



# **Comments on the Department of Mineral Resources and Energy's**

**“Gas Masterplan Basecase Report”**

**31 January 2022**

**JUST SHARE**



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## Comments on the “Gas Masterplan Basecase report”

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### 1. Introduction

Just Share is a non-profit shareholder activism organisation. We believe that responsible investment is required to create a more just, inclusive and sustainable economy. We use research, advocacy, engagement and activism to drive urgent action to combat climate change and reduce inequality.

Below, we provide some preliminary comments on the Department of Mineral Resources and Energy’s (DMRE’s) “South African Gas Master Plan Basecase Report” published on 15 December 2021 for public input by 31 January 2022 (“the Basecase Report”).

The Basecase Report indicates that it aims to “establish baseline information for the natural gas sector in South Africa and to outline the Gas Master Plan roadmap”. It will “set the scene” for the Gas Master Plan; which “will serve as a policy instrument, providing a roadmap for taking strategic, political and institutional decisions which will guide industry investment planning and coordinated implementation”.

**The Basecase report does not outline the scientific, policy or regulatory basis for the assumption that the pursuit of significant gas development is an appropriate pathway for South Africa.**

Given the important stated purpose of the Basecase Report and its volume (some 100 pages), we wish to register our concern that such a limited time period, which coincided with the end-of-year holiday period, was made available for public comment. This is both unreasonable and unfair, and we reserve our rights to supplement these comments.

The Basecase Report claims that “natural gas will play a very important role in South Africa in the future”, and that South Africa’s “dependency on natural gas” will grow. It relies on various unsubstantiated and/or otherwise questionable claims to support an argument that gas “has the potential to completely change the economy by stimulating economic growth and development, stability, and job creation”.

This is not supported by any expert evidence and research, and runs counter to the urgent need to reduce greenhouse gas (GHG) emissions to limit the impacts of global heating. It is also not clear what consultation, if any, has been undertaken with other relevant government departments in the development of the Basecase Report; and what the outcomes of such consultations were. For instance, how has the DMRE reconciled its plans to exploit gas, with the country’s climate commitments, which will become increasingly more stringent?

Given the short timeframe, and the timing of the comment period, we have focused our submissions on the following issues, which are addressed below:



- Problematic sources for assumptions and projections.
- Gas is not “clean”, nor is it climate- or environmentally- friendly.
- Gas does not bring economic prosperity.
- The power sector does not require gas.

In the circumstances, and for the reasons set out below, the Basecase Report should be updated, to take into account the latest scientific evidence and information in relation to gas, as well as the outcomes of relevant modelling work (referred to below), and again made available for a reasonable comment period.

## 2. Problematic sources for assumptions and projections

In its opening sentence, the Basecase Report refers to the National Development Plan (NDP)’s aims for the South African energy sector by 2030. However, it elects to refer only to **part of one of the NDP’s three stated aims** (to promote economic growth and development through adequate investment in energy infrastructure). It does not refer to the rest of the “economic growth” aim, which includes to “provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation”.

The Basecase Report does not refer at all to the NDP’s other two stated aims: that, by 2030, the energy sector should promote:

- “social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households”; and
- “environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change”.

South Africa’s use of gas as envisaged by the Basecase Report will not meet the NDP goals for the energy sector.

Although the Basecase Report’s stated purpose is to establish baseline information for the fossil gas sector in South Africa and set the scene for the Gas Master Plan, it records, as a “limitation”, that it was prepared **without a tool to model the current gas sector in the country or develop immediate sector expansion scenarios**. We dispute that it is appropriate – or even possible – to reliably establish all relevant information about the fossil gas sector without a robust modelling tool.

The Basecase Report states that this work is “underway and will be published in due course, together with natural gas demand projections.” When this work has been published, we look forward to **a further opportunity for public input to be given**. The absence of robust modelling, which evaluates various scenarios, would preclude the development of a rational Gas Master Plan. There must also be an opportunity for public comment on that model and its results.

Due to this limitation, the Basecase Report has instead relied largely on projections made by industry (including BP, Sasol, the Industrial Gas Users Association, Southern Africa (IGUA-SA), the International Gas Union (IGU), the South African Oil & Gas Alliance (SAOGA), PASA, and



PetroSA. The Basecase Report also relies on various other unsubstantiated claims to argue that, *inter alia*, gas demand will grow and that gas has the “potential to completely change the economy by stimulating economic growth and development, stability, and job creation”. This is not supported by the facts and does not take into account any of the research conducted by independent institutions and civil society that disputes these claims.

The main sources of information relied on in the Basecase report include:

- Sasol: which operates the largest single point source of GHGs in the world (its Secunda factory),<sup>1</sup> and is the second biggest source of climate-changing GHGs on the African continent. The company’s recently released “net zero” transition plan relies heavily on the availability and exploitation of significant new supplies of fossil gas;<sup>2</sup>
- IGUA-SA: which is “a formal non-profit association of large industrial gas users in South Africa with its main objective to ensure the efficient availability of piped gas in Southern Africa to meet the growing demand for gas”;<sup>3</sup>
- SAOGA: which “is dedicated to promoting the upstream and midstream sectors of the oil and gas value chain, primarily in South Africa and regionally in Southern Africa”;<sup>4</sup>
- IGU: whose “more than 160 members … are associations and corporations of the gas industry representing over 95% of the global gas market”. Its mission is “to advocate gas as an integral part of a sustainable global energy system, and to promote the political, technical and economic progress of the gas industry”;<sup>5</sup>
- PASA: which “promotes exploration for onshore and offshore oil and gas resources and their optimal development on behalf of government”;<sup>6</sup> and
- PetroSA: which is the South African state-owned national oil company and a subsidiary of CEF SOC Limited (which reports to the DMRE). Its core business activities include: the exploration and production of oil and natural gas; the participation in, and acquisition of, local as well as international upstream petroleum ventures; the production of synthetic fuels from offshore gas at one of the world’s largest gas-to-liquid refineries in Mossel Bay; the development of domestic refining and liquid fuels logistical infrastructure; and the marketing and trading of oil and petrochemicals.<sup>7</sup>

It is in the interests of fossil fuel companies, and their associated industry associations, to motivate for the increased exploitation of gas.

The Basecase Report states that Sasol’s Pande and Temane gas supply to South Africa is expected to decline by September 2023 if additional investments to extend the production plateau are not approved.

