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## Namibia's Green Transition: A Summary of the Issues

### Introduction

1. Climate change is likely to have huge implications for Namibia's society and economy over the short, medium and long term. Namibia will stand a better chance of tackling the challenges caused by climate change if it prepares for them and enacts the right policies and actions at the right time. While Namibia has a well-established institutional infrastructure to develop and implement climate policies outlined in official documents such as the Fourth National Communication to the UNFCCC, the Ministry of Finance has a key role to play in designing, enacting and financing many of these policies and actions.

### Basics of Climate Change

2. Scientific understanding of man-made climate change is constantly improving and the international scientific community is now certain that climate change is happening<sup>1</sup>. The main driver of climate change is modern industrial activity which leads to the emission of a variety of Greenhouse Gases (GHGs) into the atmosphere. The main GHG of concern is carbon dioxide but there are many others (including methane, nitrous oxide, hydrofluorocarbons, oxides of nitrogen, sulphur dioxide and non-methane volatile organic compounds), each with different characteristics such as their global warming potential (GWP) and the amount of time they remain in the atmosphere<sup>2</sup>. At the same time, the limited absorption capacity of the oceans combined with changes in land use such as the destruction of tropical rainforests together reduce the earth's ability to capture the carbon released and therefore adds to the net quantity of atmospheric levels of GHGs.

<sup>1</sup> See IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. In Press.

<sup>2</sup> For example, methane (CH<sub>4</sub>) has a global warming potential 84 times that of carbon dioxide but only persists in the atmosphere for little over a decade which means its 100-year GWP is 28 times that of carbon dioxide.



3. Internationally, scientists are tracking changes in average global surface temperatures, the melting of polar ice caps and glaciers, rising sea levels, changing weather, evaporation and rainfall patterns, the frequency of extreme weather events (such as droughts, floods, and cyclones), changes in soil quality, the acidification of the oceans, and resulting changes in patterns of disease. These changes are irreversible over hundreds and thousands of years and have direct implications for activities which support and sustain human beings, especially agriculture, forestry and fishing.

