



# Centre for Environmental Rights

## Advancing Environmental Rights in South Africa

**Mr Jongikhaya Witi**

The Director-General: Department of Forestry, Fisheries and the Environment

By email: [GHGreporting@environment.gov.za](mailto:GHGreporting@environment.gov.za)

Our ref: BA/NL

31 August 2022

Dear Mr Witi

### **LIFE AFTER COAL COMMENTS ON DRAFT 8<sup>TH</sup> NATIONAL GREENHOUSE GAS INVENTORY REPORT**

1. We address you on behalf of [groundWork](http://www.groundwork.org.za/)<sup>1</sup> and [Earthlife Africa](http://earthlife.org.za/),<sup>2</sup> and represent the [Life After Coal/Impilo Ngaphandle Kwamalahle Campaign](https://lifeaftercoal.org.za/) (“the Campaign”),<sup>3</sup> a joint campaign by Earthlife Africa, groundWork, and the [Centre for Environmental Rights](https://cer.org.za/)<sup>4</sup> in making these comments. The Campaign aims to discourage the development of fossil fuels, including new coal coal-fired power stations and mines; reduce emissions from existing coal infrastructure and encourage a coal phase-out; and enable a just transition.
2. We refer to the Draft 8<sup>th</sup> National Greenhouse Gas Inventory Report (NGHGIR) published on 29 July 2022 by the Department of Forestry, Fisheries and Environment (DFFE) for consultation, and submit comments below. We note that the draft was uploaded to the DFFE website on 23 August 2022, and therefore contend that the comment period of 30 days should run from date of publication on the website, and close on 2 September 2022. We have endeavoured to make this submission as soon as possible within that time period.
3. For comparative purposes, we also reference herein the 7<sup>th</sup> National Greenhouse Gas Inventory Report of 2017, published in 2021 (“the 7<sup>th</sup> NGHGIR”)
4. We welcome the updated NGHGIR and its timeous publication. The increasingly urgent imperative to respond to climate change, including South Africa’s international obligations, requires a regularly updated, timeous, accurate and complete GHG emission inventory. We note that although the NGHGIR is prepared primarily to comply with SA’s obligations as a signatory to the UNFCCC, it has a vital role in the development of SA’s national climate change response plans, emissions trajectory and Nationally Determined Contribution (NDC). The NGHGIR must inform South Africa’s emissions trajectory, and inform and constrain the country’s carbon intensive development trajectory, particularly in the energy sector.
5. The failure to adequately respond to the climate crisis limits a number of Constitutional rights,<sup>5</sup> and adequate climate response is deeply dependent on full accounting and transparency when it comes to, *inter alia*, GHG emission information and reporting

<sup>1</sup> See <http://www.groundwork.org.za/>.

<sup>2</sup> See <http://earthlife.org.za/>.

<sup>3</sup> See <https://lifeaftercoal.org.za/>.

<sup>4</sup> See <https://cer.org.za/>.

<sup>5</sup>The rights in particular, to life, dignity, access to food and water, and to an environment not harmful to health or well-being, being in the forefront. Because climate change is known to more intensely impact on poor people, and women and children, the rights to equality and the rights of children are also compromised.

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## Scope and context of our submission

6. Due to the complex and technical nature of the Draft 8<sup>th</sup> NGHGR, our comments will be restricted to a limited number of issues within our knowledge and experience, and which highlight key concerns for us, around comprehensive accounting for GHG emissions and reporting thereon, most notably in the context of methane and existing and intended future fossil gas related development. We also raise important concerns around transparency and access to GHG emission-related information. The failure to address any particular aspect of the Draft NGHGR does not indicate that we accept or endorse such aspect.