<sup>1</sup> [https://www.sasol.com/sites/default/files/financial\\_reports/2020%20Sasol%20Sustainability%20Report%20-%202028%20August%202020%2010h30.pdf](https://www.sasol.com/sites/default/files/financial_reports/2020%20Sasol%20Sustainability%20Report%20-%202028%20August%202020%2010h30.pdf)

<sup>2</sup> <https://justshare.org.za/media/news/sasols-climate-change-report-2021-briefing-and-voting-recommendation-2>

<sup>3</sup> <https://www.igua-sa.org/>

<sup>4</sup> <https://www.saoga.org.za/web/homepage>

<sup>5</sup> <https://www.igu.org/about/>

<sup>6</sup> <https://www.petroleumagencysa.com/>

<sup>7</sup> [https://www.petrosa.co.za/discover\\_petroSA/Pages/Our-Company.aspx](https://www.petrosa.co.za/discover_petroSA/Pages/Our-Company.aspx)



A large portion of government planning and policy-making in relation to gas appears to be tailored towards preserving Sasol's role in the economy, regardless of the implications for national climate commitments, human health, environmental sustainability and national competitiveness.

**Claims and projections made by those with vested interests** must be carefully and objectively interrogated, and **compared and contrasted with independent analyses**.

### 3. Gas is not “clean”, nor is it climate- or environmentally-friendly

The Basecase Report states that “global decarbonisation strategies/pathways conclude that economy-wide fossil fuel consumption must drastically decrease over the next several decades”. However, **climate science demonstrates that rapid declines are required by 2030**.

In various instances in the Basecase Report, the claim is made that gas is clean, environmentally-friendly, and will help South Africa meet its climate change commitments. None of these claims is true.

Inexplicably, the Basecase Report makes **no mention of the landmark 2015 Paris Agreement, any of the Intergovernmental Panel on Climate Change (IPCC) reports, or of South Africa’s nationally determined contribution (NDC)** in terms of the Paris Agreement. Instead, it refers only to the outdated 2009 Copenhagen Accord.

The Basecase Report also **does not mention the Climate Change Bill**, which was tabled in Parliament last year. The Basecase Report states that “there are no signs of policy-driven emissions reductions in the near future for emissions-intensive subsectors as steel production and mining in context of the ongoing economic stagnation in South Africa”. That is not accurate. The Climate Change Act will require the Minister to set quantitative and qualitative GHG emission reduction goals in sectoral emission targets. The Act will also require the Minister to assign carbon budgets to GHG-emitters.

Nor does the Basecase Report demonstrate **whether – and if so, how – the gas ambitions it reflects will align with South Africa’s climate commitments in its NDC**, which will become increasingly stringent.

#### 3.1. Gas will not help South Africa to meet its climate goals

Climate change is accelerating rapidly, and will increasingly have profound implications for life on earth. Carbon dioxide (CO<sub>2</sub>) and methane (the largest component of fossil gas) are the two gases most responsible for the rate of warming observed over the past few decades.<sup>8</sup> Climate science demonstrates that limiting human-induced global warming to 1.5 degrees Celsius (°C) is essential to limit the worst impacts of the climate crisis. This will require **rapid, extremely ambitious emission cuts – including strong, rapid and sustained cuts to methane emissions from the extraction, production and burning of fossil gas**. Every fraction of a degree of warming will result in more dangerous and costly consequences.<sup>9</sup>

<sup>8</sup> IPCC, Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013).

<sup>9</sup> <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>



The 2018 **IPCC Special Report** found that meeting the 1.5 °C target is possible, but would require "deep emissions reductions" and "rapid, far-reaching and unprecedented changes in all aspects of society." In addition, "global net human-caused **emissions of CO<sub>2</sub> would need to fall by about 45 percent from 2010 levels by 2030, reaching 'net zero' around 2050". It also confirmed that the difference between 1.5 and 2 degrees of warming would have significant negative impacts.<sup>10</sup>**

The latest (August 2021) **IPCC Sixth Assessment Report (AR6)** of Working Group I (WGI) is clear that "limiting human induced global warming to a specific level requires limiting cumulative CO<sub>2</sub> emissions, reaching at least net zero CO<sub>2</sub> emissions, along with strong reductions in other greenhouse gas emissions".<sup>11</sup>

Since the world's warming is already most of the way to a 1.5°C increase, the remaining carbon budget is relatively small and rapidly shrinking. There is a substantial gap between global ambitions to pursue efforts to limit global average temperature to 1.5°C and the current state of emissions.<sup>12</sup> A **significant increase in 2030 mitigation pledge ambition and acceleration of action is required to get the world on a path consistent with the Paris Agreement temperature goal.**<sup>13</sup>

The crucial role that methane reduction plays in meeting the 1.5°C target is set out in the May 2021 **UNEP Global Methane Assessment Summary Report**.<sup>14</sup> The report states that **urgent steps must be taken to reduce methane emissions this decade**, and that **reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming and contribute significantly to global efforts to limit temperature rise to 1.5°C**. Among other important findings, the report states:

- over half of methane emissions are as a result of human activities, including the exploitation of fossil fuels, which takes up a 35% share;
- reducing methane emissions by 45% by 2030 will avoid nearly 0.3°C of warming by the 2040s, prevent 255 000 premature deaths, 775 000 asthma-related hospital visits and 73 billion hours of lost labour from extreme heat and 26 million tonnes of crop losses globally;
- methane reductions are also in line with multiple sustainable development goals; including climate action, zero hunger, good health and well-being;
- **the fossil fuel sector (oil, gas, coal) has the greatest potential for emission reduction;** and
- **"without relying on future massive-scale deployment of unproven carbon removal technologies, expansion of natural gas infrastructure and usage is incompatible with keeping warming to 1.5°C".**<sup>15</sup> (our emphasis).

<sup>10</sup> <https://www.ipcc.ch/sr15/>

<sup>11</sup> <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>

<sup>12</sup> <https://www.unep.org/resources/emissions-gap-report-2021>

<sup>13</sup> <https://wedocs.unep.org/bitstream/handle/20.500.11822/37350/AddEGR21.pdf>

<sup>14</sup> <https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions>

<sup>15</sup> [https://wedocs.unep.org/bitstream/handle/20.500.11822/35917/GMA\\_ES.pdf](https://wedocs.unep.org/bitstream/handle/20.500.11822/35917/GMA_ES.pdf)



The International Energy Agency (IEA)'s World Energy Outlook (WEO) 2021 confirms that a broad drive to cut methane emissions from fossil fuel operations is required. **Rapid reductions in methane emissions are a key tool to limit near-term global warming, and the most cost-effective abatement opportunities are in the energy sector, particularly in oil and gas operations.**

Methane abatement is not addressed quickly or effectively enough by simply reducing fossil fuel use; concerted efforts from governments and industry are vital to secure the emissions cuts necessary for the Net Zero Emissions by 2050 Scenario (addressed below). **Total methane emissions from all fossil fuel operations must fall by around 75% between 2020 and 2030.**<sup>16</sup>

At COP26, recognising the importance of methane reductions, over 100 countries (not South Africa) signed the Global Methane Pledge, committing to reduce their overall methane emissions by 30% by 2030, compared with 2020 levels.<sup>17</sup> However, as set out above, the IEA has indicated that **methane emissions will need to be cut by 75% by 2030** if the world is to reach net zero by 2050.<sup>18</sup>