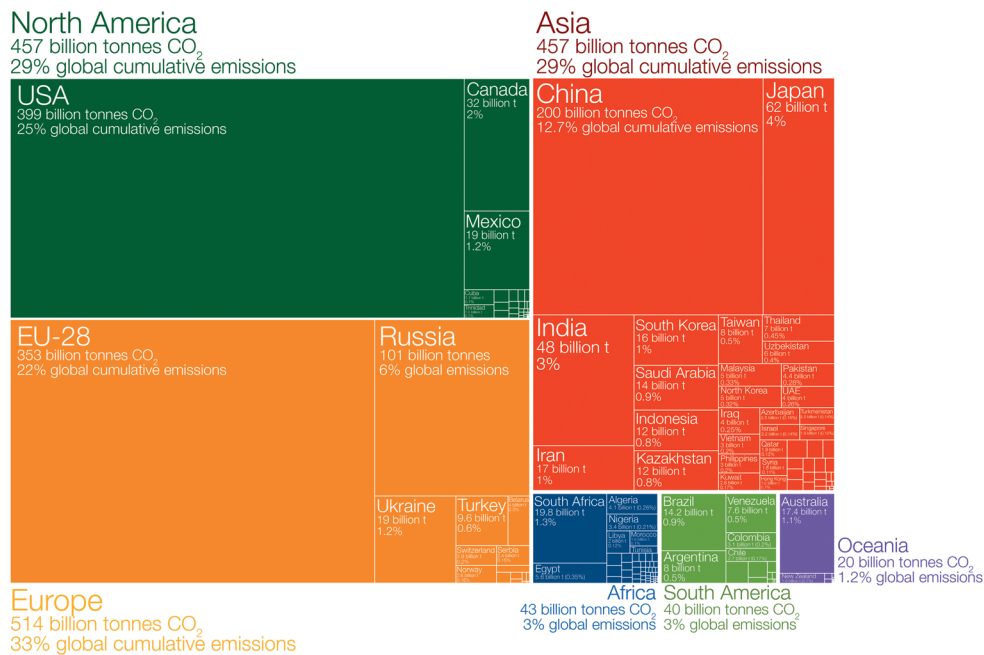
## Country and Sector Emitters

4. Most industrial and agricultural processes have consequences in terms of GHG emissions. Improvements in estimation techniques from a wide variety of industrial processes and land use changes mean good estimates exist for GHG emissions by country, per capita GHG emissions by country, historical emissions by country and emissions by activities for different kinds of transport, industry, power generation, and heating. Thus, for example, we know that the top ten emitting countries currently account for approximately 70% of all GHG emissions and the top 20 (which includes neighbouring South Africa) approximately 80%.
5. Historically, North America, Europe and Asia each account for about 30% of all the GHGs released into the atmosphere while Africa accounts for just 3%. Africa's emissions are predominantly produced by South Africa which is the world's 14<sup>th</sup> largest emitter. Power generation and heating, transport, manufacturing and construction, and agriculture are the four largest GHG-emitting sectors.

## Who has contributed most to global CO<sub>2</sub> emissions?

Cumulative carbon dioxide (CO<sub>2</sub>) emissions over the period from 1751 to 2017. Figures are based on production-based emissions which measure CO<sub>2</sub> produced domestically from fossil fuel combustion and cement, and do not correct for emissions embedded in trade (i.e. consumption-based). Emissions from international travel are not included.

Our World  
in Data



Figures for the 28 countries in the European Union have been grouped as the 'EU-28' since international targets and negotiations are typically set as a collaborative target between EU countries.

Values may not sum to 100% due to rounding.

Data source: Calculated by Our World in Data based on data from the Global Carbon Project (GCP) and Carbon Dioxide Analysis Center (CDIAC).

This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

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6. Importantly, Namibia is a net carbon sink – the country absorbs more GHGs than it emits. It emits only very small quantities of GHGs. In 2019 (prior to Covid) Namibia ranked as the 137<sup>th</sup> largest emitter accounting for just 0.01% of global emissions<sup>3</sup>. Namibia's negligible contribution to GHG emissions and the fact that the country as a whole absorbs more carbon than it emits suggests devoting scarce resources to GHG mitigation is not optimal from a global perspective as mitigation resources are likely to make a far greater impact in other countries in terms of emissions abated per dollar spent. The focus should rather be on maintaining or enhancing its characteristic of being a net carbon sink.

3 See <https://ourworldindata.org/greenhouse-gas-emissions>



## Tackling Climate Change

- ## CONCLUSION

The world needs to tackle climate change by ensuring an appropriate price is placed on carbon emissions and by using market mechanisms to reduce global emissions in the most cost-effective ways possible.

