Centre for Environmental Rights
Advancing Environmental Rights in South Africa

NATURAL JUSTICE

Att: Mr. Jongikhaya Witi
Director-General
Department of Forestry, Fisheries and the Environment
By Email: SETSComments@dffe.gov.za
Cc: fsherman@dffe.gov.za

25 June 2024

Dear Mr. Jongikhaya Witi,

COMMENT ON THE DRAFT SECTORAL EMISSION TARGETS REPORT FOR PUBLIC COMMENT

1. Natural Justice[1] ("**NJ**") and the Centre for Environmental Rights[2] ("**CER**") make this joint submission on the above draft Sectoral Emission Targets Report (hereinafter referred to as the "**SETs Report**") which was published by the Minister of Mineral Resources and Energy on 26 April 2024 (in Government Gazette number 50571).

2. The SETs Report, as well as the accompanying Technical Report and Socio-economic Modelling Final Report present a significant amount of information, much of it being complex and of a highly technical nature. Further, the implications and impacts are extremely significant for South Africa's climate response trajectory and outcomes. As such we trust and request that there will be adequate further opportunities for consultation and engagement, including at least a furter public consultation process on proposed final SETs before these are submitted to Cabinet as envisaged.

3. Internationally, there is acceptance that to succeed in realising the Paris Agreement goals, and averting catastrophic climate change, we must urgently pivot towards low-emission economic development. We therefore oppose any aspects of the SETs Report that are inconsistent with achieving net zero GHG emissions by 2050, including aspects not supportive of a suitably urgent and effective trajectory towards the next zero target.

4. In its 2023 Synthesis Report, the Intergovernmental Panel on Climate Change (IPCC) reiterated the need to take action to mitigate emissions in the near-term through 2050, particularly in this decade:

   4.1. *In the very low GHG emissions scenario (SSP1-1.9), CO2 emissions reach net zero around 2050 and the best-estimate end-of-century warming is 1.4°C, after a temporary overshoot (see Section*

[1] Natural Justice is a team of pioneering lawyers and legal experts specialising in human rights and environmental law in pursuit of social and environmental justice.
[2] The CER is a non-profit organisation of activist lawyers, which assists communities and civil society organisations in South Africa realise our Constitutional right to a healthy environment by advocating and litigating for environmental justice.

3.3.4) of no more than 0.1°C above 1.5°C global warming. Global warming of 2°C will be exceeded during the 21st century unless deep reductions in CO2 and other GHG emissions occur in the coming decades.[3]

4.2. *Societal choices and actions implemented in this decade determine the extent to which medium- and long-term pathways will deliver higher or lower climate resilient development* (high confidence)."[4]

5. South Africa first "*commit[ted] to [] moving towards a goal of net zero carbon emissions by 2050*" in its 2020 Low-Emission Development Strategy.[5] More recently, the Just Energy Transition Implementation Plan 2023-2027 defines a "Just Transition" to include "*reaching net zero greenhouse gas (GHG) emissions by 2050 in line with best available science*."[6] Net zero emissions are achieved when there is balance between GHGs produced and those removed from the atmosphere.

6. Given South Africa's commitment to achieving net zero GHG emissions by 2050, we strongly urge South Africa to ensure that its revised NDCs are compatible with a net zero pathway. All climate-related legislation, policies, and measures–including the SETs and the policies underpinning them–must likewise align with this net zero goal. Ensuring this alignment requires periodic review and revision of the SETs throughout the pivotal decades ahead, particularly to update them in the face of technological advances and best available science, as the Climate Change Bill requires.

7. Although the SETs Report serves as an important starting point for understanding South Africa's current national emission profile and existing policies and measures that can contribute to GHG reductions in key sectors, the SETs allocations described do not ultimately ensure South Africa will reach net zero GHG emissions by 2050, and, in some cases, the policies and measures which allegedly support a transition to a low carbon future actively undermine it.

8. While we agree that emissions reductions are needed in all sectors, in our submission below, we have focused our comments on the energy sector and related sectors as significant contributors to South Africa's GHG emissions – mining, transport, and industry. The energy sector alone accounted for 86% of national emissions in 2022.[7]

A: THE LEGAL CONTEXT OF THIS SUBMISSION

[3]IPCC, 2023: Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, p. 68, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf (IPCC, Synthesis Report).
[4] IPCC, Synthesis Report, p. 92.
[5] South Africa's Low-Emission Development Strategy 2050 (Feb. 2020), p. 21, https://www.dffe.gov.za/sites/default/files/docs/2020lowemission_developmentstrategy.pdf.
[6] The Presidency, Republic of South Africa, *Just Energy Transition Implementation Plan 2023-2027*, p. 15, https://www.stateofthenation.gov.za/assets/downloads/JET%20Implementation%20Plan%202023-2027.pdf.
[7] SETs Report, p. 28.