Whilst some promising commitments were made at COP26, analyses of the conference's climate outcomes demonstrate that these will not be sufficient to limit global heating to 1.5°C. Parties are required to submit more ambitious NDCs at COP27 in late 2022.<sup>19</sup>

The lower limit of the range in South Africa's updated NDC (320 Mt CO<sub>2</sub>-eq) is consistent with South Africa's fair share of GHG emissions for a 1.5°C global pathway. The higher limit (420 Mt CO<sub>2</sub>-eq) is well above a 1.5°C trajectory.<sup>20</sup> South Africa will be expected to **include binding commitments - with end dates – for the phasing out of fossil fuels in its updated NDC.**

Southern Africa is **particularly vulnerable to climate change**, with warming in the interior of southern Africa occurring at about **twice the global average rate**. There have already been substantial changes in the number of extreme temperature events in southern Africa, and if climate mitigation efforts are low, or do not succeed, experts report that further drastic increases in events like heat waves, high fire-danger days and oppressive temperatures impacting on human comfort and health can be expected. There will be **enormous negative physical, socio-economic and ecological impacts for South Africa** under all climate change scenarios.<sup>21</sup>

To claim that gas will assist South Africa in reaching its climate ambitions is not supported by the evidence.

<sup>16</sup> <https://www.iea.org/reports/world-energy-outlook-2021>

<sup>17</sup> <https://www.globalmethanepledge.org/>

<sup>18</sup> <https://www.iea.org/reports/curtailing-methane-emissions-from-fossil-fuel-operations> ; <https://www.iea.org/reports/world-energy-outlook-2021>

<sup>19</sup> <https://www.carbonbrief.org/guest-post-how-cop26-finally-recognised-the-latest-ipcc-climate-science>; <https://www.carbonbrief.org/analysis-do-cop26-promises-keep-global-warming-below-2c>

<sup>20</sup> <https://cer.org.za/wp-content/uploads/2021/06/NDC-vs-fair-share-memo-v04-corrected-version.pdf>

<sup>21</sup> [https://cer.org.za/wp-content/uploads/2021/09/Climate-impacts-in-South-Africa\\_Final\\_September\\_2021.FINAL\\_.pdf](https://cer.org.za/wp-content/uploads/2021/09/Climate-impacts-in-South-Africa_Final_September_2021.FINAL_.pdf); <https://cer.org.za/wp-content/uploads/2021/09/Nick-King-Report-Final.pdf>



### 3.2. The impact of methane

In July 2020, the Global Methane Budget Update found that worldwide emissions of methane (the main component of fossil gas) had hit the “highest levels on record”.<sup>22</sup> Africa was amongst the regions with the highest increase.

Methane is a potent GHG.<sup>23</sup> After CO<sub>2</sub>, it is the second biggest contributor to human-caused global warming, responsible for about 30% of global warming to date. Per unit of mass, methane is 84-86 times stronger than CO<sub>2</sub> over 20 years and 28-34 times as powerful over 100 years.<sup>24</sup> Fossil methane has an atmospheric lifetime of about 12 years.<sup>25</sup> The “**climate impacts of gas are greater than those of coal per unit of energy produced when evaluated in a 20-year timeframe**, the period most relevant for climate change if humans are to avoid catastrophic runaway warming” (our emphasis).<sup>26</sup>

### 3.3. IEA Net Zero Pathway and World Energy Outlook, 2021

The IES’s Net Zero by 2050 Roadmap for the Energy Sector (“IEA’s Net Zero Pathway”) is at the heart of its **World Energy Outlook (WEO), 2021**. The WEO is “the energy world’s most authoritative source of analysis and projections”. It states that “**there is no need for investment in new fossil fuel supply in our net zero pathway**”. In relation to oil and gas in particular, the Roadmap states that: “**beyond projects already committed as of 2021, there are no new oil and gas fields approved for development in our pathway**”.<sup>27</sup>

Irrespective of whether or not gas supply and/or demand are increasing, the fact remains that there is **no carbon budget for gas** if we are to avoid the worst impacts of the climate crisis. The IEA’s Net Zero Pathway states that:

*The unwavering policy focus on climate change in the net zero pathway results in a sharp decline in fossil fuel demand, meaning that the focus for oil and gas producers switches entirely to output – and emissions reductions – from the operation of existing assets. Unabated coal demand declines by 98% to just less than 1% of total energy use in 2050. Gas demand declines by 55% to 1 750 billion cubic metres and oil declines by 75% to 24 million barrels per day (mb/d), from around 90 mb/d in 2020 (our emphasis).*

The CEO of PASA has stated her view, in various public fora, that the IEA Net Zero Pathway is not applicable to Africa because “there will be a differentiated approach to a clean energy future, taking into consideration the cost of the new clean energy technologies and the economic consequences of transitioning for each country. The IEA emphasises that each country must develop its own pathway to a net zero emission future”.<sup>28</sup>

<sup>22</sup> <https://www.globalcarbonproject.org/methanebudget/>

<sup>23</sup> <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

<sup>24</sup> [http://www.climatechange2013.org/images/report/WG1AR5\\_Chapter08\\_FINAL.pdf](http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf)

<sup>25</sup> Forster, P., et al. (2021). The Earth’s Energy Budget, Climate Feedbacks, and Climate Sensitivity. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press.

<sup>26</sup> <https://naturaljustice.org/wp-content/uploads/2021/05/FA-12-Howarth-RichardsBayReview.pdf>

<sup>27</sup> <https://www.iea.org/reports/net-zero-by-2050>

<sup>28</sup> <https://www.businesslive.co.za/bd/opinion/2021-09-05-phindile-masangane-sas-road-to-net-zero-emissions-will-be-via-gas/>



The Roadmap states that it provides a global view and that each country will need to take its own specific circumstances (and stage of economic development) into account in designing its own strategy as there is no “one size fits all approach to clean energy transitions”. However, nowhere does the IEA suggest that its modelling in relation to oil and gas does not apply to Africa. It also states that the pathway it provides is the “**most technically feasible, cost-effective and socially acceptable**”.

### 3.4. South Africa’s contribution to global heating

While Africa is responsible for less than 3% of global emissions, **South Africa** alone contributes about 1.5% of that. South Africa is the **12<sup>th</sup> largest emitter of GHGs globally**, with the **38<sup>th</sup> (thirty-eighth) largest per capita emissions (higher than China’s and India’s, and well-above the global-average)**.<sup>29</sup> It has the **most carbon-intensive economy in the G20 (more than double the global average)**,<sup>30</sup> and the **highest reliance on coal**.<sup>31</sup>

South Africa is home to Sasol’s Secunda-complex — the self-proclaimed single largest point-source GHG-emitter on earth<sup>32</sup> (with emissions bigger than some entire countries),<sup>33</sup> and to Eskom, the largest GHG-emitter in Africa.