## What Action is the World Taking?

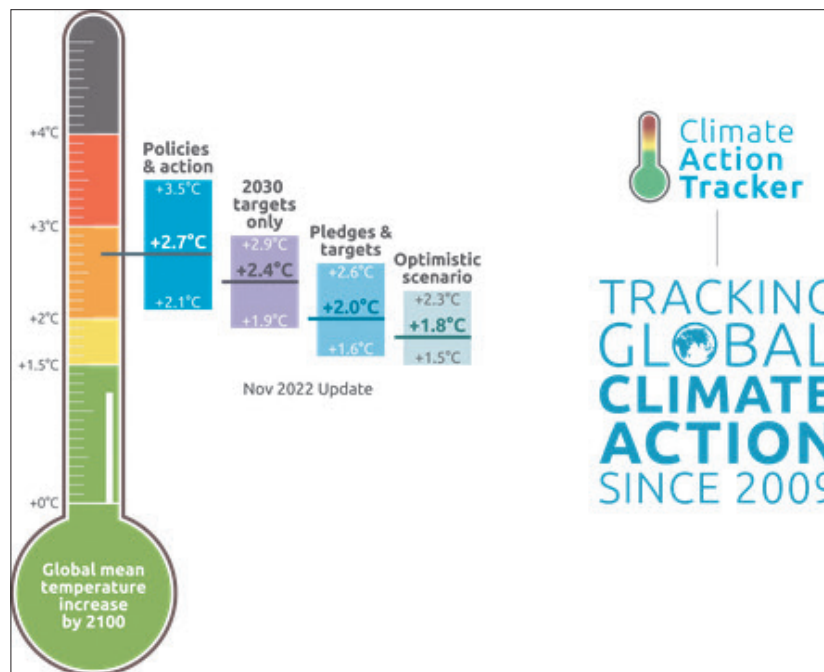
- The world has been gradually waking up to the dangers posed by climate change since the creation of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992<sup>4</sup>. Following the twenty-sixth Conference of the Parties (COP26) at the end of 2021, countries have agreed on the need to halve GHG emissions by 2030 and achieve Net Zero carbon emissions by 2050 if the rise in global average temperatures is to be limited to 1.5 degrees or “well below 2 degrees”. Following COP26, 136 countries have adopted a Net Zero target. These cover 88% of GHG emissions, 90% of GDP and 85% of the world’s population. However, many of these commitments have yet to be translated into concrete strategies and plans. Given the high stakes involved, Namibia cannot rely on sufficiently serious and timely global action being taken on climate change, especially as Namibia itself is committed to exploiting newly-discovered fossil fuel resources.

### CONCLUSION

**Namibia cannot rely on other countries to take the action required to reach Net Zero by 2050 and ensure the worst climate scenarios do not play out. Namibia needs to prepare for the coming climate changes whilst encouraging accelerated global action and seek ways to benefit from its function as a net carbon sink.**

## Climate Change Scenarios

- Global temperatures are currently 1.2 degrees above pre-industrial levels (IPCC). Based on current policies and action already taken, global temperatures are set to rise by a total of 2.7 degrees. If all countries fully implement the targets they have set for 2030, global temperatures will rise by 2.4 degrees. If countries go beyond that and reach their current stated long-term targets, global temperatures will rise by 2.0 degrees. If countries fully implement all announced targets including Net Zero targets, long-term solutions and Nationally Determined Contributions, the rise in global temperatures may be limited to 1.8 degrees, still 0.6 degrees higher than where the world is in 2021<sup>5</sup>.



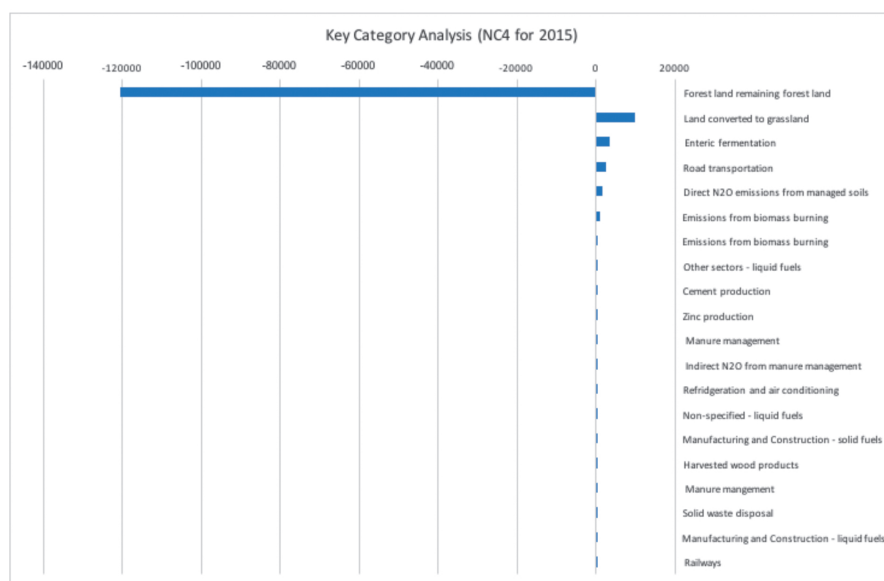
### CONCLUSION

**Even in the most optimistic scenario where countries meet their stated targets, global temperatures will continue to rise to between 1.5 and 2.0 degrees so the impact of climate change will continue to accelerate.**