9. The Climate Change Bill requires the Minister to identify "*the greenhouse gas emitting sectors and sub-sectors that are subject to sectoral emission targets*" and set such targets in consultation with the relevant sector and sub-sector Ministers.[8] In doing so, "*the Minister must take all relevant considerations into account, including, amongst others (a) the socio-economic impacts of introducing the sectoral emissions targets; and (b) the best available science, evidence and information*."[9]

10. Within one year of publishing the SETs, the Minister responsible for each sector and sub-sector must develop or amend relevant policies and measures for purposes of achieving the SETs, publish the amendments in the *Gazette*, implement the policies and measures, and monitor effectiveness of their implementation.[10]

11. Every five years, the SETs must be reviewed, and, "*when the outcome of the review or national circumstances require it*," revised.[11] The need for revision and amendment may be based on "*(a) monitoring and evaluation results; (b) technological advances; (c) the best available science, evidence or information; (d) the Republic's international commitments and obligations; (e) the strategic importance of the sector or sub-sector as a catalyst for growth and job creation in the economy; or (f) the agreed approach to the just transition*."[12]

B: GENERAL COMMENTS

Sectoral emission targets should be developed in line with an approach that integrates the objectives of addressing poverty and inequality with the transition to net-zero carbon society.

12. South Africa faces the challenge of climate change as a developing country, with overriding priorities to eliminate poverty and eradicate inequality. Eliminating poverty and eradicating inequality requires addressing major challenges in creating decent employment, which in turn requires sustainable economic development, improving basic education, health and social welfare and many other basic needs such as access to food, shelter and modern energy services. In addition, South Africa is presently facing acute energy challenges that hamper economic development. As a result of the historical development pathway of its energy sector, South Africa is currently heavily dependent on coal, with a fleet of old and inefficient coal-fired power plants that are nearing, but not yet at, the end of their design life- cycles as well as being reliant on a significant proportion of its liquid fuels being generated from coal with increasing enthusiasm in adopting gas to power alternatives. Therefore, in the short-term (up to 2025), South Africa faces significant rigidity in its economy and any policy-driven transition to a low carbon and climate resilient society with the government seemingly prioritizing its overriding focus on addressing poverty, inequality and energy deficiency.[13] While addressing poverty and inequality is crucial, delaying significant climate action through the rapid phase out of fossil fuels within an appropriate development pathway as required in South Africa's revision of its current NDC will very likely exacerbate long term environmental, economic, and social issues. The impacts of

[8] Climate Change Bill, Section 22(1)-(3).
[9] Climate Change Bill, Section 22(5).
[10] Climate Change Bill, Section 22(9).
[11] Climate Change Bill, Section 22(7).
[12] Climate Change Bill, Section 22(7)(a)-(f).
[13] South Africa NDC. 2020/2021 update, at page 3.

climate change, such as extreme weather events and resource scarcity, often disproportionately affect the most vulnerable populations, potentially worsening poverty and inequality if not addressed rapidly. Economic development and energy security are essential for the wellbeing of South African citizens, but there should be no perceived dichotomy between transitioning to a net zero society and addressing poverty and inequality. This narrative is false, as these goals can be complementary. Rapid decarbonization through robust sectoral emission reduction targets, substantial investment in renewable energy to triple capacity by 2030, prioritizing climate smart agriculture, and adopting green infrastructure can create jobs, reduce energy costs, and improve public health, all of which directly contribute to poverty alleviation and economic resilience.

Sectoral targets within the scope of South Africa's SETs need to align with a net zero to 2050 pathway, which should also be reflected in South Africa's upcoming submission of its revised NDC.

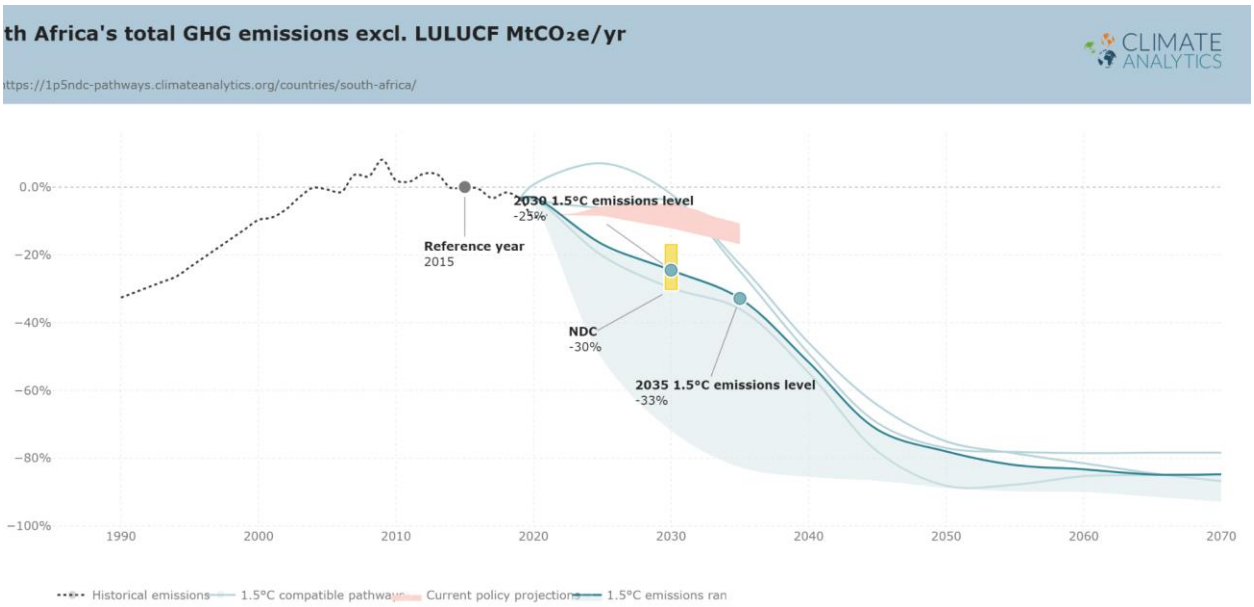
13. Having reviewed South Africa's most recent NDC that was submitted in 2021, it appears that South Africa committed to reducing its GHG emissions to 398-510 MtCO2e by 2025, and to 350-420 MtCO2e by 2030. To be 1.5°C compatible, South Africa's emissions would need to fall to 26-72% below 2010 levels (excl. LULUCF), or to 148-397 MtCO2e/yr by 2030.[14] However under current policies, South Africa is not on track to achieve its NDC target, indicating there is still a need to strengthen policies and actively put them into effect.