For all of these reasons, it cannot be argued that gas will help South Africa reduce its emissions or meet its climate commitments. It also will not “completely change the economy by stimulating economic growth and development, stability and job creation”. These claims are addressed next.

## 4. Gas does not bring economic prosperity

The Basecase Report claims that gas will stimulate the economy, and enable social upliftment; including providing jobs, skills development, improved quality of life, and poverty eradication and crime reduction. For instance, it claims (without any evidence to support these dramatic assertions) that “the economy of South Africa can capture real benefit from developing natural gas resources, generating employment (directly and indirectly), increasing GDP (directly and indirectly), increasing foreign direct investments and with potential future exports, increase the inflow of foreign currency, stemming both from the extraction and utilization of natural gas”. This is not borne out by the facts; including South Africa’s history of heavy fossil fuel exposure.

SA is one of the most unequal countries in the world,<sup>34</sup> with staggeringly high unemployment rates (34,4%).<sup>35</sup> The country faces severe climate transition risks – some

<sup>29</sup> <http://www.globalcarbonatlas.org/en/CO2-emissions>

<sup>30</sup> [https://www.pwc.co.uk/services/sustainability-climate-change/insights/netzero-economy-index.html](https://www.pwc.co.uk/services/sustainability-climate-change/insights/net-zero-economy-index.html) While carbon intensity decreased by 2.4% globally in 2019, SA recorded an increase in carbon intensity of 1.3%, the second consecutive year of increase.

<sup>31</sup> <https://ember-climate.org/global-electricity-review-2021/g20-profiles/south-africa/> 86% of the country’s electricity was produced from coal in 2020. The global average is 34%, and India is second to SA, generating 71% of its electricity from coal.

<sup>32</sup> [https://www.sasol.com/sites/default/files/financial\\_reports/2020%20Sasol%20Sustainability%20Report%20-%202028%20August%202020%2010h30.pdf](https://www.sasol.com/sites/default/files/financial_reports/2020%20Sasol%20Sustainability%20Report%20-%202028%20August%202020%2010h30.pdf)

<sup>33</sup> <https://ourworldindata.org/grapher/annual-co2-emissions-per-country?tab=table>; <http://www.globalcarbonatlas.org/en/CO2-emissions>

<sup>34</sup> <https://www.worldbank.org/en/country/southafrica/overview>

<sup>35</sup> [http://www.statssa.gov.za/publications/P0211/Presentation%20QLFS%20Q2\\_2021.pdf](http://www.statssa.gov.za/publications/P0211/Presentation%20QLFS%20Q2_2021.pdf)



USD120 billion between 2013 and 2035, which are expected to accelerate from the mid-2020's.<sup>36</sup> Our economy is particularly vulnerable to trade-related climate change risks arising from measures aimed at transiting to low-carbon pathways.<sup>37</sup>

In other words, although South Africa has been mining and producing fossil fuels for almost two hundred years, we are also one of **only a very few countries in the world that has both high per capita carbon emissions and high levels of extreme poverty.**<sup>38</sup> This demonstrates that we have systematically failed to convert high emissions into improved living conditions for the vast majority of the population, thanks to pervasive and persistent economic structures that were established by the colonial and Apartheid regimes.

The government of South Africa has failed to deliver on decades of promises to address poverty, inequality and joblessness. A contributing factor to this failure is the inherent racism and entrenched inequality of the minerals-energy complex on which the South African economy is based. **There is no evidence to show that continued investment in fossil fuels - such as gas - will lead to a different outcome, especially in circumstances where renewable energy is now the most cost effective and easily deployable source of energy.** It is inexplicable that the government of a country with such enormous energy and poverty challenges would deliberately choose to follow a path which will almost certainly entrench and worsen existing inequalities.

There is no shortage of reports explaining how the already-dire risks to our carbon-intensive economy would become even more severe if we were to invest in new fossil fuels. "As climate limits drive an accelerating global energy transition, the falling costs of renewable energy will squeeze the whole gas supply chain, creating financial risks for investments in both producing and consuming facilities. Meanwhile, long-lived infrastructure can lock an economy into a carbon-intensive development path that is difficult to leave. Countries are in danger of being left behind in the global energy transition, saddled with stranded assets, more expensive energy, dependence on imports, and trading disadvantages"<sup>39</sup> (our emphasis).

The Basecase Report states that shifting to the upstream sector "will have a significant economic benefit for the country, since most costs in the value chain are within the upstream sector due to the high capital expenditure associated with exploration and production activities". It also comments that Treasury could benefit by using locally produced gas as transport fuel – "as opposed to conventional fuels which are imported at the marginal level (or manufactured from imported crude oil, which represents 90% of their manufactured value)".

As the **International Institute for Sustainable Development** (IISD) points out, some countries plan to increase their domestic gas production to reduce dependence on imports or generate

<sup>36</sup> <https://www.climatepolicyinitiative.org/publication/understanding-the-impact-of-a-low-carbon-transition-onsouth-africa/>

<sup>37</sup> <https://www.tips.org.za/research-archive/sustainable-growth/green-economy-2/item/3895-the-globalclimate-change-regime-and-its-impacts-on-south-africa-s-trade-and-competitiveness-a-data-note-on-southafrica-s-exports> This situation is largely a function of: a) the country's carbon-intensive energy system; b) poor energy efficiency performance; and c) the key role played by energy-intensive industries in SA's economy. The country's vulnerability is also reinforced by the absence of an ambitious climate change framework, SA's relatively long distance to its trading partners and the status of emerging economy and upper-middle-income country (exemptions at the international level are likely to be granted solely to low- income countries and, to some extent, to lower-middle-income countries. Given SA's international status, it is likely that the country will not be treated as leniently as low/lower-middle countries)

<sup>38</sup> <https://ourworldindata.org/grapher/co-emissions-per-capita-vs-the-share-of-people-living-in-extreme-poverty>

<sup>39</sup> <https://www.iisd.org/system/files/2021-06/natural-gas-finance-clean-alternatives-global-south.pdf>



export revenue or to reduce dependence on imports. But, as global markets change, these become increasingly risky investments:

*Evidence of the resource curse suggests racing to stay ahead of the energy transition is likely to lead to disappointment: without taking time to build institutions and domestic supply chains, much of the revenues and jobs will flow overseas. Ironically, domestic gas production can increase dependency on imports by creating public expectations and political pressure for gas subsidies, which then encourages consumption to grow faster than production. Rapid gas development in Mozambique is already showing signs of a “pre-source curse” through deepening public debt, increasing militarization, and exacerbation of militia violence<sup>40</sup> (our emphasis).*

**Oil Change International** and others have pointed out that “poor contract terms, industry-friendly subsidy and royalty frameworks, debt traps, corruption, and the outsized ownership of fossil resources by multinational corporations have all meant **fossil fuel production in Africa has not historically served as a vehicle for just development, energy access, or resource sovereignty**. As the industry faces increasing systemic financial risks, the possibility that it ever could promote just development has faded. **Governments choosing to pursue new oil, gas, and coal extraction now risk locking themselves out of a transition to renewable energy and other green sectors**”<sup>41</sup> (our emphasis).

