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Advancing Environmental Rights in South Africa

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Our ref: CER/RH/NL
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Dear Ms. Mundalamo

WRITTEN SUBMISSIONS ON THE CLIMATE CHANGE MITIGATION POLICIES AND MEASURES FINAL DRAFT REPORT

1. We are writing to you in response to your invitation to comment on the recently published Climate Change Mitigation Policies and Measures (PAMs) Final Draft Report of March 2018 ("Draft Report"). A notification was sent to stakeholders on 23 March 2018 calling for comments on the Draft Report by 6 April 2018. We point out that this is an unreasonably short timeframe for meaningful consideration and comment by stakeholders, particularly given the technical nature of the Draft Report. Nevertheless, given the important contribution of this study as part of Government's 'Mitigation System', as contemplated in the National Climate Change Response White Paper (NCCRWP), the Centre for Environmental Rights (CER) remains an interested and supportive stakeholder in this process, and we submit herein our very broad and general comments on the Draft Report. We reserve our rights to submit more detailed comments at a later stage.

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2. In making the following comments, we have reviewed the Draft Report and the PAMs Technical Appendices ("the Appendices"). We also refer to CER's submissions on the stakeholder briefing document ("the Briefing Document") on the approach and methodology for the PAMs analysis, dated 18 August 2017, a copy of which is **attached** for your ease of reference.

3. As expressed in the submission on the Briefing Document, CER reiterates its support for the PAMs' examination of the effectiveness of policies and measures undertaken or planned towards achieving South Africa's mitigation policy objectives and international commitments in terms of the Paris Agreement.

4. Our comments briefly address the following points:

    4.1. the need for clarity regarding the purpose of this PAMs project in relation to the Mitigation Potential Analysis and Greenhouse Gas (GHG) Pathways projects, and the role of the PAMs project in the overall climate mitigation and adaptation plans and policies of government;
    4.2. the need to further revise the delineation of GHG emissions for the PAMs project to include, amongst other things, additional GHGs;
    4.3. the need to broaden the socio-economic analysis to include certain important missing considerations, including the externalities, particularly in the electricity and transport sectors;
    4.4. the lack of a rationale for prioritising Sasol in the Liquid Fuels Sector to 2050;
    4.5. the lack of clarity as to individual policies and measures assessed;
    4.6. information and assessments missing from the reference case; and
    4.7. the need to utilise the conclusions and recommendations in the Draft Report; for example in the revision of the Integrated Resource Plan for Electricity (2010 – 2030) of 2011 ("IRP 2010").

Purpose and role of this PAMs project in relation to the Mitigation Potential Analysis, GHG Pathways projects, and overall policies and plans of government to address climate change mitigation and adaptation

5. We wrote to the Department of Environmental Affairs (DEA) on 23 February 2018, to obtain clarity on the roles and alignment of various climate mitigation and adaptation policy documents and projects – each at various stages of development - prepared by government to address climate change. A copy of the letter is **attached**.

6. Our understanding – from some engagements with DEA and from the documents themselves - of how the PAMs, Mitigation Potential Analysis (MPA) and GHG Pathways documents compare and contrast with each other, is set out below. However, government's overall plan and strategy to align the various projects and studies remains unclear. We have not yet received a response to our letter of 23 February 2018, and reiterate our request that DEA advise:

    6.1. what the ultimate intended outcome and purpose for the documents listed in the 23 February 2018 letter is;
    6.2. whether there are other documents and/or projects not listed in the letter; what they are; and what their ultimate intended outcomes and purposes are;
    6.3. how these will all be aligned and "speak to" one another;
    6.4. what the envisaged timeframes for the various documents are; both for commenting periods and for implementation;
    6.5. how the Department plans to align its plans and intended laws and policies with those of National Treasury (responsible for implementing the carbon tax), the Department of Energy, and other departments and branches of government currently working on projects relevant for climate change mitigation and/or adaptation;
    6.6. in particular, what the relationship is and differences are between the PAMs, the Pathways documents, and the post-2020 mitigation system, and how all of the above documents (and other documents or projects being worked on) fit in with the post-2020 climate change mitigation system; and

6.7. which documents or components of each project are still outstanding and what still needs to be done in respect of each of the above documents and any other climate change related projects being run by DEA.