14. Under 1.5°C compatible pathways, South Africa would need to limit GHG emissions to 59-116 MtCO2e/yr by 2050 excluding LULUCF, equivalent to 78-89% below 2010 levels. CO2 emissions would need to reach between -42 and 33 MtCO2e/yr excluding LULUCF to be 1.5°C compatible. To be 1.5°C compatible, South Africa's emissions need to fall by 26-72% below 2010 levels by 2030 (excluding land use and forestry). The more ambitious end of South Africa's NDC target is **narrowly aligned** with 1.5°C, **while the upper end is not**. Under current policies, South Africa will not achieve this target. More robust SET targets therefore need to be adopted in order to adequately align with a 1.5 degree scenario pathway of emissions reductions development in relation to a more robust NDC. Coal dominates South Africa's power sector, supplying 87% of electricity generation in 2021. Under 1.5°C compatible pathways, coal would be phased out between 2030 and 2035. However, South Africa's draft Integrated Resource Plan 2023 (IRP 2023) proposes delaying the decommissioning of some coal plants.

15. The Energy sector accounts for 80% of emissions with emissions currently being placed at 478 MtCO2e/yr and industry only amounting to 5.5%. What is important to note is that South Africa's draft IRP 2023 proposes to delay the decommissioning of some of its coal plants by as much as ten years which reduces the progressiveness and robustness of its NDC in line with the 1.5 degree target. Hence the SETS needs to take into account further reductions in the energy sector primarily from the continued expansion of coal fired power from coal and gas. Based on that gap, the sectoral targets could be much more ambitious in order to ensure that a more progressive and robust NDC results in a substantial decline this critical decade in order to keep 1.5°C within reach.[15]

[14] See note above at page 15.
[15] https://climateactiontracker.org/publications/paris-aligned-benchmarks-power-sector/

16. It is critical to consider the below graph for reference in regards to the above:



17. This graph above which is taken from climate analytics[16] depicts South Africa's total greenhouse gas (GHG) emissions excluding land use, land use change, and Forestry (LULUCF), measured in million tonnes of CO2, equivalent per year (MtCO2e/yr) over time, from approximately 1990 to 2070. Some key elements to note include:

- Represented by the light red shaded area, indicating the expected path of emissions if current policies remain unchanged. This pathway does not show significant reductions, suggesting that current policies are insufficient for meeting the 1.5°C target.
- This broad light blue area indicates the range of possible future emissions that align with keeping global warming to 1.5°C above pre-industrial levels. This range shows emissions dropping sharply post-2020 and continuing to decrease gradually until around 2070.
- Nationally Determined Contribution (NDC) which is marked as a point indicating a 30% reduction by 2030 compared to 2015 levels. This is South Africa's current commitment under the Paris Agreement.

18. In considering these key elements the following is identified:

- The current policy projections (light red shaded area) indicate that without significant changes, South Africa will not achieve the necessary reductions to stay within the 1.5°C target.[17]
- South Africa's current NDC aims for a 30% reduction by 2030 compared to 2015 levels. This target is shown on the graph but is not aligned with more ambitious 1.5 degree pathways. If the NDC

[16] https://1p5ndc-pathways.climateanalytics.org/countries/south-africa/ambition-gap
[17] Climate Action Tracker, "South Africa. November 2023.," 2023, ; Republic of South Africa, "South Africa's First NDC, 2020/21 Update" (Republic of South Africa, 2021), https://www.climatecommission.org.za/publications/south-africas-ndc-targets-for-2025-and-2030

reduction targets remain the same or marginally improved under the new SETs, then it is very likely that South Africa will be unable to achieve a reduction pathway that is ambitious enough to either achieve the 1.5 degree target or likely overshoot it.

19. Having considered the above, it is our submission **that to align with a net zero by 2050 pathway**, South Africa needs to adopt more ambitious sectoral targets within the SETs framework, particularly in energy, industry and transportation. The middle of the 1.5 degree compatible range shows the need for a 25% reduction by 2030 and a 33% reduction by 2023, indicating that the current NDC is insufficient therefore requiring the reconsideration of appropriate robust policies that drastically and rapidly reduce emissions across all sectors.

20. In the next 10 years, significant ambition will be needed to sufficiently reduce GHG emissions within the necessary 1.5 trajectory range and to get South Africa where it needs to be to avoid the worst impacts of the climate crisis. Doing this will require a commitment by South Africa redeveloping its NDCs to incorporate SETs which commit to increasing the ambition to phase out existing fossil fuel GHG emission contributors without the reliance of CCS technology, and halt all new fossil fuel investment for primarily the energy, industry and transportation sectors as soon and as rapidly as possible. This will require streamlined and co-operative efforts across all government departments to refrain from facilitating the continued lock-in to new fossil fuel infrastructure, which is not needed.