The Oil Change International report states that, over the next thirty years, 60% of projected gas production will be owned by multinational corporations. When assessing only the production from new projects, 66% is owned by international corporations, with Total, Eni, ExxonMobil, and BP in the lead. In addition, as a whole, **Africa’s extractive sectors employ less than 1% of Africa’s workforce, with few permanent and well-remunerated jobs for local populations. African countries also export almost all the oil, gas, and coal they extract.**

Current and planned pipeline and port infrastructure have been designed with the intention of supplying overseas markets - rather than addressing energy poverty in Africa. Communities near extraction have faced **displacement, serious health impacts, job losses as farmland, fisheries, or tourism prospects are damaged, human rights abuses, environmental degradation, and increased violent conflict and militarization**.<sup>42</sup>

Although, in relation to South Africa, the Basecase Report acknowledges that “the presence of significant amount of gas reserves in a country can increase corruption, which is one of the side effects known globally as the “resource curse”, presenting a potential barrier for foreign gas companies to invest”, it neglects to mention the severe impact of this “curse” on other African countries. Instead, it states that sourcing gas from Zimbabwe, Mozambique, Namibia and Botswana would be “ideal”, due to their proximity, and that South Africa also has opportunities for regional supply from Angola and Tanzania.

The Basecase Reports paints a particularly optimistic picture of gas in Mozambique; one which is not borne out by the facts.

<sup>40</sup> <https://www.iisd.org/publications/natural-gas-finance-clean-alternatives-global-south>

<sup>41</sup> <http://priceofoil.org/content/uploads/2021/10/Skys-Limit-Africa-Report-2021.pdf>

<sup>42</sup> <http://priceofoil.org/content/uploads/2021/10/Skys-Limit-Africa-Report-2021.pdf>



#### 4.1. Mozambique is not a gas success story

Mozambique is home to Africa's three largest liquefied natural gas (LNG) projects: the Mozambique LNG Project (Total, formerly Anadarko) worth \$20bn, Coral FLNG Project (ENI and ExxonMobil) worth \$4.7bn, and Rovuma LNG Project (ExxonMobil, ENI and CNPC) worth \$30bn.<sup>43</sup> Pande-Temane is an onshore gas field in southern Mozambique, far smaller in scale than the LNG projects. It was developed in 2004 by a consortium led by Sasol, and the vast majority of the gas produced is exported via pipeline to South Africa.

The Basecase Reports holds Mozambique up as an example of positive impacts from gas. It claims that South Africa's purchase of gas from Mozambique, through Sasol Gas, impacted positively on both the Mozambican and South African economies; including by providing employment for over 46 000 South Africans. We note that a 2019 IGUA-SA report is referenced by the DMRE as the source for this employment figure. Although we have been unable to obtain a copy of this IGUA-SA report to assess how it calculated this large figure, we note from its 2019 Interim Report<sup>44</sup> that what IGUA-SA has, in fact, stated, is that "the top ten industrial gas users in South Africa" employ more than 46 000 people.<sup>45</sup> This is not what the Basecase Report reflects.

The Basecase Report describes how other Mozambican projects "offer significant opportunities for South African industrial players to ramp up their capacity and supply a wide variety of value-added products into these projects". It claims that "the Production Sharing Agreement (PSA) licence is set to bring about the next wave of development, supporting the Mozambican Government's drivers for in-country monetisation, energy security, further industrialisation and skills development".

In addressing the civil war that began in October 2017 in Cabo Delgado, the Basecase Report states only that "the evolution of the security situation in the north of the Cabo Delgado Province", is "likely to affect the timeline of the [Total LNG] project".

In fact, nearly 2 900 people were killed and most of the population around Cabo Delgado were displaced by early June 2021.<sup>46</sup> What drove the conflict is complex, rooted in economic and political grievances driven by poverty and deep inequalities. These include grievances over unequal access to opportunities from resources; including fossil gas and gemstones.<sup>47</sup> When the insurgency began, farmers, fishers and artisanal miners, displaced by gas companies and mines, joined in the fighting. In December 2020, insurgents reached the development zone, and on 1 January 2021 Total withdrew its staff and halted work on the project.<sup>48</sup>

The Total CEO personally told Mozambican President Filipe Nyusi that Total would only return if Mozambique could guarantee security in a 25 km cordon around the gas project on the Afungi Peninsula. On 22 March 2021, President Nyusi promised Total this security. As a result, Total agreed to resume construction. However, two days later, insurgents occupied Palma, which is within the security cordon. Total withdrew its staff again. On 26 April 2021, Total declared "force

<sup>43</sup> <https://www.aljazeera.com/opinions/2020/2/24/gas-rich-mozambique-may-be-headed-for-a-disaster>

<sup>44</sup> [https://www.igua-sa.org/wp-content/uploads/2019/07/IGUA-SA\\_interimreport2019\\_web.pdf](https://www.igua-sa.org/wp-content/uploads/2019/07/IGUA-SA_interimreport2019_web.pdf)

<sup>45</sup> At page 5.

<sup>46</sup> <https://www.accord.org.za/conflict-trends/ignoring-the-roots-of-mozambiques-war-in-a-push-for-military-victory/>

<sup>47</sup> <https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>

<sup>48</sup> <https://www.accord.org.za/conflict-trends/ignoring-the-roots-of-mozambiques-war-in-a-push-for-military-victory/>



majeure" to halt the project, stating that it would only return if Mozambique ended the war.<sup>49</sup> This project remains halted.

Despite the various gas investment projects, **Mozambique remains one of the poorest, least-developed and most heavily-indebted countries in the world**. The International Monetary Fund predicted in 2016 that, assuming production and export of Mozambican LNG started in 2021, the "average real GDP growth rate between 2021 and 2025 could reach 24%". Project proponents enthused that gas would "catapult Mozambique to a middle-income country" and that the economic windfall of the gas production would be "tremendous". The IMF projected that, over the LNG projects' lifetime, total fiscal revenue could reach half a trillion dollars.