7. In its 'problem statement', the Draft Report states the following:
"*Previous and on-going work has been undertaken to assess South Africa's mitigation potential, with the first Mitigation Potential Analysis (MPA) report published by the Department of Environmental Affairs (DEA) in 2014. In contrast to the MPA work (which focused on mitigation potential), the present study has been undertaken with the purpose of examining the effectiveness of policies and measures undertaken or planned towards achieving South Africa's mitigation policy objectives."*

8. The GHG Pathways Project (March 2018),[1] however, aims to conduct an analysis of projected GHG emissions pathways for South Africa to 2050 and presents a set of alternative GHG emission pathways: *clean coal in a manufacturing and local beneficiation economy*; *rapid decarbonisation in a manufacturing and local beneficiation economy*; and *reduced demand in a services economy*.[2] The GHG Pathways Project Report, also clarifies in its approach that "*the basis of the Pathways Model is the Mitigation Potential Analysis (MPA), but with some significant revisions and improvements",* including covering all sectors of the economy and emission sources as it is aligned with the National GHG inventory, and up-to-date baseline data for 2000 to 2015.

9. Based on these respective descriptions, it therefore appears that the GHG Pathways Project expands on the MPA potential mitigation pathways and the broad range of reduction measures and technologies; whereas, the PAMs study takes a narrower approach, to principally estimate the actual effect of existing and planned measures and policies to achieve South Africa's current mitigation obligations. The Draft Report also proposes additional policies and measures, if required, to meet these goals.

10. If, however, we have misunderstood the purpose and alignment of these projects, we kindly request that the DEA clarify the position, not only for our benefit, but all stakeholders involved. In any event, we reiterate our request for a response to our letter of 23 February 2018.

11. It is also crucial that the PAMs project is aligned with South Africa's other policy decisions – particularly those in relation to energy. The outdated IRP 2010 makes significant provision for new coal-fired electricity, which will have high GHG emissions. Based on the Ministerial Determination of December 2012 calling for 2500MW of new coal-fired electricity capacity, and the Coal Baseload Independent Power Producer (IPP) Procurement Programme (CBIPPPP), two new coal-fired power stations (Thabametsi and Khanyisa) - which are unnecessary, expensive and will have irreversible impacts for the climate, human health and the environment - have been appointed as preferred bidders. It is not clear whether these substantive additional GHG emissions have been taken into account in this project, but we point out that these stations are facing significant opposition.[3]

12. The Energy Systems, Economics, and Policy Group based at the Energy Research Centre (ERC), University of Cape Town, conducted a study that focused on the proposed Thabametsi and Khanyisa IPP power stations. ERC presented its findings at the 27 March 2018 generation licence hearing for the proposed Thabametsi and Khanyisa coal IPP power stations. The presentation is attached. The study finds that Thabametsi and Khanyisa would:

    12.1. increase South Africa's GHG emissions by approximately 155-177 million tonnes of CO_2 equivalent up to 2050;
    12.2. result in additional costs in the electricity sector every year of up to R4bn to 2025-2027 - to be borne by consumers; and
    12.3. increase the overall system costs by between R19,35 billion (reference case) and R24,49 billion (low demand scenario) in present value terms.

[1] Report published by The Green House is available at https://www.environment.gov.za/sites/default/files/reports/mitigationpathways_finaldraft_report_greenhousegas.pdf
[2] See pages 7-11.
[3] https://cer.org.za/news/battle-against-the-climate-destroying-coal-ipps-escalates

13. Importantly, the above ERC study finds that committing to the two proposed coal IPPs – Thabametsi and Khanyisa – would make government's planned mitigation measures redundant. For example, the National Energy Efficiency Strategy saves 214Mt CO2-eq to 2050; whereas the coal IPPs would increase South Africa's GHG emissions by approximately 155-177 million tonnes of CO_2 equivalent up to 2050.

14. We would like to reinforce the point made in the abovementioned letter of 23 February 2018, that while we have no objection to the DEA commissioning a multi-faceted research process in relation to climate change mitigation, and commend the stakeholder engagement process thus far, it is vital that the findings and information be properly utilised and that the intended purpose and plan for this process and the individual projects is clear to **all** stakeholders – including other departments and branches of government - to enable meaningful participation, including as required in terms of the Promotion of Administrative Justice Act, 2000.

