THE AMBITION CALL

The Ambition Call provides country recommendations for immediate climate action in response to the UN Secretary-General's request for countries to:

- present concrete, realistic plans that are compatible with the latest IPCC Special Report on global warming of 1.5°C
- enhance their NDCs by 2020 and
- \bullet reduce GHG emissions by 45% over the next decade, and to net zero by 2050.1

The 2019 Summit in Osaka saw the G20 countries (with the exception of the USA) reaffirming their commitments to fully implement the Paris Agreement.² Many have already announced their willingness to increase their mitigation targets, aiming for net-zero emissions by 2050.

SOUTH AFRICA

GREENHOUSE GAS (GHG) EMISSIONS (INCL. FORESTRY) PER CAPITA (tCO₂e/capita)



Data from 2015 | Source: PRIMAP 2018





RECOMMENDED ACTIONS

#1

Achieve ambitious coal transitions for development. Roll out mass electrified

public transit in urban

centres by 2050.

#3

Establish tighter building codes for new residential buildings and shift to more efficient appliances.



Climate Transparency is a global partnership with a shared mission to stimulate a 'race to the top' in G20 climate action and to shift investments towards zero carbon technologies through enhanced transparency. Climate Transparency is made possible through support from the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU), through the International Climate Initiative, ClimateWorks Foundation and the World Bank Group.

https://www.climate-transparency.org/



The Energy Research Centre at the University of Cape Town is a multi-disciplinary research centre with a focus on energy, climate and sustainability, and has done ground-breaking work on post-apartheid South African energy policy, on energy provision for the urban and rural poor and on the energy-environment nexus, and played a leading role in developing both South Africa's current energy and climate policy frameworks. The ERC works closely with policymakers nationally (especially in the National Treasury, the Department of Environmental Affairs and the Department of Energy), with other national stakeholders and with an international network of climate and energy researchers on energy and climate policy challenges, as well as providing advice and negotiating capacity to South Africa's national delegation to the UNFCCC.

http://www.erc.uct.ac.za/groups/esap

RECOMMENDED ACTION

Achieve ambitious coal transitions for development

Coal makes up almost 70% of South Africa's energy mix,³ and a rapid shift away from it is essential for both decarbonisation and development that meets the SDG's and also South Africa's Paris Agreement commitment. Research shows transitioning away from coal in the power sector offers the cheapest opportunity for decarbonisation in South Africa. Cheap and abundant renewable resources mean that 90% of South Africa's electricity could be renewable by 2050.⁴

South Africa's plan for the future of its electricity sector sees the completion of two mega coal plants (Medupi and Kusile), with additional new coal plants, and disregards air quality legislation.

The following actions are cheaper than alternatives and will enhance climate ambition, also improving air quality and public health:

- Cancel the completion of units 5 and 6 of the Kusile coal power plant.⁵
- Enact a moratorium on new, and planned, coal plants.⁶



- Retire coal plants that cannot be economically retrofitted for air quality standards.
- Accelerate decommissioning of old coal power plants.⁷

A more ambitious decarbonisation pathway for South Africa would include closure of all coal plants by 2040 and have significant co-benefits, including less air pollution and water use, with higher levels of low carbon electricity investment.

What does this mean?

A moratorium on new coal plants and accelerated decommissioning of existing ones would mean more and sooner investment in lowcarbon electricity capacity. This would need to be accompanied by an appropriate and properly resourced 'just transition' strategy.⁸ These two measures, coupled with a just transition strategy, would create additional jobs and address many of South Africa's development challenges, boosting sectors that are more likely to form the core of the country's future electricity supply.

Additional development benefits



Reducing coal consumption and shifting to renewables will reduce air pollution and associated diseases such as respiratory problems.



Development of industry related to renewable energy and its supply chain supports full employment through the creation of safe and decent jobs.



Development and integration of new clean technologies supports sustainable industrialisation and infrastructure upgrading.



When displacing coal fired power plants, renewables contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation.



Renewables contribute to conservation of natural habitats through reduced air and water pollution and decreasing water consumption, especially when displacing more polluting or intensive alternatives, such as coal.

Good practice in other countries

By 2024, **Chile** will close eight of its oldest coal-fired power plants – equivalent to 20% of its current coal electricity capacity (currently 40% coal share

in their electricity mix). Chile will phase out its remaining 20 coal plants by 2040.