It was claimed that, in 2021 alone, GDP growth would surge 34%: "for Mozambique – one of the poorest countries in the world with an annual GDP of just \$14 billion – this revenue would be transformational". In addition to government revenues, gas production was also expected to support wider economic development and industrialisation in the country, address energy needs, and support local businesses and jobs, "while earnings from the project could be re-invested to diversify into other promising sectors such as agriculture and tourism".<sup>50</sup>

In reality, as independent think-tank **E3G** notes, **Mozambicans are now on average poorer than they were a decade ago**. Cabo Delgado, where the gas projects are based, and which is the site of the ongoing violent conflict, has been hit the worst: **in the last 5 years, household spending has dropped by 38%. If they materialise at all, revenues from gas are predicted to be half of what the Mozambican energy ministry claims**. In sharp contrast to the IMF's projections in 2016 for 34% GDP growth in 2021, **actual economic growth in Mozambique is likely to be around 2.5%. In the decade since gas was discovered, annual growth rates have progressively fallen and Mozambique's fiscal space has shrunk considerably. External debt as a proportion of GDP has trebled since the initial gas discovery, reaching 91% in 2021**.<sup>51</sup>

It is extraordinary that the Basecase Report refers to Mozambique as a gas success story which South Africa should emulate.

Climate disasters (like the 2019 cyclones Idai and Kenneth) and the Covid crisis have reduced Mozambique's fiscal space even further. These cyclones caused over \$3bn in economic losses, and in 2020, the Covid crisis pushed Mozambique into an economic contraction. **Conflict, corruption and economic distortion have meant that the promised economic benefits of gas projects have not materialised**. Local businesses confirm that they are **not seeing the expected benefits from local content provisions in the gas exploration contracts**.

Although industrial projects for fertiliser and gas-to-liquids had been planned in order to take advantage of domestic gas allocations, long before Total declared 'force majeure' for its project, **sponsoring companies abandoned these investments as uneconomic**. Since **most of the domestic gas allocation will be sold overseas, new gas production will likely not directly support increased energy access in Mozambique**. In any event, the chief reason that 70% of

<sup>49</sup> <https://www.accord.org.za/conflict-trends/ignoring-the-roots-of-mozambiques-war-in-a-push-for-military-victory/>

<sup>50</sup> <https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>

<sup>51</sup> <https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>



Mozambican households lack electricity access, is not an absence of power generation capacity, but a lack of grid connection, particularly in rural areas.<sup>52</sup>

To make things worse for countries like Mozambique, the global shift in climate and energy policies means that the **outlook for future gas demand is shrinking. This increases the downside risks of the gas projects, and greatly reduces the potential benefits.** In turn, lower revenues will narrow the options for responding to resource curse issues and addressing Mozambique's pressing development needs.

In other words, Mozambique will be **left with likely stranded assets and no resources to support an alternative development pathway.** The focus on gas has also **diverted attention and resources from investment in renewable energy, for which Mozambique has some of the highest potential in the world.**<sup>53</sup> It is arguable that this is also already the case in South Africa.

The Basecase Report is clearly incorrect in its claim that gas in Mozambique has resulted in positive outcomes for the people of Mozambique.

#### 4.2. Low-emissions, climate-resilient energy future needed

Africa holds 39% of the world's total renewable energy potential.<sup>54</sup> There is a wealth of evidence that demonstrates that **rapid and extensive scaling up of renewable energy generation is the most cost-optimal energy pathway for the continent, and presents significant economic benefits and opportunities.**<sup>55</sup>

Also in relation to **energy access, gas is a poor solution.** Of the 800 million people worldwide who lack electricity, 85% live in rural areas where distributed renewable energy is better able to provide electrification more quickly and at a lower cost.<sup>56</sup>

The **Presidential Climate Commission**, a multi-stakeholder body established by the President to advise the country's climate change response and pathways to a low-carbon climate-resilient economy and society, has conducted extensive research and hosted a number of expert presentations and stakeholder engagement sessions. It confirms that the research is clear that the **transition towards low-emissions and climate-resilient development will create new and better jobs, grow the economy, help protect the environment, and improve human health.**<sup>57</sup>

<sup>52</sup> <https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>

<sup>53</sup> <https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>

<sup>54</sup> Kingsmill Bond et al. The Sky's the Limit: Solar and wind energy potential is 100 times as much as global energy demand, Carbon Tracker, 2021, <https://carbontracker.org/reports/the-skys-thelimit-solar-wind/>

<sup>55</sup> See, for example: <https://meridianconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf> ; [https://meridianconomics.co.za/wp-content/uploads/2021/03/Financial-support-needs-for-MP-JustTransition\\_final\\_2.pdf](https://meridianconomics.co.za/wp-content/uploads/2021/03/Financial-support-needs-for-MP-JustTransition_final_2.pdf) ; <https://meridianconomics.co.za/wp-content/uploads/2020/08/Power-sector-carbonbudgets-2020-v1.1.pdf> ; [https://meridianconomics.co.za/wp-content/uploads/2021/04/NDCSubmission\\_Meridian-Economics.pdf](https://meridianconomics.co.za/wp-content/uploads/2021/04/NDCSubmission_Meridian-Economics.pdf) ; <https://www.sapvia.co.za/wp-content/uploads/2021/05/SAPVIA-PV-Industry-Jobs-Study-Report-COMBINED.pdf>; <https://www.foei.org/wp-content/uploads/2021/08/Friends-of-the-Earth-Just-Recovery-Renewable-Energy-Plan-for-Africa-2021.pdf> ; <http://priceofoil.org/content/uploads/2021/10/Skys-Limit-Africa-Report-2021.pdf>

<sup>56</sup> For eg: <https://www.iisd.org/publications/natural-gas-finance-clean-alternatives-global-south>; <http://priceofoil.org/content/uploads/2021/10/Skys-Limit-Africa-Report-2021.pdf>

<sup>57</sup> Presidential Climate Commission. Laying the Foundation for a Just Transition Framework for South Africa, December 2021.



The jobs most at risk in the transition in the near term are in the mining, petrochemical, electricity, agriculture, and tourism sectors, but these losses could be offset by the build-out and consistent roll-out of renewable energy projects, combined with localisation of the manufacturing value chain. New jobs will also result from transition to a net-zero emissions economy, as this will require enormous investment and create markets for new commodities.

To fully embrace the opportunities presented by the transition, the targeted workforce will require training and reskilling. The Presidential Climate Commission confirms that opportunities for maximising job creation can arise through, for example, switching to electric vehicle production; investment in peaking power; green fuels like hydrogen; minerals to support the green economy; infrastructure investment in power and transport; and the emergence of South Africa as the green finance hub for Africa.<sup>58</sup>

In the circumstances, the Basecase Report is incorrect to represent gas as a positive economic influence, with broader societal benefits. It is quite the opposite.

The Basecase Report envisages the following evolution of the South African gas market: “initial gas demand and the development of a gas market will likely be stimulated by LNG-based gas supply, creating larger anchor demand that would trigger investments into additional gas infrastructure. Following this, related investments into indigenous conventional (offshore) and unconventional (onshore) gas explorations will occur, supplemented with increasing volumes of imported piped gas”.