21. Any reluctance to strengthen sectoral targets across sectors will only lead to a delaying of ambitious actions to significantly reduce global warming to below 1.5 degrees. This will invariably pose a risk of escalating costs of action in 2035 and beyond, and will likely lead to global average temperatures above 1.5 degrees as of the early 2030s for several decades at the least.

The SETs should keep pace with climate realities and technological advancements.

22. As permitted under Section 22(7) of the Climate Change Bill, the SETs should be revised every 5 years in light of best available science, technological advances in electrification and emissions abatement, and South Africa's progress towards achieving net zero emissions by 2050. We strongly caution against assuming that implementation of all the policies and measures identified in the SETs Report will be sufficient to satisfy South Africa's climate commitments.

Further information and insight required.

23. The allocation of SETs effectively amounts to a negotiation around the claims to the remaining carbon and GHG space that can be taken up by the South African society and economy. It is ultimately not line department that are competing for an allocation, but rether communities, consumers and commercial or economically active roleplayers. Certain sectors are harder to abate than others. GHG emission reduction in the electricity sub-sector for instance are easier to attain than in other sectors, with widespread deployment of renewable energy and storage both technically and economically feasible, and in many cases superior, to maintaining or even expanding a fossil fuel intensive generation system. **We therefore request insight and information on whether any parties in hard-to-abate sectors have made input into the SETs allocation process, or were invited to do so**.

24. The SETs report speaks of *"…an in-depth analysis to evaluate the key greenhouse gas mitigation levers of PAMs and the impacts of PAMs on greenhouse gas emissions of the country."*[18] **We request the possession or public release of the report or findings of the analyses referred to.**

25. Transparency is a key feature of climate change governance. It is no exaggeration to say that the form of a mechanism as key and powerful as the SETs will likely impact all roleplayers directly or indirectly, and that full disclosure of all material processes and discussions that inform the targets is essential and in keeping with the Constitution.

C: SPECIFIC COMMENTS

The SETs should be guided by South Africa's updated Low Emission Development Strategy (LEDS) 2050.

26. To ensure that the 2030 SETs are stringent enough to achieve net zero by 2050, the Department should first identify what is necessary in the long-term. To the extent the Department has not yet determined net zero pathways for South Africa, it is not possible for civil society to fully assess the ability of the 2030 SETs to limit warming to 1.5°C and ensure South Africa meets its climate obligations.

27. The SETs Report notes that South Africa's LEDS 2050 "*will include a defined national vision towards achievement of net zero by 2050, a description of the path going forward to place the country on a coupled low carbon trajectory and socio-economic development path, and a road map of the policies and measures needed to achieve these goals*."[19] In addition, "*work is concurrently being undertaken to inform the long-term SETs to 2050*."[20] This longer term planning is more than merely complementary to the 2030 SETs process–it should either precede or at least actively feed into this process.

28. For example, prior to setting sector-specific GHG emissions sub-limits for 2025 and 2030, Massachusetts first "*developed metrics and conducted analyses to explore different pathways and associated GHG emissions limits that would maximize the state's ability to achieve net zero in 2050*."[21] This net zero analysis was guided by principles for achieving a clean economy: "*GHG emissions reductions, consumer costs and benefits, energy supply and delivery, equity and environmental justice, stakeholder input, market transformation, and implementation feasibility*."[22] The 2025/2030 Clean Energy and Climate Action Plan then set sector-specific limits and sub-limits for transportation, electricity, and industry that updated and refined the 2050 Roadmap analyses.[23]

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[18] SETS Report, p.20
[19] SETs Report, p. 17.
[20] SETs Report, p. 21.
[21] Massachusetts Executive Office of Energy and Environmental Affairs and Massachusetts Global Warming Solutions, *Massachusetts Clean Energy and Climate Action Plan for 2025 and 2030* (June 30, 2022), p. 8, https://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/4_dech4.pdf.
[22] *Massachusetts Clean Energy and Climate Action Plan for 2025 and 2030*, p. 8.
[23] *Massachusetts Clean Energy and Climate Action Plan for 2025 and 2030*, p. 21.

29. The Australian Government is also developing a Net Zero Plan to "*guide how Australia can transform [its] economy to net zero by 2050*."[24] Six sectoral plans for electricity and energy, industry, resources, the built environment, agriculture and land, and transport will underpin the Net Zero Plan. The Electricity and Energy Sector Plan, for instance, "*will set out a credible pathway to decarbonise Australia's electricity and energy sector by 2050 while ensuring reliable, secure, and affordable energy supply*."[25] This sector-specific plan seeks to "*ensure a coordinated and sequenced energy transformation that maximises decarbonisation across other sectors*."[26]

30. A net zero by 2050 analysis like those undertaken by Massachusetts and Australia would provide important context for the 2030 SETs including: "*What the GHG, CO2 emissions profile and energy production and use profile is now and what it would look like in 2050; What transitions this will involve and when these would occur, in emissions-related sectors of the economy; What the socio-economic impacts of these transitions would be.*"[27] The Energy Systems Research Group's initial study on net zero pathways for South Africa found that "a *net zero CO2 target is compatible with a relatively small range of cumulative GHG budgets to 2050*."[28] ESRG cautioned that a last-minute, massive upscaling of clean energy "*would probably not be possible, for logistical, institutional and economic reasons, and requires careful analysis with a range of other policy priorities in mind; in addition, delayed action will probably result in South Africa's economy becoming uncompetitive internationally, as the economics of the energy transition unfold*."[29]

31. These types of considerations should be factored into determining interim targets leading up to net zero by 2050. If South Africa fails to impose sufficiently ambitious 2030 SETs, particularly in the electricity sector on which other sectors depend for rapid decarbonization, it will face significant hurdles in achieving a timely clean energy transition.