15. We again ask that the Department explain and demonstrate how all of these components are going to be pulled together to ensure a successful and implementable climate mitigation and adaptation system, and what the envisaged timeframes and deadlines are. This will also place us and all other interested and affected parties in a much better position to understand, consider and comment on any future climate change documents and projects. The need for transparency and meaningful consultation in relation to these essential documents cannot be overstated.

Revised delineation of GHGs for PAMs project

16. In our submissions on the Briefing Document, it was highlighted that, in South Africa's National GHG Inventory as submitted in its first Biennial Update Report to the United National Framework Convention on Climate Change (UNFCCC) in 2014, "*the GHG's include: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6)".* It was not clear to us why only CO_2, CH_4 and N_2O were being considered as GHGs in the Briefing Document.

17. We therefore welcome the revised extension of the GHG delineation in the Draft Report to include CO_2, CH_4 and N_2O, HFCs and PFCs. That said, we also identified two critical pollutants with significant climate impacts, which are not accounted for in the Biennial Report and excluded from the PAMs analysis – black carbon and hydrochlorofluorocarbons (HCFCs).

18. We therefore remain concerned about the exclusion of these two pollutants, given the warming effect of black carbon and HCFCs and the opportunity to limit and/or eliminate the contribution of these gases.

19. We also note that emissions from underground coal fires have been excluded on the basis that these emissions are not included in the National GHG Inventory. To the extent possible, this emission source should be quantified and accounted for in the final PAMs report.

Inadequate socio-economic analysis

20. The socio-economic impact analysis detailed in the Draft Report examines "*the effect of policies and measures on economic growth (GDP), employment, household income, employment by skill level and inequality*". Further, the parameter for welfare is described as "*change in total annual household consumption*".

21. The socio-economic indicators and parameters appear to be limited in scope and narrow in definition. It may be useful if a wider range of socio-economic indicators and parameters are considered, such as: impacts of policies and measures on health, household expenditure, energy security, access, affordability, mobility, skills and training, and gender.

22. Notably, the Draft Report does not examine the impact of negative externalities, specifically water and air pollution, climate and health externalities, and the corresponding socio-economic costs and benefits of existing and planned mitigation policies and measures. We are of the view that it is important to include externalities in this assessment, particularly in relation to the considerable externalities embedded in the electricity and transport sectors.[4] For example,[5] a 2017 study commissioned by groundWork[6] links the air pollution from particulate matter of Eskom's coal-fired power stations to 2 239 equivalent attributable deaths annually. It also states that these pollution impacts cost South Africa more than USD 2,3 billion annually, through premature deaths, hospital admissions, and lost working days.[7]

Lack of rationale for prioritising Sasol (Coal-to-Liquid) in the Liquid Fuels Sector to 2050

23. We note the following assumptions for the Reference Scenario emissions in the 'Energy Demand Sectors' section of the Draft Report, under '*Liquid fuels and hydrogen production*':

> "***The production capacity of the CTL facility is unaltered over the horizon*** *(Figure 9). Assuming that the crude oil refinery "Clean Fuels Phase 2" (DoE, 2011) is unimplemented, the existing crude oil refinery capacity remains throughout the period. Presuming that vehicle technologies such as electric and fuel-cell vehicles* ***emerge by 2030 as economically favourable alternatives, a decline in liquid fuel demand is observed***. ***As such, with CTL production prioritised, the crude oil refineries, are underutilised and effectively idle by 2050***."[8] (emphasis added).

24. It is common knowledge that 'the CTL facility' is Sasol's plant located in Secunda. The Draft Report itself confirms that "*CTL fuel production is the primary source of refinery GHG emissions being responsible for 54 to 58 MtCO2eq per annum over for the period 2020-2050*"[9], and Sasol's CTL plant is widely recognised as the single largest point-source emitter of CO_2 in the world.[10]

25. We are unable to comprehend how any GHG mitigation scenario, baseline reference or otherwise, in the context of assessing South Africa's current long-term mitigation goals as contained in the NCCRWP, and with South Africa's Nationally-Determined Contributions (NDCs) required to become increasingly stricter every 5-years, can reasonably account for the single largest point-source emitter of CO_2 in the world continuing unabated to 2050.