As set out above, a renewables-heavy future is essential, and dramatically ramping up renewable investment is increasingly urgent. Electricity is the easiest and cheapest sector to decarbonise. **It appears that the DMRE wants to create an artificial gas market by using the electricity sector as an “anchor tenant” to stimulate gas demand. This would clearly undermine South Africa’s decarbonisation trajectory.**

## 5. The power sector does not require gas

The Basecase Report states that a “challenge in developing the gas sector is to bring gas demand and supply on stream at the same time and spread geographically to stimulate broader localized demand through South Africa. Without such localized gas demand, it is difficult to develop distributed gas supply and without such distributed gas supply it is difficult to develop localized gas demand”.

It states that South Africa’s plan for “breaking this impasse is to create significant “anchor” gas demand through the development of a gas-to-power programme”. In pursuit of “adding generating capacity, lowering carbon emissions, enhancing energy security and supporting industrial development, South Africa has taken the first steps in a gas-to-power programme to be executed under the Integrated Resource Plan for Electricity 2019 (“the IRP”), aiming to increase the national energy mix natural gas contribution from 2.6% to 15.7% by 2030”. The Basecase Report claims that “power generation represents one of the most economically attractive, low-risk and urgent demand sectors for natural gas supplies”.

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<sup>58</sup> Presidential Climate Commission. Laying the Foundation for a Just Transition Framework for South Africa, December 2021.



In reality, gas will not lower emissions or support development, and is not necessary for enhancing energy security. It is high risk and economically unattractive.

The Basecase Report states that “globally, the gas industry sector is set to replace power generation as the main driver of growth... Natural gas use in transportation is also expected to grow strongly by 3.3% per annum predominantly within long-distance road haulage and marine, while gas demand in residential and commercial sectors will benefit from the ongoing coal-to-gas switch ...Residential and commercial demand will also be driven by the desire to switch from electricity to more a (sic) reliable form of energy, such as natural gas”.

The Basecase Report sets out various options in relation to gas power generation; including:

- converting the existing 6 Open Cycle Gas Turbine (OCGT) peaking plants from diesel to gas;
- converting mothballed coal-fired power plants to run on gas;
- the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) launched in 2020 with the stated aim of alleviating the existing short-term electricity supply constraint and reducing extensive utilisation of diesel peaking generators. The RMIPPPP includes LNG as part of the Preferred Bidders’ technology range and allows for 20-year Power Purchase Agreement (PPA) terms;
- leasing, upgrading and converting Rooiwal and Pretoria West coal stations from anthracite to gas; and
- new gas plants envisaged in the 3000MW of gas in the IRP.

**Most of South Africa’s emissions are from our power generation, and electricity is the easiest and cheapest sector to decarbonise. Bringing fossil gas into the power system is irrational and arguably unconstitutional.**

The wholly-outdated IRP includes 1500MW of new coal power and 3000MW of new gas power, in circumstances where this is **neither least cost, nor required for energy security**.<sup>59</sup> Litigation has been instituted against the South African government, demanding that it abandon plans to build 1 500MW of new coal-fired power on grounds that new coal-fired power poses significant unjustifiable threats to constitutional rights.<sup>60</sup> There will also **continue to be widespread opposition - as there has been to the RMIPPPP – to all future gas-to-power plants and related infrastructure.**

In July 2020, a Ministerial Determination was gazetted with the intention of procuring 2000MW of power on an expedited basis, under the RMIPPPP. This process has been mired in controversy

<sup>59</sup> <https://cer.org.za/news/no-decisions-about-our-energy-future-without-transparency-says-groundwork>; <https://cer.org.za/news/environmental-justice-organisations-condemn-sas-plans-for-more-coal-electricity>; <https://cer.org.za/news/cer-attorneys-to-warn-mps-of-the-dangers-of-new-coal-in-the-irp>; [https://cer.org.za/wp-content/uploads/2020/05/Life-After-Coal-Comments\\_Determination-NERSA-Consultation-Paper-2\\_7.5.20.docx.pdf](https://cer.org.za/wp-content/uploads/2020/05/Life-After-Coal-Comments_Determination-NERSA-Consultation-Paper-2_7.5.20.docx.pdf); [https://cer.org.za/wp-content/uploads/2020/11/Letter-to-Minister-Mantashe\\_Request-for-Determination-Reasons-13-10-20.pdf](https://cer.org.za/wp-content/uploads/2020/11/Letter-to-Minister-Mantashe_Request-for-Determination-Reasons-13-10-20.pdf)

<sup>60</sup> <https://cer.org.za/news/youth-led-cancelcoal-climate-case-launched-against-governments-plans-for-new-coal-fired-power>



and excessive delays. The RMIPPPP has stalled, and it is clear that no power will be expeditiously procured under the RMIPPPP.

An **adequate supply of low-cost and decarbonised electricity is critical to South Africa's future prosperity. An increase of electricity generation between two and three times will likely be needed to decarbonise hard-to-abate sectors.**<sup>61</sup>

For a stable electricity system, supply and demand through the grid must be balanced. Whilst gas plants can provide flexibility to the system, as set out below, several expert studies confirm that stored energy (whether through batteries or options like ice, pumped hydropower, heat, chilled water and electrochemical, and gravity storage) could also play that role.

In most countries for which data are available, **wind and solar generate power at a lower cost than gas**. The cost of battery and other energy storage options is also falling rapidly, and in some countries, the combined cost of wind or solar with batteries is less than that of flexible “peaker” gas plants. The greater consistent sunlight that tropical countries receive gives them a strong advantage – this makes solar energy strongly pairable with batteries, resulting in less need for longer-term storage. In any event, at the low penetration levels currently seen in most of the Global South, grid management needs for integrating renewables are modest and low-cost. This means that existing, well-tested approaches will suffice until renewable penetration increases, by which time storage costs will have fallen further.<sup>62</sup>

The **most recent studies indicate that gas is not required in the electricity system**. Studies by **CSIR**, “Systems analysis to support increasingly ambitious CO<sub>2</sub> emissions scenarios in the South African electricity system” (“the CSIR Report”)<sup>63</sup> and **Meridian Economics**, “A Vital Ambition: Determining the cost of additional CO<sub>2</sub> emission mitigation in the SA electricity System” (“the Meridian Report”)<sup>64</sup> clearly demonstrate that a **rapid build-out of solar and wind generation is the least-cost scenario for the South African electricity sector in the near term. During low generation hours for renewable energy, pumped hydro storage and batteries will provide flexible capacity to the grid**. The **Meridian Report** also found that “[p]eaking requirements can be provided by liquid fuels for at least the next 10 years in all [modelled] scenarios,” and thus “**RSA does not need to expand gas infrastructure to support the power sector for the foreseeable future.**”

In short, the Meridian and CSIR reports affirmed that, for at least the next decade, **new gas capacity is not needed to meet demand and prevent load-shedding**. As a result, the **decision of whether to develop new gas infrastructure “can wait for 10 – 15 years” and “[t]he option to delay this decision has immense value for the country – we do not need to lock into long term gas commitments for the power sector now.**” During the next decade or so, “costs for stationary storage, solar PV and wind could [become] significantly cheaper.”