The energy sector SETs should not include heavy reliance on gas.

32. Fossil gas has been incorrectly portrayed as a necessary transition fuel for countries to move from a predominantly coal-based electricity system to a renewable-based system. Gas does generate lower particulate matter and CO_2 emissions per unit of electricity than coal. However, the significant climate impact of methane leaks from the gas supply chain can outweigh these benefits, making gas as, or even more, damaging to the climate than coal overall.[30]

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[24] Australian Government, *Electricity and Energy Sector Plan: Discussion Paper* (March 2024), p. 6, https://storage.googleapis.com/files-au-climate/climate-au/p/prj2cb140024fcb5c57b1f5f/page/Electricity%20and%20Energy%20Sector%20Plan%20Discussion%20Paper.pdf.

[25] *Electricity and Energy Sector Plan: Discussion Paper*, p. 6.

[26] *Electricity and Energy Sector Plan: Discussion Paper*, p. 7.

[27] Energy Systems Research Group, *Exploring Net Zero Pathways for South Africa: An Initial Study* (2022), https://zivahub.uct.ac.za/ndownloader/files/39766924.

[28] Energy Systems Research Group, *Exploring Net Zero Pathways for South Africa: An Initial Study*.

[29] Energy Systems Research Group, *Exploring Net Zero Pathways for South Africa: An Initial Study*.

[30] Gordon, D., Reuland, F., Jacob, D. J., Worden, J. R., Shindell, D., & Dyson, M. (2023). Evaluating net life-cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates. Environmental Research Letters, 18, 084008. https://doi.org/10.1088/1748-9326/ace3db.

33. The 2021 Global Methane Assessment Report, produced by the United Nations Environment Program (UNEP) and the Climate and Clean Air Coalition (CCAC), conducted a meta review of the global literature on the impact of methane emissions on global warming and the associated benefits and costs of mitigating these emissions.[31] The assessment underscores the climate benefits of reducing methane emissions. Methane is a potent climate pollutant that is 84 times more warming than CO_2 on a 20-year time horizon. For this reason it is problematic to use the 100 year Global Warming Potential for methane when measuring and implementing methane reduction measures. Atmospheric concentrations of methane have doubled since pre-industrial times, rendering it the second-largest driver of climate change after CO_2. Without adequate laws and policies, methane emissions are projected to continue escalating, presenting a significant obstacle to achieving climate goals.

34. To achieve adequately steep and substantial GHG emissions reduction, we must dramatically change the way we produce electricity. Multiple studies have been done in South Africa into how this can be achieved in the electricity sector–often regarded as the "easiest" sector to decarbonise, compared with hard-to-abate sectors such as industrial heating, because of the large number of solutions available.

35. For example, the National Business Initiative, Business Unity South Africa, and the Boston Consulting Group Climate Pathways and Just Transition study assesses what it would take for South Africa to reach net-zero by 2050 and to ensure a Just Transition. The study found that South Africa can solve its current energy crisis and realise a Just Transition to a competitive, net-zero economy, if it can unlock its globally advantaged, high-potential wind and solar energy resources at scale and at an unprecedented pace. In essence, it states that large-scale renewable energy deployment is the backbone of a Just Transition.

36. Another example is the "Recommendations from the PCC on South Africa's Electricity System",[32] a report conducted by the Presidential Climate Commission. The report highlights that, given the importance of electricity for development, electricity planning should be anchored on least cost pathways. The essence of the recommendation was a policy adjusted IRP to promote approximately 50 to 60 GW of variable renewable energy by 2030, supported by co-located storage, and between 3 and 5 GW of peaking support (for example gas, running at low utilisations).

37. Instead of investigating policies and measures to minimize reliance on gas and accelerate renewable energy development for electricity, the SETs Report relies on existing policies and measures that *increase* South Africa's reliance on gas, such as the Gas Master Plan, Upstream Petroleum Resources Development Bill, and IRP 2023. These types of policies all intend to prioritize and facilitate the development of fossil fuel gas infrastructure and assets which will likely exacerbate methane

[31] United Nations Environment Programme and Climate and Clean Air Coalition (2021). Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions. Nairobi: United Nations Environment Programme.

[32] https://www.climatecommission.org.za/publications/recommendations-from-the-pcc-on-south-africas-electricity-system

emissions. The IRP 2023's build plan, for example, provides for 6,000 MW of new gas capacity in addition to 1,376 MW of dispatchable capacity, which is "assumed to be gas CCGT, due to the lead times associated with new coal builds."[33] The UPRDB similarly seeks "*to…accelerate exploration and production, and maximise the economic recovery of petroleum for the benefit of the people of South Africa*.[34] The Electrification Program discussed as a key policy only pertains to the residential sector and does not set clean energy benchmarks for transforming the electricity system more broadly.