The **UK** was the first national government to announce a



commitment to phase out unabated coal use, setting a target date of 2025. Starting from 35% in 2005, the share of coal-fired power generation went down to 9% in 2016.

RECOMMENDED ACTION

Roll out mass electrified public transit in urban centres by 2050

Unequal access to mobility is a pressing policy issue for local municipalities in South Africa but there is huge potential for (sub-)national actors to accelerate climate action by decarbonising key areas such as urban passenger transport. For example, they could shift towards public modes of transport and increase electric mobility in three urban areas: Cape Town, Durban and the Gauteng province. As half of all transport-related emissions occur in cities, there is an urgent need for sustainable urban transport systems worldwide. This is important, not only from a climate perspective, but also socially and economically, as transport produces high levels of air pollution from fuel combustion. Furthermore, the increase in urban mobility demand cannot be met by the existing transport infrastructure heavily relying on private vehicles. Thus, several city authorities already strive to initiate a modal shift away from private vehicles towards public transport. Achieving a full decarbonisation of the transport sector relies on the electricity supply sector decarbonising in line with the Paris Agreement temperature limit.





What does this mean?

Direct road transport contributed to an 8% share of national emissions in 2012, with about 50% of these stemming from passenger transport. Direct emissions are projected to almost triple by 2050 under a scenario considering currently implemented and planned policies. Promoting a modal shift towards public transport while increasing electric mobility in Cape Town, Durban, and the Gauteng province

could stabilise ground transport emissions at today's levels by 2050, reducing congestion, air pollution and severe accidents. It would also result in substantial emission reductions if policies were adopted by other regions in South Africa.⁹

Additional development benefits







Switching to zero-emissions transport increases resource efficiency by reducing fossil fuel use and contributes to decoupling growth from environmental degradation. Having new vehicle and fuel types contributes to technological and infrastructure upgrading.



Development and integration of zero carbon transport and associated infrastructure (e.g. charging network) supports sustainable industrialisation, adoption of clean technologies and infrastructure upgrading.



Shifting to zero carbon transport increases access to safe, sustainable transport systems for all and significantly reduces air pollution in cities.



Switching to zero carbon vehicles increases resource efficiency, reduces air pollution and can support adoption of sustainable practices, such as encouraging and enabling users to reduce their transport-related emissions.

Good practice in other countries

The **Chilean** electromobility strategy published in 2017 set out an action plan to achieve a 40% share of the private vehicle fleet – and 100% of public urban transport – being electric by 2050. Many cities all over the world have set themselves targets for CO_2 free transport: Bangalore (bus fleet by 2023), Rotterdam (bus fleet by 2029), Paris (cars and buses by 2025), Rome (cars by 2024), London (buses by 2025), Los Angeles (car fleet by 2050) and more than 30 cities in China (bus and taxi fleet by 2022).

RECOMMENDED ACTION

Establish tighter building codes for new residential buildings and shift to more efficient appliances

Direct energy use in the residential buildings sector contributed to a share of 4% of overall emissions in 2012. Final energy consumption, including electricity has remained high: close to 17% in 2012, with an expectation of further increases, and a growing electrification trend.¹⁰ In its National Development Plan, South Africa has set a goal for zero-emissions buildings by 2030; however, there is still a long way to go to reach that target. As outlined in the proposed Post-2015 National Energy Efficiency Strategy, further climate action could be implemented by looking at the energy performance of newly constructed buildings, the renovation of existing residential building stock to improve thermal performance and energy efficiency improvements to appliances and lighting.¹¹

Naturally, a fully decarbonised electricity sector will be critical for enabling low-carbon electrification trends in residential buildings that are in line with the Paris Agreement temperature limit.

What does this mean?

Transition to low-emission buildings initiatives offer great synergies to achieve several social, health and economic benefits, while encouraging low emissions in the residential buildings sector. Further, accelerated climate action in this sector offers opportunities for job creation and local economic development linked to retrofitting and new construction of green and low-emission residential buildings.

Finally, in addition to policies that aim to decrease carbon intensity of the electricity supply sector, increased action in residential buildings could further reduce GHG emissions by up to 35% below 2018 levels by 2050.12

Additional development benefits



Energy efficiency interventions lead to cost savings, which are realised through reduced energy bills that further lead to poverty reduction.