26. Furthermore, the above presumption that production capacity remains unaltered to 2050 appears to be contradicted by the second part of the text – that economically-favourable fuel alternatives emerge by 2030, resulting in decline in liquid fuel demand. We therefore dispute that there is any rational basis for hugely-polluting CTL production to be prioritised through to 2050. This is especially so, given the Draft Report recommendation that "*from a policy point of view, the key sectors in meeting South Africa's current climate mitigation goals should be electricity, liquid fuels, and transport*".[11] This can simply not be justified.

27. It is noteworthy that two of three alternative pathways in the GHG Pathway Project, require the decommissioning of Sasol's CTL facility by 2040. To the extent that it is warranted in these comments on the Draft Report, we also note our opposition against the notion of 'clean coal' factored into the 'Pathway 1: Clean coal in a manufacturing

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[4] See Department of Energy. 2014. *Energy system externalities in South Africa*.
[5] We are in a position to provide several other examples of the costs of externalities. Kindly advise if you would like this information.
[6] Available at https://lifeaftercoal.org.za/wp-content/uploads/2017/04/Annexure-A4.pdf.
[7] Holland Report, p15, https://lifeaftercoal.org.za/wp-content/uploads/2017/04/Annexure-A4.pdf.
[8] See page 14 of the Draft Report.
[9] Ibid at page 15.
[10] See https://www.theigc.org/blog/the-cost-of-air-pollution-in-south-africa/; https://www.timeslive.co.za/news/africa/2017-11-09-massive-carbon-threat-in-africas-heart/.
[11] See page 66 of the Draft Report.

and local beneficiation economy' in the GHG Pathway Project. Carbon capture and storage (CCS) is not a proven technology in South Africa, even at a pilot stage, let alone large-scale deployment.

Individual policies and measures

28. In relation to the Draft Green Transport Strategy (GTS), the Draft Report stipulates that the "*cost of implementation of the measures under Green Transport Strategy has a negative impact on economic growth and a resultant negative impact on employment and welfare."*[12] However, it is evident that a range of socio-economic benefits that may derive from the GTS, including improved mobility, improved access to urban goods, services, and employment opportunities, and improved air quality and concomitant reduction in negative externalities, were not included as indicators in the socio-economic analysis.

29. Further, it is uncertain whether the impact of spatial and land-use planning policies and measures on transport emissions, including transit-oriented development (TOD); and densification, compactness and urban edge strategies were modelled in the planned policies and/or measures (PPM) scenario.

30. In relation to the National Energy Efficiency Strategy (NEES), a key finding of the PPM scenario is that '*improved energy efficiency results in less energy consumption, allowing households to spend more on other goods and services'.*[13] Whilst this is encouraging, it is unclear whether rebound effects were considered and modelled in the PPM scenario, particularly related to the NEES.

31. Whilst the PPM scenario included energy efficiency targets for commercial and public buildings in the NEES, it is unclear whether implementation and compliance with Part XA of the National Building Regulations and Building Standards Act and accompanying SANS 10400–XA were included in the model and PPM scenario.

32. In relation to fiscal policies, section 4.2.4 of the Draft Report focuses exclusively on Draft Carbon Tax Bill, yet it is unclear whether fiscal policies already in place, such as 12L energy efficiency tax incentive in terms of the Income Tax Act, 1962, were included in the PPM scenario.

33. It is uncertain from the Technical Appendices whether a number of policies and measures in the Agriculture, Forestry and Other land Use (AFOLU) sector that would increase carbon sinks were modelled, including targets and measures in the Agroforestry Strategy Framework for South Africa; Policy on Agriculture in Sustainable Development; Draft National Policy on Organic Production; Draft National Agroecology Strategy; National Biodiversity Strategy and Action Plan; and National Protected Areas Expansion Strategy.

34. It is submitted that these individual policies and measures should be taken into account.

Reference case

35. In relation to energy demand, the increased GHG emissions and energy demand projections in the commercial ("*1.96Mtpa in 2015 to 2.73Mtpa in 2050"*) and industrial sectors ("*57.8Mtpa in 2015 to 130.76Mtpa in 2050"*) in the reference case seem relatively high and seem to underestimate the uptake of energy efficiency measures and embedded generation in the commercial and industrial sector.