<sup>4</sup> See <https://unfccc.int/>

<sup>5</sup> See <https://climateactiontracker.org/>

## Key Category Analysis (in Gg CO<sub>2</sub>-eq from page 37 of NC4 for 2015)



## Namibia's Contribution to Climate Change

- Namibia has been a full participant in the work of the UNFCCC since the beginning and is fully compliant in terms of agreements and submissions. It is clear from the above that Namibia is only a very small contributor to absolute global GHG emissions and is a net carbon sink. International convention requires countries to report estimates on activities that make up to 95% of their emissions. According to its Fourth National Communication to the UNFCCC<sup>6</sup>, Namibia has five main sources of emissions: land converted to grassland, enteric fermentation (methane from cattle and sheep), road transportation (vehicles), direct nitrous oxide emissions from managed soils (from farming) and emissions from biomass burning (wood burning). However, all these emissions are vastly outweighed by the carbon capture of Namibia's forests rendering Namibia a net carbon sink absorbing more carbon than it generates. Namibia's land quality and land use is key to this important characteristic.

5

**Thanks largely to its forests and bush-encroached land, Namibia remains a net carbon sink. Namibia should work hard to attract resources to help it maintain or enhance this characteristic as Namibia's greatest contribution to global GHG mitigation.**

## Uncertainty about the Future

- Although scientists are fairly certain about the broad changes brought about by climate change, can build scenarios about what measures could help to slow climate change and to what extent, and are increasingly confident of the vulnerabilities of agriculture and fishing, it is not possible to accurately predict that an increase in global average temperatures of x degrees will lead to a reduction in Namibia's GDP by y percent.

## CONCLUSION

**It is not possible to say with any precision what impact a 1.5 degree or a 2.0 degree rise in global temperatures will have on the Namibian economy. However, it could be very severe.**



## Impact on the Namibian Economy

14. An examination of the sectors that make up Namibia's economy suggests that at least around 15.5% of GDP is vulnerable to climate change. These sectors including livestock and crop farming, forestry, fishing and fish processing, meat processing, grain milling, other food processing, and hotels and restaurants (and other tourism-related activities) but other water-intensive sectors such as mining are also highly likely to be affected. Whilst in principle a scenario could be imagined whereby these sectors disappear almost entirely, in reality these sectors would adapt through, for example, different breeds of livestock and crop strains. However, it is not clear what the surviving sectors would look like nor what they would contribute to GDP only that they are highly likely to be smaller. The damage inflicted on agriculture and other climate vulnerable sectors would hit poorer rural communities hardest because they are most reliant on agriculture, forestry and tourism for their survival. The damage inflicted on fisheries would hit urban communities in Walvis Bay and Lüderitz hardest. Whilst Namibia is a carbon sink and makes only a negligible contribution to global GHG emissions, its economy and population are extremely vulnerable to climate change.

### CONCLUSION

**At a conservative estimate, economic sectors which contribute at least 15.5% to Namibia's GDP are highly vulnerable to climate change. It is the poorest communities reliant on agriculture who are most at risk. Climate adaptation rather than mitigation needs to take priority to protect such communities.**

## Vulnerable Groups and Population Movements

15. Linked to the impact of climate change on the economy is the movement of people. Thirty years after Independence, Namibia is going through a special phase that has seen its population almost double while its urban population is set to exceed its rural population. The absolute number of people in the rural population has remained approximately constant during the past two decades. Whilst there is a need for urban areas to adapt to climate change, climate change will likely have an unambiguously negative impact on rural livelihoods. Furthermore, climate change will challenge human health as a result of heat-related and water-related health problems as well as changes in disease prevalence. The distribution and vulnerability of populations will have important implications for public service delivery. This will be complicated by vulnerable populations in communities that border Namibia such as in Southern Angola. Namibia is also a net importer of staple foods such as grains and will have to think strategically about how it sources foodstuffs over the coming decades. Namibia's vulnerability suggests policy should focus on adaptation rather than mitigation.