## The need to account for methane emissions

7. The full lifecycle GHG emissions associated with natural gas, which contains more than 80% methane, includes the fugitive emissions, or leakage, of methane that occurs at various points in the production, supply and distribution chain, that is, during extraction, gas processing, liquefaction, transport, storage and regasification, and at the point-of-use. Such emissions from liquefied natural gas (LNG) have been found to be 4.2%, and from shale gas 3.5%. Emissions from pipelines are estimated to account for an additional 0.8%. It is estimated that a 2.7%<sup>6</sup> to 2.8%<sup>7</sup> leakage rate will cancel out any climate benefits that gas may have over coal.
8. Methane is a potent GHG, with a global warming potential (GWP) that is 84 times that of CO<sub>2</sub>, considered over a 20 year period.<sup>8</sup> The Draft 8<sup>th</sup> NGHGR uses the methane GWP of the Second Assessment Report (SAR) (IPCC, 1996) of 21 times that of CO<sub>2</sub> to calculate the CO<sub>2</sub>e of methane emissions. This is compliant with the UNFCCC reporting requirements but **grossly understates the actual global warming impact of methane emissions** considered over the more relevant 20-year time horizon. If the more realistic GWP of 84 is applied to the total 2020 methane emissions, excluding FOLU, of 2 887 Gg<sup>9</sup>, the CO<sub>2</sub>e emissions are 248 502 Gg - four times the reported methane CO<sub>2</sub>e emissions of 60 632 and 64% of the 2020 total CO<sub>2</sub> emissions of 391 021 Gg. Crucially, when we use the NGHGR to measure mitigation actions, particularly over the all-important period up until 2030, **methane emissions must be realistically assessed in light of their actual contribution to global warming**.
9. If the omissions of the fugitive methane emissions from gas transmission and distribution pipelines and the oil and natural gas industries are accounted for, the methane CO<sub>2</sub>e emissions could possibly be comparable to total CO<sub>2</sub> emissions, emphasising the imperative of reducing both methane and CO<sub>2</sub> emissions in compliance with SA's international obligations and to ensure the Constitutional imperative of limiting warming to relatively safe levels. Certainly, given fugitive emissions calculations, generating electricity from gas has been found to be at least as harmful to the climate as doing so from coal.<sup>10</sup>
10. According to the United Nations Environment Programme (UNEP), in its May 2021 Global Methane Assessment Report, *"In the absence of additional policies and measures, methane emissions are projected to continue rising through at least 2040. Current concentrations are well above levels in the 2° C scenarios used in the IPCC AR5. The Paris Agreement's 1.5° C target cannot be achieved at a reasonable cost **without reducing methane emissions by 40–45 per cent by 2030.**"*<sup>11</sup>

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<sup>6</sup> <https://www.scientificamerican.com/article/methane-leaks-erase-some-of-the-climate-benefits-of-natural-gas/>

<sup>7</sup> Richard A Howarth *Gas Lifecycle Methane Emissions: Richards Bay Review* <https://naturaljustice.org/wp-content/uploads/2021/05/FA-12-Howarth-RichardsBayReview.pdf>

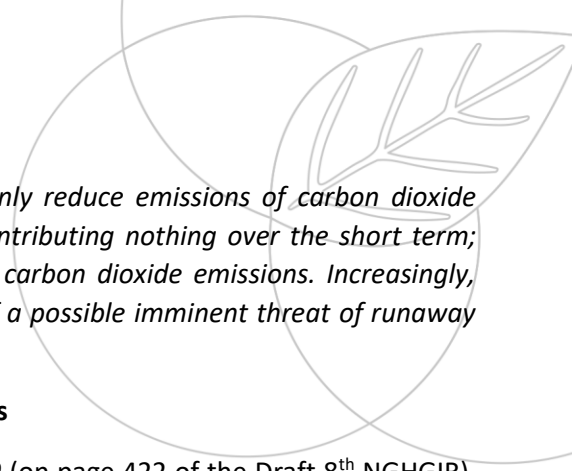
<sup>8</sup> Myhre, G., D. et al.: Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Chapter 8. Table 8.7.

<sup>9</sup> the Draft 8<sup>th</sup> NGHGR, page ix.