36. Related to the above, the Technical Appendices note that the "*SATIM does not endogenously account for the feedback from the economy as sectors and consumers respond to changes in energy prices, and as the economy responds to energy investment requirements. By not accounting for this feedback, it is likely that SATIM will over- or under-estimate energy demand when used independent of an economic model*."

[12] See page 45 of the Draft Report
[13] See Page X of the Draft Report

37. It is thus uncertain whether the model fully considers the impact of price elasticity of demand alongside the availability of cheap efficiency and embedded generation options, on traditional utility models. It may, accordingly, be useful to discuss the presence of non-linear interactions and prospects of a utility death spiral in the final PAMs report.

Utilisation of conclusions and recommendations in the Draft Report

38. We note and emphasise the following conclusions and recommendations presented in the Draft Report:[14]

    38.1 "*The most striking feature of the Reference scenario is the economy-wide fall in GHG emissions to 2050 compared to earlier baseline analyses (such as the Mitigation Potential Analysis (MPA), which modelled very large growth in GHG emissions to 2050). In this analysis, Reference scenario GHG emissions peak at 515 MtCO2-eq in 2025 then decline to 407 MtCO2-eq in 2050. This is due in particular to recent changes in the costs of renewable energy technologies in the electricity supply sector, leading to a least cost electricity build plan with much lower GHG emissions than previously modelled (in the MPA or the 2010 Integrated Resource Plan (IRP), for example)*."

    38.2 "*While past analysis of mitigation has assumed that lower-emissions technologies and systems have a higher cost than a reference informed by one with higher-emissions options, this is no longer the case. Rather than incremental cost, there are incremental savings by implementing the least-cost system. That said, implementing least-cost options in South Africa (as distinct from a model) requires significant effort*."

    38.3 "*The key policy-relevant conclusions one can draw from this analysis is that the* ***electricity sector is the key to decarbonizing the South African economy, primarily via a switch from coal-fired electricity to a mix of renewables and gas****. This conclusion persists even in a significantly more ambitious mitigation scenario (the lower PPD (peak plateau decline) constraint), and is this robust in a future in which South Africa may be obliged to take on a more ambitious international commitment*" (emphasis added).

    38.4 "*The analysis of indicative targets for these sectors have shown potential for additional GHG emissions reduction in these sectors coupled with positive socio-economic implications, most notably for waste recycling policies and/or measures*."

    38.5 "*From a policy point of view, the key sectors in meeting South Africa's current climate mitigation goals should be electricity, liquid fuels and transport*."

    38.6 "*The analysis shows that in the event that South Africa adopts a more stringent climate mitigation target, much of the additional effort will come from the electricity sector.* ***One of the features of a more stringent mitigation scenario would be the earlier closure of some of the current fleet of coal-fired power plants***" (emphasis added).

    38.7 "*Following the trajectory of the lower PPD more closely would also* ***require decarbonisation of the liquid fuels manufacturing sector****, which would in turn require retiring or significantly reducing GHG emissions of the coal-based synthetic fuels industry*" (emphasis added).

39. What is apparent from the findings and, indeed, the use of an economy-wide energy systems model (representing all sectors of the economy), is that the PAMs project has a critical bearing on policy planning for the energy, transport, and waste sectors, in particular.

40. We submit that the Draft Report is important for the revision of the IRP 2010, as it reflects, for example, recent changes in the costs of renewable energy technologies in the electricity supply sector. It is of paramount importance that the IRP 2010 is based on the latest, accurate projections and input data to produce the least cost

[14] Ibid, pages 65-67.

combination of technologies, with all external health and environmental costs considered, to achieve South Africa's electricity requirements.[15]

41. We reiterate our request that DEA respond to our letter of 23 February 2018, and ask to be kept updated on all climate change-related policies.

42. Please do not hesitate to contact us, should you have any questions or if you require more information in relation to any aspect of these submissions

Yours sincerely

CENTRE FOR ENVIRONMENTAL RIGHTS

per:

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[15] See, for example: https://cer.org.za/news/no-room-for-secrecy-environmental-organisations-publish-minimum-requirements-for-sas-overdue-integrated-resource-plan-for-electricity