### CONCLUSION

**Climate change will accelerate the movement of people from rural to urban areas which is already underway. Namibia has to manage this change by balancing assistance for the poorest rural communities with support and opportunities for the burgeoning urban communities.**

## Consequences for the Public Sector

16. Climate change will have significant implications for Namibia's public sector. It is not known how much tax the agriculture, fishing and tourism sectors pay but in general Namibian government revenues appear relatively diversified and robust as far as climate change is concerned. Fuel taxes are low compared to many other countries and there is no carbon tax. A number of modest environmental levies have been introduced but primarily as revenue-raising measures (although a portion goes to the Environmental Investment Fund). Patterns of public spending have remained broadly stable over the years with education, health and cash grants being the main areas of spending along with defence, roads and finance. However, with revenues stagnant, the ability to spend is highly constrained once the costs of the public service, public enterprises and debt servicing have been met. Public investment has suffered as a result.

### CONCLUSION

**Namibia's tax base appears relatively robust as far as climate change is concerned but climate change will have consequences for public spending and the delivery of public services.**



## Consequences for Public Enterprises

17. Government owns a large number of public enterprises including important commercial public enterprises. These are due to fall under a new Department for Public Enterprises located within the Ministry of Finance. Several of these are vulnerable to climate change corresponding to those active in the vulnerable sectors and include Agribank, Fishcor, Meatco, Namibia Wildlife Resorts and Namwater as well as NamPower which is highly reliant on the Ruacana hydroelectric power station for domestic electricity generation. For other public enterprises, climate change will require new investment, either to take advantage of "no regrets" changes in technology (for example solar PV) or to prepare for changes in technology (for example new aviation and maritime fuels will require new infrastructure at the Namibia Airports Company and NamPort) while most public enterprises will have to carry out programmes to "climate proof" infrastructure (for example the Roads Authority) to a greater or lesser extent.

### CONCLUSION

**Climate change will have important implications for public enterprises. To some it could be existential while for others it will mean greater investment in new technology plus climate-proofing infrastructure. NamPower and Namwater are especially affected but in different ways.**

## Namibia's Debt Constraint

18. However, after years of slow growth and a Covid pandemic, levels of public debt have risen to historic highs to around 70% of GDP. Most of this debt is normal commercial domestic and foreign debt but there is some (concessional) bilateral and multilateral debt. This limits Government's current ability to borrow more to spend on climate change or other areas. There is little sign of public sector reform deep enough to free up resources in the short to medium-term. A significant oil or gas discovery would change the picture and may raise Government's ability to borrow and thereby its budget constraint even before production commences. At this stage however, it is not clear how much adaptation programmes would cost and over what period of time they would need to be executed.
19. In theory, Government could issue Green Bonds to raise funding for climate change related spending programmes but at current levels of debt it is not clear who the buyers would be unless Government obliged domestic savers to buy them. Furthermore, in contrast to many mitigation measures, adaptation does not generate clear financial revenue streams and therefore lend itself to project funding. It is possible that foreign bilateral or multilateral lenders could provide funding on concessional terms. Other options include "debt for nature" or "debt for climate" swaps where debts are forgiven in exchange for commitments to spend on environmental programmes. This requires further investigation as it is something new and untested in Southern Africa and Namibia for its current bilateral and multilateral lenders.