38. The SETs process should include an examination of the compatibility of existing policies and measures with a net zero by 2050 pathway. Those policies and measures that do not allow South Africa to achieve its net zero goals should be revised or set aside. It is unclear how the SETs Report concludes that the 1.5-degree scenario can be achieved "*when policies are implemented as stated*" given the high GHG emission intensities of several of these policies.[35]

Further electricity sub-sector specific comments

39. Based on our experience with engaging with electricity generation related policies and measures from climate perspective, it is our view that the DMRE does not exhibit an adequately coherent, transparent and effective commitment to climate mitigation and GHG emissions reduction. The IRP 2023, the supplied supporting documentation and the public participation process relating thereto did not yield clear information to substantiate claims that the plan conforms to the current NDC, let alone future, stricter NDCs. Furthermore it provides for an unnecessarily large and risky allocation for gas generation, delays coal plant decommissioning and slashes public procurement of renewable energy (as compared to IRP 2019). The point of raising this is to highlight the concern about the so-called bottom up approach, whereby line departments appear to effectively present their existing PAMs which might not be the most appropriate from a GHG emissions reduction perspective, and may not exhibit the highest possible ambition. It is submitted that the DFFE, as the holder of the holistic GHG emission reduction management imperative, should proactively be making input about what is acceptable and workable in the positions and PAMS being tabled by other line departments.

40. The SETs report refers to GHG reduction to be achieved, *inter alia*, through "*a switch to non-renewable fuel*"[36]. While the meaning of this is not explained, it is denied that a switch to gas for electricity generation purposes will achieve GHG emissions reduction given the lifecycle emissions for gas.

41. The information relating to expected sector growth and the drivers of increased GHGs for electricity are limited to increased population leading to increased household electrification and appliance use. There is no accounting for increased use by industrial and business use, as well as general expanded economic activity, nor the electricity required for decarbonising other sectors, such as charging electric vehicles. An omission such as this brings into question the modelling process.

The energy and coal mining sectors SETs should include more methane-specific policies and measures.

[33] SETs Technical Report; SETs Report, p. 28.
[34] UPRDB, Section 2(j).
[35] SETs Report, p.36.
[36] SETs Report, p.28

42. The level of methane reduction needed to keep warming to 1.5 degrees will not be achieved by broader decarbonization strategies alone. Any structural changes that support a transformation to a zero carbon society will only be able to achieve about 30% methane reductions needed over the next 30 years.[37] Furthermore, methane emissions from fossil fuels, agriculture and waste should be reduced with energy related methane emissions falling by 66% by 2030 (from 2020 levels) and total methane from all sources falling by 34% by 2030.[38]

43. Focused strategies specifically targeting rapid reductions of methane within the ambit of sectoral targets need to be implemented over the short term. For instance, methane emissions from coal mining are just as substantial as those from the oil or gas sectors respectively. However reliable estimates are hard to obtain which makes it not only difficult to get a clear understanding of the scale of the problem but also hinders the design of effective regulations, policies, strategies on reducing fugitive emissions from coal mines.

44. The International Energy Agency has identified several policies that governments could adopt to target methane emissions:[39]

    44.1. **Leak detection and repair** policies specify the method and equipment required for leak detection and the timeframe for repairing leaks.

    44.2. **Technology standards** can mandate replacement of certain equipment with lower-emitting alternatives. Examples include abatement options such as replacing the compressor seal or rod, instrument air systems, or pumps.

    44.3. Policies **prohibiting all non-emergency flaring and venting or requiring processes or procedures to reduce flaring and venting** can lower emissions.

    44.4. **Performance standards** set facility-wide or even equipment-specific minimum standards without dictating how these standards need to be met.

    44.5. **Methane emission charges or taxes** on an entity's overall emissions or emissions intensity at individual sites can incentivize reductions.

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[37] United Nations Environment Programme and Climate and Clean Air Coalition (2021). Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions. Nairobi: United Nations Environment Programme file:///C:/Users/LaurenNel/Downloads/GMA.pdf 9 - 10.En

[38] United Nations Environment Programme and Climate and Clean Air Coalition (2023).The Imperative of Cutting Methane from Fossil Fuels. International Energy Agencey, accessed via https://www.ccacoalition.org/sites/default/files/resources/files/The%20imperative%20of%20cutting%20methane%20from%20fossil%20fuels.pdf

[39] International Energy Agency, *Curtailing Methane Emissions from Fossil Fuel Operations: Pathways to a 75% cut by 2030*, pp. 27, 29-30, https://iea.blob.core.windows.net/assets/ba5d143a-f3ab-47e6-b528-049f81eb31ae/CurtailingMethaneEmissionsfromFossilFuelOperations.pdf.

44.6. **Monitoring, reporting and verification regimes** provide the source-level measurements needed to enforce compliance with regulatory requirements.

45. Although the SETs Technical Report identifies eliminating gas venting as a mitigation measure for the oil and gas production sector, it does not specify a policy requiring adoption of this measure. To the extent the DFFE has not considered the above policy measures in determining the energy sector SETs, deeper emission cuts are likely possible.