<sup>10</sup> Howarth, Note 7 *supra*

<sup>11</sup> Page 8. UNEP Global Methane Assessment report: Summary for Decision-Makers

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

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11. According to Cornell university expert, Richard A Howarth PhD, *“To only reduce emissions of carbon dioxide without reducing methane emissions is far less effective, essentially contributing nothing over the short term; global warming only starts to slow after 30 or more years of reduced carbon dioxide emissions. Increasingly, scientists are calling for a reduction of methane emissions in the face of a possible imminent threat of runaway climate disruption.”*<sup>12</sup>

#### **Failure to estimate fugitive emissions from oil and natural gas industries**

12. We refer to *Table C.1: Summary emission table for South Africa for 2020* (on page 422 of the Draft 8<sup>th</sup> NGHGR). Item 1.B.2 indicates that fugitive methane emissions from oil and natural gas are not estimated. We also note that in Table H of the National Greenhouse Gas Inventory Report 2017, it was indicated that emissions from this source category would be included in the *“next inventory submission”* – that being the Report under current consideration.
13. It is accordingly of serious concern that the NGHGR does not estimate fugitive methane emissions in the energy sector, and that this has not been rectified since the previous report. This must be addressed in the 8<sup>th</sup> NGHGR.

#### **Emissions from pipeline transport**

14. The methane emissions from pipeline transport, *Item 1A3ei Pipeline Transport of Table C.2*, have not been estimated. South Africa currently imports 0,014 tcf<sup>13</sup>/annum of natural gas via the 865 km ROMPCO pipeline from the Temane facility in Mozambique to Sasol’s Secunda plant. The gas transmission network includes a further 1080 km pipeline network operated by Sasol Gas, a 573 km line running from Secunda to Durban and about 100 km gas pipeline supplying the PetroSA GTL plant in Mossel Bay, 2618 km in total. These transmission pipelines are connected to several distribution networks that supply individual users.<sup>14</sup> The fugitive emissions from this extensive existing network of gas transmission pipelines and distribution networks - which are likely to be material - have not been included in the methane emission estimates. This is of major concern and must be addressed in the 8<sup>th</sup> NGHGR. Failing to do so would be highly prejudicial to the people of South Africa and their constitutional rights.
15. We are particularly concerned that the persistent absence of baseline estimates of methane emissions associated with the existing gas transmission, distribution and consumption system occurs in the context of the recently published Gas Master Plan which envisions a 6-fold increase in gas usage from the current 2.6% of South Africa’s total energy mix to 15.7%<sup>15</sup>, which would inevitably increase gas-methane emissions by a similar factor.

#### **Methane emissions from abandoned mines**

16. We refer to Table H of the 7<sup>th</sup> NGHGR, and Table 1.9, Table ES 6 and Table 4 of the Draft 8<sup>th</sup> NGHGR, with reference to IPCC Category 1B1ai2 – Methane emissions from abandoned mines. Notwithstanding that these emissions were identified in the 7<sup>th</sup> NGHGR as needing to be estimated in the Draft 8<sup>th</sup> NGHGR, this has not occurred.
17. Methane emissions from discard coal stockpiles are not listed specifically by the IPCC but they should be included in this category. Recent research work shows that methane emissions from discard coal stockpiles are significant because they continue far into the future.<sup>16</sup> South Africa has huge stockpiles of unrehabilitated coal discards.

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<sup>12</sup> Howarth, Note 7 *supra*

<sup>13</sup> tcf: trillion cubic feet

<sup>14</sup> [http://www.energy.gov.za/files/media/explained/Gas Master Plan Basecase Report.pdf](http://www.energy.gov.za/files/media/explained/Gas%20Master%20Plan%20Basecase%20Report.pdf) September 2021. Section 7.1 at pages 31 to 33.

<sup>15</sup> *Ibid.* At page 1.

