial burden on the South African economy.

Downgrade in credit ratings

33. Credit ratings are described as **independent mechanisms to assess creditworthiness** or the ability – and willingness – **of debt issuers to meet repayment**. Credit ratings provide international investors with a rapid, standardised way to assess and price debt, and are particularly important for borrowing in international capital markets.
34. Although **fossil fuels** were once considered to be credit positive, credit ratings agencies now issue **specific warnings about the financial risks of fossil fuels** including oil and gas as these now face substantial financial risks. There has already been a trend emerging of petrostates' credit rates being downgraded. As petrostates earn less revenue from their oil and gas production, their **creditworthiness declines** i.e. they will have **lower credit ratings and thus borrowing on international capital markets will become more expensive** for these petrostates. The consequences are likely to be a devaluation of currency, rising debt levels, reduced access to capital markets and economic contraction leading to lower investor confidence.



35. South Africa's credit ratings have been somewhat volatile over the last decade and these ratings are lower than investment grade ratings, making it more expensive to borrow on international markets. It is likely that investment in the O&G sector in SA would result in credit ratings agencies further downgrading us, making it more challenging to borrow on international markets.

Increase in Illicit Financial Flows

36. **Illicit financial flows (IFFs)** are methods, practices and crimes aimed at **transferring financial capital out of a country, in contravention of laws.** IFFs include money laundering, bribery and tax evasion. Research indicates that the **extractive industries, like the oil and gas sector, are particularly prone to IFFs.** Illicit financial flows (IFFs) are difficult to measure due to their secrecy but it has been estimated that South Africa is losing more than \$62 billion a year because of illicit financial flows and tax evasion. It is likely that IFFs will take place in an oil and gas sector in South Africa where it is difficult to govern and measure extraction of oil and gas – which further impacts on the lack of profitability of an oil and gas sector and will reduce government take.

Decrease in trade and competitiveness

37. There has been an increasing focus on **climate measures to prevent the risk of carbon leakage** (i.e. the movement of production and associated emissions between countries due to different levels of decarbonisation effort through carbon pricing and climate regulation) and is designed to **support increased ambition on climate mitigation.** These are known as carbon border adjustment mechanisms (CBAMs) or taxes. However, South Africa's exports



are at particular risk and South Africa is vulnerable to changes in trade patterns arising from measures aimed at transiting to low-carbon pathways.

38. South Africa's exports are already very carbon intensive due to our carbon-intensive energy system and the country is a large exporter of fossil fuels. And as South Africa has a relatively long distance to its trading partners, this has implications for transport costs and associated greenhouse gas (GHG) emissions. The impact of CBAMs will be determined by the **carbon embedded production in goods that are traded**. Analysis by TIPS notes that under the EU CBAM, a total of US\$2.4 billion (about R45.4 billion) of South African exports (based on 2023 data) is at risk in the short term. The UK CBAM would have a smaller impact but would likely result in a total of US\$223 million (About R4.3 billion) of South African exports (based on 2023 data) being at risk in the short term.
39. Thus, if South Africa decarbonises its electricity systems more, the CBAMs will have less impact. However, if South Africa chooses to invest in an oil and gas sector, this will increase its carbon emissions and exports will be negatively impacted through these CBAMs, with substantial negative impacts on our Gross Domestic Product (GDP) and on employment.

Increase in the social costs of carbon

40. The social cost of carbon (SCC) is an estimate of the cost of the damage done by each additional ton of carbon emissions. It also is an estimate of the benefit of any action taken to reduce a ton of carbon emissions. Research estimates that the macroeconomic damages from climate change are six times larger than previously thought. The social cost of fossil fuel combustion for South Africa is



at least R550-billion a year and exceeds, by five times, the revenues government earns from fossil fuel combustion. The social cost includes deaths, disease and working days lost owing to air pollution and GHG emissions.

Decommissioning Costs Must be Factored into Economic Calculations

41. It is important to include the cost of decommissioning of offshore oil and gas infrastructure upfront in all financial decisions – otherwise these costs will be borne by the state and ultimately, by the South African taxpayers. For instance, the total cost of decommissioning UK offshore oil and gas production, transportation and processing infrastructure is estimated to cost £48bn. At present, there is no estimation of what decommissioning of oil and gas infrastructure costs will be for South Africa but these costs must be included in economic models.

Most likely economic scenario for South Africa's oil and gas sector

42. Based on the logic from other African countries, if South Africa were to find oil or gas in 2024, it would likely take at least until 2034 to start producing (but more likely in 2039) – and then South Africa would have a payback period of approximately 15 years (i.e. until 2049 or 2054) before the country would begin to see any profits on these investments. However, South Africa will need to shut operations due to climate change commitments by 2050 (if the global market for oil and gas even exists at that stage, which from the energy scenarios, seems unlikely).
43. During this time, South Africa is unlikely to see fiscal benefits such as increases in economic growth.



44. From a macroeconomic perspective if South Africa pursues an extractive oil and gas policy, it is likely that South Africa's levels of debt will increase and credit ratings are likely to drop further and due to the presource curse, these negative macroeconomic impacts are likely to take place before production begins, amplifying the knock-effect of poor decision-making.



GILLIAN KAY HAMILTON

I hereby certify that the deponent knows and understands the contents of this affidavit and that it is to the best of her knowledge both true and correct. This affidavit was signed and sworn to before me at Johannesburg on this the 11 day of November 2024, and that the Regulations contained in Government Notice R.1258 of 21 July 1972, as amended, have been complied with.

COMMISSIONER OF OATHS

Full names:

Address:

Capacity:



11 NOV 2024

SIGNATURE DATE

Commissioner of Oaths (RSA)
Toby Menezes
Owner 3@1 Blairgowrie
Ref: 42/11/2017
Shop 19A, Blairgowrie Plaza
Conrad Drive
Blairgowrie, 2194
District: Randburg