### CONCLUSION

**Namibia is already highly indebted after years of low growth and heavy borrowing. At this stage Namibia should not attempt to increase net debt even for climate adaptation and mitigation. Instead it should look to consolidate its fiscal position over the coming years so that it is in a position to borrow later in the decade whilst at the same time take maximum advantage of international grants that are available for climate adaptation.**



## Changes in the Global Economy

20. Meanwhile, climate change is stimulating changes in the global economy that will have far-reaching consequences for Namibia.

## Passenger Vehicles

21. Given the significance of transport in GHG emissions, transport technology is changing fast especially in the area of personal transport. In the quest for zero emissions, battery electric vehicles (BEVs) are winning the battle with hydrogen fuel cells to replace internal combustion engine (ICE) powered vehicles in the main markets of China, Europe and North America. Many countries have announced their intention to ban ICE vehicles in the coming decades and in parallel many vehicle producers have announced dates when they will cease production of ICEs altogether. Range anxiety, the availability of charging stations, the ability to maintain and repair vehicles and Namibia's harsh off-road conditions make the introduction of BEVs particularly challenging. It is not clear how this will play out in Namibia although Namibia has included a target for 10,000 EVs by 2030 in its Nationally Determined Contribution (NDC)<sup>7</sup>.

### CONCLUSION

**Namibian policymakers should start thinking about how policy can support the transition to BEV passenger vehicles.**

## Heavy Transport

22. In heavy transport things are less clear cut but green hydrogen (GH2) is being put forward as a possible way to decarbonise heavy goods vehicles, trains, mining trucks and other large forms of transport. It could be that companies will take the lead (for example in the mining sector Anglo American is looking at low carbon operations in South Africa). Internationally-listed mining companies may be incentivised by shareholder and public opinion in their countries of listing without Namibia having to take action.

### CONCLUSION

**Namibian policymakers should start examining how policy can support the transition to the decarbonisation of heavy vehicles and machinery which will take place globally over the coming years.**

## Air and Maritime Transport

23. Planes and ships are proving harder to decarbonise than passenger vehicles but developments in low-carbon fuels, more efficient engines, green hydrogen and electric power suggest solutions will be found. Again, Namibia may simply go along with international trends but will have to upgrade infrastructure such as fuel infrastructure at Namibian ports and airports.

### CONCLUSION

**Namibia should start thinking about how policy and investment can support the transition to low-carbon fuels in the maritime and aviation sectors which will take place globally over the coming years.**

<sup>7</sup> See Namibia's Updated Nationally Determined Contribution 2021



## Power Generation

24. In the field of power generation, Namibia is already experiencing the impact of the reductions in the cost of renewables, especially solar PV, and is investigating a “mega solar” project with Botswana. Many renewables are already cheaper than fossil fuels but base load and storage remain a challenge. Again, new technology in the shape of concentrated solar power, tidal, geothermal, modular nuclear and nuclear fusion, and floating offshore wind may change the picture drastically in the coming years making it harder to decide which technology to opt for now. Of immediate interest is what is happening in neighbouring South Africa with its “Just Energy Transition” and the commitment by major economies at COP26 to provide US\$8.5 billion to wean South Africa off coal by 2050. As already stated, South Africa is currently the world's fourteenth largest emitter of GHGs.

### CONCLUSION

**The falling cost of renewables means that Namibia is already pursuing “no regrets” investments in the field of power generation and this should be accelerated.**

## Green Hydrogen

25. Namibia has already announced plans to grasp the new opportunities presented by renewable energy in the production of green hydrogen and green ammonia. This has the potential to form an important new industry in Namibia. However, Namibia is located far from industrial end users and it is not clear what the economics of transporting liquid hydrogen will be and whether there will ever be a global market like the one that exists for Liquefied Petroleum Gas (LPG). Furthermore, many countries are looking at green hydrogen options and it looks like the green hydrogen industry will be very competitive free of the “economic rents” associated with oil and gas. . Namibia should ensure this new industry is developed responsibly in an environmentally sustainable way to get things right rather than rushing developments at all costs.