46. The SETs Technical Report further sets out how emissions reductions in the mining sector would among others come from reducing fugitive emissions from coal mines.[40] Accordingly, there is a need to establish a monitoring system of fugitive emissions in order to monitor and manage fugitive emissions from coal mines[41] because in its absence fugitive emissions are likely higher than currently estimated. For example:

46.1. In 2021, Kayrros SAS, a Paris-based analytics company detected significant fugitive methane clouds about 125 km east of Johannesburg, South Africa. However, no major coal mining operations in the area reported unusually high methane release during the leaking period. This is surprising as a coal mining company would know or be aware of the exact location and sources of their coal mine methane emissions in order to prevent the risk of an explosion.[42]

47. Currently, there exists no policies to manage or reduce fugitive methane emissions from coal mines nor is there proposal that one be developed by DMRE which will hinder SETs goal to steer sectors to make transformative changes for achieving long-term climate action.

The energy sector SETs should not allow for new coal.

48. The energy sector SETs rely on IRP 2023 build plans.[43] The IRP's analysis for the Horizon 1 period from 2024 through 2030 includes adding 1,440 MW of new coal capacity by 2025.[44] The plan also proposes delaying shutdown of coal fired power plants to retain dispatchable capacity where technically and commercially feasible.[45]

48.1. *Global coal consumption without CCS needs to be largely eliminated by 2040–2050 to limit warming to 1.5°C (>50%), and 2050–2060 to limit warming to 2°C (>67%) (*high confidence*). New investments in coal-fired electricity without CCS are inconsistent with limiting warming to 2°C (>67%) or lower (*high confidence*) (Edenhofer et al. 2018; Pfeiffer et al. 2018; Spencer et al. 2018; Cui et al. 2019).*[46]

[40] SETs Technical Report at para 5.1.1
[41] SETs Technical Report,
[42] Large Methane Leak Detected Over South Africa Coal Mining Region - Bloomberg (accessed 22 June 2024
[43] SETs Technical Report.
[44] IRP 2023, p. 22.
[45] IRP 2023, p. 23.
[46] Clarke, L., Y.-M. Wei, A. De La Vega Navarro, A. Garg, A.N. Hahmann, S. Khennas, I.M.L. Azevedo, A. Löschel, A.K. Singh, L. Steg, G. Strbac, K. Wada, 2022: *Energy Systems*, p. 698. In IPCC, 2022: Climate Change 2022: Mitigation of

49. Reducing coal power sector emissions in line with the 1.5-degree goal means no new development of coal-fired power plants should be authorised. Reducing coal power sector emissions in line with the 1.5-degree goal means no new development of coal-fired power plants should be authorised. Therefore, the inclusion of 1,440 MW of new coal capacity by 2025 and delaying the planned shutdown of coal fired power plants will make it more challenging to stay on track to meet the Paris Agreement temperature goals.

The transportation SETs are insufficient to achieve net zero emissions.

50. Globally, transportation accounts for over a third of CO2 emissions from end-use sectors.[47] In particular, the road transport sector, including passenger cars, buses, and heavy and light commercial vehicles, is responsible for approximately 77% of global transport related GHG emissions.[48] This means that achieving net zero emissions by 2050 will not be possible without decarbonising the transportation sector. The International Energy Agency found that CO2 emissions must fall by more than 3% annually by 2030 to align with its Net Zero Emissions by 2050 Scenario.[49]

51. Decarbonisation of the transportation sector will not occur without the support of policies and measures incentivizing and ensuring its implementation. As the International Council on Clean Transportation explains:

    51.1. "*The bottom line is that a sector that is almost exclusively dependent on a single energy source, petroleum, operating on infrastructure that represents trillions of dollars of investment over many decades, must change substantially in little more than a generation. Efforts to limit pollution and climate impacts of existing technologies must be continued and strengthened. Yet that will not be enough.* ***Ambitious policies, incentives, and investments to bring forth new, clean transportation technologies and systems must be put in place without delay***."[50]

52. In South Africa, the transportation sector is the *"second largest contributor to emissions after the electricity sector."*[51] The Energy Systems Research Group's 2022 net zero pathways study found that

Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.008.

[47] International Energy Agency, *Transport*, https://www.iea.org/energy-system/transport.

[48] United Nations Economic Commission for Europe, *At COP28, UNECE and partners highlight need to decarbonize inland transport and how UN tools and legal instruments can help* (Dec. 6, 2023), https://unece.org/media/press/386256.

[49] International Energy Agency, *Transport*, https://www.iea.org/energy-system/transport.

[50] International Council on clean Transportation, *Vision 2050: A Strategy to Decarbonize the Global Transport Sector by Mid-Century* (2020), p. 3, https://theicct.org/wp-content/uploads/2021/06/ICCT_Vision2050_sept2020.pdf.

[51] SETs Report, p. 27.

achieving net zero CO2 emissions by 2050 would require electrifying the private vehicle fleet, buses, and minibuses:

52.1. *For passenger transport, private passenger transport is dominated by diesel and gasoline vehicles (smaller cars and SUVs) initially, with an almost complete shift to electric vehicles from the later 2020s on. In the reference case, there is a shift back to diesel cars as a result of the low oil price. In the net zero cases, the private vehicle fleet is entirely electrified by 2050. In public transport, the underlying economics result in a shift in the reference case from diesel buses and diesel and gasoline minibuses, to complete electrification of both buses and minibuses by 2050.*[52]

53. Table 3.42 of the SETs Technical Report detailing the maximum uptake of alternative fuels in 2050 per vehicle type provides that around 51% of cars and SUVs, 48% of motorcycles, and 10% of buses will be electrified over the next three decades.[53] This significantly slower proposed rate of electrification will not allow South Africa to meet its net zero goal.