<sup>16</sup> Nazar Kholod, Meredydd Evans a, Raymond C. Pilcher b, Volha Roshchanka c, d,

## Emission factors for coal mining and handling

18. We refer to *Table 3.19 – Emissions factors for coal mining and coal handling*. We note that the Draft 8<sup>th</sup> NGHGIR states (on page 128) that “[c]ountry specific emission factors were sourced from the study undertaken by the local coal research institute (DME, 2002). This study showed that emission factors for the South African coal mining industry are significantly lower than the IPCC default emission factors.” This is evidently used to motivate for what appear to be extremely low emission factors being applied for methane emissions from coal mining and handling: In the case of underground mining, the emissions factor is 1/24<sup>th</sup> of the IPCC default, and 1/13<sup>th</sup> of the IPCC default for post-mining handling and transport. For surface mining, the emission factor used is zero, when the IPCC defaults are 1.2 and 0.1m<sup>3</sup> tonne<sup>-1</sup> for mining and post-mining respectively. This poses severe risks of under-counting, and is highly prejudicial to the people of South Africa.
19. We request detail of the evidence that has been relied upon to motivate the emission factors being utilised here, and further request that the use of these emission factors be reviewed.

## The need for increased transparency and access to real-time GHG emission data

20. We take this opportunity to comment on the need for increased transparency and access to GHG emission data, as a matter of the utmost importance and public interest. The people of South Africa have a direct interest in knowing, and having ready access to, South Africa’s GHG emissions status – including which sectors and facilities are contributing to the emissions. This is a vital component of climate justice.
21. Is there more up-to-date consolidated emissions information publicly available than that reflected in the Draft 8<sup>th</sup> NGHGIR? Even if not in the granular detail as presented in the report, we contend that major emissions monitoring results and trends, that are as current as possible, should be made publicly available in order to ascertain progress with adherence to the NDC. In this regard, we also refer in to a letter sent to Minister Creecy and the DFFE on 5 August 2022<sup>17</sup> requesting information regarding South Africa’s plans in relation to its NDC, and tracking of NDC compliance.
22. Section 32 of South Africa’s Constitution provides for the right of access to information, a right that is particularly compelling when it comes to the issue of climate change response, given the harms that will, and are likely to, be experienced across society and the economy. The Minister of Environment’s appeal decision LSA190924 of 5 April 2020 in terms of PAIA, which related to access to GHG emission information for a number of emitting facilities in South Africa, confirmed that *“the overall purpose of the administration of justice, requires the disclosure of the anticipated projected emissions and the data relating to anticipated and actual emission reduction.”*<sup>18</sup>
23. We therefore recommend that:

- 23.1. The Department increase measures to update the inventory and bring the reporting up to date as soon as possible;

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Felicia Ruiz c, Michael Cote e, Ron Collings. Global methane emissions from coal mining to continue growing even with declining coal production. *Journal of Cleaner Production* 256 (2020) 120489.

<sup>17</sup>[https://cer.org.za/wp-content/uploads/2022/08/Letter-to-Minister-and-Department-FFE-Nationally-Determined-Contribution\\_5\\_Aug\\_2022.pdf](https://cer.org.za/wp-content/uploads/2022/08/Letter-to-Minister-and-Department-FFE-Nationally-Determined-Contribution_5_Aug_2022.pdf)

<sup>18</sup> See <https://cer.org.za/wp-content/uploads/2019/12/PAIA-Appeal-Decision-Minister-Creecy-GHG-Reports-LSA190924.pdf>.

23.2. The Department make GHG emission reports and pollution prevention plans under the National GHG Reporting Regulations and Pollution Prevention Plans under the National Environmental Management: Air Quality Act, 2004 automatically available and online;

23.3. The Department develop online platforms for easy sharing and access to GHG emission data including summaries; translations for example, to make the information easy to understand.

### **Conclusion**

24. The Draft 8th NGHGIR is a critically important document for informing a managed approach to GHG emissions reduction. Even the relatively few concerns expressed above bring the accuracy and completeness of South Africa's greenhouse gas inventory into question.

25. We urge that our comments be taken into account when finalising the 8<sup>th</sup> NGHGIR, and that the requested information be made available.

26. Please do not hesitate to contact us, should you have any questions or if you require more information in relation to any aspect of this submission.

Yours faithfully

**CENTRE FOR ENVIRONMENTAL RIGHTS**



per:

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