### CONCLUSION

**Namibian policymakers should continue to explore options for green hydrogen and green ammonia taking care to establish a global environmentally sustainable brand but should let trusted private investors bear the risks associated with this exciting new technology.**

9

## Oil and Gas

26. Namibia has just discovered new hydrocarbon resources. Although there is no doubt that burning fossil fuels is the major cause of climate change, there will be a transition away from them and therefore continued demand for supply until 2050 and possibly beyond. Significantly, apart from the altruistic reason of being a good global citizen, there are no incentives for countries like Namibia to forsake the exploitation of oil and gas resources. It will become harder to finance and exploit fossil fuel resources, especially for the larger oil and gas majors listed on global stock exchanges, some of whom have already declared their own net zero targets. If Namibia succeeds in going ahead and exploit its oil resource, this will be a game changer as far as its ability to borrow and spend and there should be no lack of domestic resources for climate adaptation. In May 2021 the IEA made clear that no investment in new fossil fuel supply projects if the world is to reach Net Zero by 2050<sup>8</sup>.

### CONCLUSION

**Namibia has made it clear that it intends to exploit oil and gas resources if they prove commercially viable. This should be done in as climate-friendly way as possible and the resources so derived should help provide the resources for climate adaptation and the hardest hit communities.**

8 See “Net Zero by 2050 A Roadmap for the Global Energy Sector”, IEA, May 2021



## Carbon Capture Utilisation and Storage

27. One “get out of goal card” for the fossil fuel industry is Carbon Capture Utilisation and Storage (CCUS) which, in theory, would allow the world to continue using fossil fuels provided the carbon produced was prevented from entering the earth’s atmosphere. This is controversial because many see this as little more than a way for the fossil fuel companies to carry on emitting GHGs. It is also untested at scale. Nonetheless if the technology can be made to work it may have a role in sectors that are hard to abate.

### CONCLUSION

**CCUS has little direct relevance for Namibia but may play a role in the extent to which fossil fuels can still be produced and consumed during the energy transition.**

## Steel and Cement

28. Steel and cement are two activities that produce huge quantities of GHGs each accounting for about 8% of global emissions but at the same time being very hard to decarbonise. Nonetheless, the first batch of green steel has been produced using renewable energy and techniques are being developed to inject recycled carbon dioxide back into cement. Changes in cement manufacturing could have important implications for Namibia’s cement industry.

### CONCLUSION

**Innovation in the field of green cement may have important consequences for Namibia’s cement industry whilst green hydrogen production may mean Namibia can participate in the emerging green iron production.**

## Border Tax Adjustments

29. Increasing numbers of countries and regions in the world are establishing emissions trading schemes (ETs) and putting a price on carbon emissions. However, countries that do this worry it may put them at a disadvantage to producers who do not pay for the carbon they emit. To address this difference, border tax adjustments (BTAs) are being considered to level the playing field. The EU is probably furthest along this path and, given its importance as a destination for Namibian exports, BTAs may have consequences for Namibia. China, which is another major market for Namibian exports, is not far behind.

### CONCLUSION

**Namibia’s exports are concentrated in products which could be affected by the introduction of border tax adjustments. Policy should look ahead to ensure Namibian exports remain competitive in important global markets like the EU and China.**

## ESG

30. Companies in many countries are embracing Environmental, Social and Governance (ESG) principles to demonstrate the seriousness with which they are addressing climate change and other challenges. This is a global movement and a voluntary one but there are no common standards and no enforcement mechanisms. Nonetheless, given its ties to the global economy, ESG is likely to have implications for Namibia, especially in sectors where global companies are operating such as mining and finance. In a similar way, the Glasgow Financial Alliance for Net Zero (GFANZ) brings together 450 financial companies across 45 countries which are responsible for over US\$130 trillion of assets<sup>9</sup>. Members will nudge themselves (and each other) towards more responsible investing supportive of climate goals.