54. Given limited government resources for testing and scaling ideas for decarbonising public transport, "*policies and initiatives that promote public-private-partnerships need to be put in place to capitalize on the potential role of the private sector towards sustainable mobility*."[54] For example, as one study suggests, "*the introduction of a PPP Act or an act that facilitates the process could also be beneficial by addressing the inadequacies of the current regulatory framework (which comprises the PFMA and other legislation), making compliance simpler and promoting innovation and inclusivity*."[55]

55. South Africa should also consider adopting fiscal and non-fiscal measures to accelerate EV adoption. Kenya's Draft National E-Mobility Policy, for example, proposes tax incentives such as import duty, excise duty and VAT exemptions on completely built up EVs for a time and developing a framework for awarding subsidies for public service transport players providing high-capacity EV passenger transportation. [56]

Critique of the Lack of Accountability and Transparency in SETS GHG Emissions Reporting Requirements

56. According to section 5 (M&E Approach of the framework for the SETS) that section details at page 40 that sector departments are not expected to report against SETS in terms of GHG emissions equivalent. If sector departments are not required to report greenhouse gas (GHG) emissions

[52] Energy Systems Research Group, *Exploring Net Zero Pathways for South Africa: An Initial Study* (2022), https://zivahub.uct.ac.za/ndownloader/files/39766924.
[53] SETs Technical Report, Table 3.42.
[54] *IAP-NASAC Workshop Summary Report: Decarbonisation of Transport in Africa* (April 2022), p. 10, https://www.interacademies.org/sites/default/files/2022-04/IAP-NASAC%20Decarbonisation%20of%20Transport%20in%20Africa%20Workshop%20Summary%20Report%20-%20ENGLISH.pdf.
[55] Sebitlo, O.K., Mbara, T. & Luke, R., 2022, *The state of South Africa's public–private partnership practices in transport projects: Problems and potential*, Journal of Transport and Supply Chain Management 16(0), a733, p. 14, https://jtscm.co.za/index.php/jtscm/article/download/733/1340.
[56] Electric Mobility Taskforce, *Draft National E-Mobility Policy, Kenya* (Mar. 2024), p. 8, https://actiri.org/2024/03/28/draft-national-e-mobility-policy-kenya-march-2024/.

equivalents, there is a lack of accountability and transparency regarding their contributions to climate change. Without reporting, it becomes difficult to track progress, identify areas for improvement, and hold sectors accountable for their emissions. This can hinder the effectiveness of national climate policies and strategies. Requiring all sectors to report their GHG emissions ensures that there is a comprehensive understanding of the national emissions profile, facilitating more informed decision-making and targeted interventions. Without reporting GHG emissions equivalents, sector departments may miss opportunities to identify and implement specific mitigation measures tailored to their unique circumstances.

57. Without reporting GHG emissions equivalents, sector departments may miss opportunities to identify and implement specific mitigation measures tailored to their unique circumstances.

Critique of the Over-Reliance and Limitations of Econometric Models in South Africa's Socio-Economic Strategy

58. With regards to the modeling framework adopted by the drafters, the strategy sets out that, the uptake and/or penetration rates are based on values given in existing policies and if a value is not available in a policy such as the national energy efficiency strategy, the value is then based on sector expert inputs on what is the most realistically feasible value the sector can achieve in 2030.[57] This is a simulation model used to assesses the socio-economic implications of different scenarios for sectors and the whole economy based on a Social Accounting Matrix (SAM) of South Africa. It uses a set of econometric equations to predict economic behavior based on the changes to the economy based on the implementation of the PAMs assessed in the scenarios. This model is used to provide investment requirements and employment data.

59. One argument against the use of such integrated economic models is the potential over-reliance on econometric equations and simulations. These models are based on historical data and assumptions that may not fully capture future uncertainties or unexpected events, such as political instability or global economic shocks. Consequently, the predictions made by these models may be overly optimistic or pessimistic, leading to misguided policy decisions. While econometric models provide valuable insights, they should be used alongside other qualitative and quantitative analyses.

60. Another critique is that such economic models might inadequately consider social and environmental factors. While the South African Socio-Economic Model includes socio-economic implications, it might not fully address the broader impacts on social equity, environmental sustainability, and long-term human development. Economic growth projections alone do not ensure improvements in social welfare or environmental health. Integrating additional indicators related to social and environmental sustainability can enhance the model. Policymakers should ensure that economic strategies are balanced with goals for social equity and environmental conservation.

61. The accuracy of any economic model heavily depends on the quality of the data and the assumptions underlying the model. In the context of South Africa, data might be incomplete, outdated, or biased, leading to skewed results. Furthermore, the assumptions regarding economic behaviour, policy

[57] Section 4.3 of the Strategy at page 37-40.

impacts, and market responses may not reflect the real-world complexities and diversities within the South African economy. Engaging a diverse group of stakeholders in the model development process can help ensure a more accurate and representative framework.

Conclusion

62. We appreciate the opportunity to comment on the proposed SETs. We request an opportunity to address the appropriate forum through oral comments and dialogue.

63. We further reiterate our request the information highlighted above, in particular that specified in paragraphs

Yours faithfully

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On behalf of Natural Justice and the Centre for Environmental Rights.