<sup>61</sup> Bataille, C. G. F. (2020). Physical and policy pathways to net-zero emissions in industry. WIREs Climate Change, 11(e633); International Energy Agency (IEA). (2020). Energy Technology Perspectives 2020. Report, September 2020.

<sup>62</sup> See, for example: [https://wwfafrica.awsassets.panda.org/downloads/fossil\\_gas\\_factsheet.pdf](https://wwfafrica.awsassets.panda.org/downloads/fossil_gas_factsheet.pdf)

<sup>63</sup> <https://researchspace.csir.co.za/dspace/handle/10204/11483>

<sup>64</sup> <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>



In its **submissions on the draft updated NDC**,<sup>65</sup> **Meridian Economics** sets out the following key messages:

- South Africa can **significantly accelerate its electricity sector transition ambition** beyond the IRP 2019, putting the country on track to align with the Paris Agreement goals and reap massive socio-economic benefits domestically.
- Committing to this acceleration will put the country in “pole position” amongst emerging coal-dependent economies to secure large-scale climate finance to manage the unavoidable transition costs of moving away from legacy coal dependency.
- A **bold level of electricity sector mitigation ambition will be required to secure this large-scale climate finance assistance**. However, this ambition simultaneously **mitigates the high systemic risk of South Africa’s carbon-intensive economy, provides a large green economic stimulus**, and comes at no greater cost than that of the current IRP 2019.
- Given that the bulk of mitigation required during the implementation period of the first NDC comes from electricity, the offer of an accelerated electricity transition would enable South Africa to reduce the lower bounds of its 2025 and 2030 mitigation targets.
- As a result, South Africa’s mitigation climate finance requirements would be commensurately increased, and front-loaded in the first half of the first NDC implementation period.
- In addition, “the contribution of a large renewable energy roll-out to South Africa’s green industrialisation, and its support for a just transition can further be maximised by industrial policy initiatives such as the South African Renewable Energy Masterplan which aims to localise most of the renewables value chain, including in regions that are negatively impacted by the coal transition.”<sup>66</sup>

As indicated above, gas is an inferior solution to the energy access problem. Of the 800 million people worldwide who lack electricity, 85% live in rural areas where distributed renewable energy is, in most cases, better able to provide electrification at a lower cost. To provide clean cooking fuels for the 3 billion people who use dangerous solid biomass, costly plans to expand natural gas connections to residential consumers will be out-competed by electric solutions, due both to reductions in the cost of renewables and improvements in the efficiency of electric stoves and cooking devices.<sup>67</sup> **Renewable energy is the cheapest and quickest way to provide energy access.**

In summary, most recent studies indicate that South Africa could - and should - adopt an energy mix with substantially less gas than the IRP, and at a lower cost. To reiterate: **The least-cost option for South Africa is the rapid and extensive scaling up of renewable energy generation**, which also presents **significant economic benefits and opportunities**.<sup>68</sup> **The most**

<sup>65</sup> [https://meridianeconomics.co.za/wp-content/uploads/2021/04/NDC-Submission\\_Meridian-Economics.pdf](https://meridianeconomics.co.za/wp-content/uploads/2021/04/NDC-Submission_Meridian-Economics.pdf)

<sup>66</sup> [https://meridianeconomics.co.za/wp-content/uploads/2021/04/NDC-Submission\\_Meridian-Economics.pdf](https://meridianeconomics.co.za/wp-content/uploads/2021/04/NDC-Submission_Meridian-Economics.pdf)

<sup>67</sup> <https://www.iisd.org/publications/natural-gas-finance-clean-alternatives-global-south>;

<http://priceofoil.org/content/uploads/2021/10/Skys-Limit-Africa-Report-2021.pdf>

<sup>68</sup> See, for example: <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>;  
[https://meridianeconomics.co.za/wp-content/uploads/2021/03/Financial-support-needs-for-MP-Just-Transition\\_final\\_2.pdf](https://meridianeconomics.co.za/wp-content/uploads/2021/03/Financial-support-needs-for-MP-Just-Transition_final_2.pdf) ; <https://meridianeconomics.co.za/wp-content/uploads/2020/08/Power-sector-carbon-budgets-2020-v1.1.pdf>



**optimal pathway** is for South Africa is to build out renewable energy and hold off on any decisions for the build-out of gas. This least-cost scenario also avoids locking South Africa into building expensive gas infrastructure and concluding long-term LNG fuel purchase commitments.

If South Africa pushes ahead with gas development, it will **not be producing any gas commercially before at least 2030** (and this is an optimistic projection). **Renewable-based alternatives for most gas uses are either already cheaper or are expected to be cheaper before the end of this decade.**

Although South Africa must scale up GHG mitigation measures in all sectors of the economy if it is to realise the goals of the Paris Agreement, the **energy sector is responsible for the bulk of emissions**, and is the **easiest to decarbonise**. An ambitious electricity sector transition plan, aligned to the Paris Agreement goals, provides the potential for a **massive post-Covid green stimulus**, based on **accelerated clean energy investment, localisation of value chains, and resolution of South Africa's chronic power shortages**. This would both mitigate the risk posed to the South African economy, and to constitutional rights, through its carbon intensity, and bring enormous economic benefits for people in South Africa.

In these circumstances, it is irrational and arguably unconstitutional for South Africa to attempt to “create gas demand” through power generation. These plans should be abandoned.

## 6. Conclusion

It is **irrational to continue to invest in fossil fuels, as these are not least-cost, sustainable, nor required for energy security**. New fossil fuel projects, as envisaged in the IRP, will lock the country into many more decades of harmful air pollution, environmental degradation, and GHG emissions, which already have an extremely negative impact on the health, well-being and socio-economic conditions of millions of people living in Mpumalanga and Gauteng, in particular. The Basecase Report also sets out a pathway which would seriously hamper SA’s ability to meet ambitious emission reduction targets in the future.

To create a more inclusive, sustainable future, and to stimulate a just recovery from Covid-19, plans for unnecessary and harmful new fossil fuel projects must be cancelled, there must be a massive increase in funding and policy certainty for renewable energy and sustainable infrastructure, and GHG emitters must be held accountable for their impacts, and must set science-based decarbonisation strategies and emission reduction targets.

The Basecase Report should be amended to reflect these realities. No indication is given regarding the next steps for the Basecase Report. We reiterate that, before developing the Gas Master Plan, the DMRE should seek comment (within a reasonable comment period) on a version of the Basecase Report updated with input from the modelling tool and the public’s input on the Basecase Report.



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