Energy efficiency in buildings decreases energy poverty due to improved energy affordability, increases energy security due to decreased imports and greater reliability, and improves access to modern and sustainable energy services.



efficiency in residential buildings offer related opportunities for job creation and local economic development and the construction of new green and lowemission residential buildings.



Urban planning for enabling efficiency supports upgrading and retrofitting of industries. It also leads to increased resource efficiency and adoption of environmentally sound technologies.



Retrofits and energy efficiency in residential buildings contribute to making cities and human settlements more inclusive, safe, resilient and sustainable.

Good practice in other countries

The **EU**'s Energy Efficiency Directive "requires an annual renovation rate of 3% of buildings owned and occupied by national central governments".



In the **US**, the Energy Independence and Security Act passed in 2007 requires major renovations of public buildings to be fossil free and zero net energy.



THE AMBITION CALL

REFERENCES (FOR **SOUTH AFRICA**)

- 1 **United Nations (2019)**. Information Note on the 2019 Climate Action Summit of the Secretary-General. Retrieved from <u>https://www.un.org/en/climatechange/assets/pdf/Information_Note_Climate%20Summit_20Mar2019.pdf</u>
- 2 Deutsche Welle (2019). G20 summit: World leaders agree on climate deal. Retrieved from <u>https://www.dw.com/en/g20-summit-world-leaders-agree-on-climate-deal/a-49408651</u>
- 3 **Climate Transparency (2018)**. Brown to Green: The G20 Transition to a Low-Carbon Economy South Africa. Retrieved from <u>https://</u> www.climate-transparency.org/wp-content/uploads/2019/01/BROWN-TO-GREEN 2018 South Africa FINAL.pdf
- 4 McCall, B., Burton, J., Marquard, A., Hartley, F., Ahjum, F., Ireland, G., Merven, B. (2019). Least-cost integrated resource planning and cost-optimal climate change mitigation policy: Alternatives for the South African electricity system. Retrieved from <u>http://www.erc.uct.</u> ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
- 5 Steyn, G., Burton, J., Steenkamp, M. (2017). Eskom's Financial Crisis and the Viability of Coal-Fired Power in South Africa: Implications for Kusile and the Older Coal-Fired Power Stations. Retrieved from <u>http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/</u> <u>events/Eskom%E2%80%99s%20financial%20crisis%20and%20the%20viability%20of%20coal-fired%20power%20in%20South%20</u> <u>Africa_%20Implications%20for%20Kusile%20and%20the%20coal-fired%20power%20stations.pdf</u>
- 6 Ireland, G., Burton, J. (2018). An assessment of new coal plants in South Africa's electricity future: the cost, emissions, and supply security implications of the coal IPP programme. Retrieved from https://cer.org.za/wp-content/uploads/2018/05/ERC-Coal-IPP-Study-Report-Finalv2-290518.pdf
- 7 McCall, B., Burton, J., Marquard, A., Hartley, F., Ahjum, F., Ireland, G., Merven, B. (2019). Least-cost integrated resource planning and cost-optimal climate change mitigation policy: Alternatives for the South African electricity system. Retrieved from <u>http://www.erc.uct.</u> ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
- 8 **Burton, J., Marquard, A., McCall, B., (2019)**. Socio-economic considerations for a Paris Agreement-compatible coal transition in South Africa. Retrieved from https://www.climate-transparency.org/wp-content/uploads/2019/07/CT-Just-Transition-in-South-Africa.pdf
- 9 **Climate Action Tracker (2018)**. Scaling up climate action: Key opportunities for transitioning to a zero emissions society South Africa report. November 2018. Retrieved from https://climateactiontracker.org/publications/scalingupsouthafrica/
- 10 **Climate Action Tracker (2018)**. Scaling up climate action: Key opportunities for transitioning to a zero emissions society South Africa report. November 2018. Retrieved from https://climateactiontracker.org/publications/scalingupsouthafrica/
- 11 Climate Action Tracker (2018). Scaling up climate action: Key opportunities for transitioning to a zero emissions society South Africa report. November 2018. Retrieved from https://climateactiontracker.org/publications/scalingupsouthafrica/
- 12 **Climate Action Tracker (2018)**. Scaling up climate action: Key opportunities for transitioning to a zero emissions society South Africa report. November 2018. Retrieved from https://climateactiontracker.org/publications/scalingupsouthafrica/