### CONCLUSION

**Namibia must remain open to foreign capital, particularly to benefit from important changes in technological advances that will take place over the coming years. This means investments will increasingly have to take account of ESG.**

9 <https://www.gfanzero.com/>

## Climate Compensation

31. Climate change can be portrayed as damage inflicted by richer more industrialised countries on poorer less industrialised ones. For some countries such as island states in the Pacific or Caribbean climate change is clearly an existential threat. Given the slow pace of change in reducing GHG emissions, countries are starting to investigate the possibility of seeking legal compensation for the damage they are suffering. There is also interest in taking legal action against oil and gas companies for acting in a way that undermines emissions targets. The case for climate compensation may be weakened for countries that are also fossil fuel producers.

### CONCLUSION

**Namibia should monitor developments in climate compensation in case it presents opportunities for more resources being made available for climate adaptation over the coming years.**

## Demand for Minerals

32. Finally, new technologies in vehicles and energy generation are giving rise to rising demand for larger quantities of key minerals such as lithium, nickel, cadmium and rare earth minerals while established nuclear technology is likely to require uranium, a commodity already produced by Namibia. Furthermore, companies such as Tesla Motors are striking innovative deals with mining companies to secure access to important minerals. Namibia should ensure it is an internationally competitive mining jurisdiction whilst at the same time ensuring minerals are exploited in an environmentally responsible way to boost exploration and thereby the chances of taking advantage of enhanced mineral demand.

### CONCLUSION

**Namibia should maintain an attractive mining investment climate with clear and robust environmental safeguards to maximise its chances of benefiting from demand for new minerals.**

## International Resources to Tackle Climate Change

33. As a compliant member of the UNFCCC, Namibia is well-positioned to take advantage of resources offered by the Global Environment Facility, Green Climate Fund, the Adaptation Fund as well as a large number of bilateral country donors (such as Germany's GIZ). COP27 has agreed to establish a new loss and damage funding vehicle. These resources can supplement the domestic resources Namibia can bring to bear.
34. The investment required to address climate change is huge and the world is still only in the foothills of what is required to meet Net Zero by 2050. International trends show that much of the investment required for mitigation is coming and will come overwhelmingly from private sources complemented by Development Finance Institutions (DFIs). This is natural since mitigation projects lend themselves to this kind of project finance generating as they offer clear revenue streams that can be used to repay lenders. Adaptation, on the other hand, is dominated much more by public sector lenders or grants. At this stage, multilateral climate funds are providing relatively modest amounts of funding.

### CONCLUSION

**Namibia should continue to take advantage of international grants and possibly highly concessional loans made available for climate adaptation.**



## Namibia's Nationally Determined Contribution (NDC)

35. Namibia submitted an Intended Nationally Determined Contribution (INDC) in 2015 involving US\$22.6 billion and an NDC in 2021 involving US\$5.3 billion. In the latest NDC the balance between mitigation (US\$3.6 billion) and adaptation (US\$1.7 billion) does not reflect the relative importance of adaptation versus mitigation to Namibia.
36. In terms of what actions Namibia has undertaken, there has been a wide range of donor-funded and EIF projects but it is hard to assess how effective these have been. As mentioned above, Namibia has introduced some modest environmental levies but it is suspected this was primarily for revenue-raising purposes. The most eye-catching concrete development has been the new Independent Power Producers (IPPs) and new generating capacity under the Renewable Energy Feed-In Tariff (REFIT) programme which have sprung up in the electricity generation sector. These are investments financed primarily by private funders (including through Bank Windhoek's Green Bond) although the extent to which they are "no regrets" projects is open to question as they have involved significant tariff escalation. Namibia's reliance on coal-powered electricity imports from South Africa and Zimbabwe is not reflected in its territorial GHG emissions, but moving to these renewable energy IPPs this could be seen as a move which helps the region as a whole become less dependent on coal.

### CONCLUSION

The main mitigation measures in Namibia so far have been financed by private investors. Namibia should place emphasis on climate adaptation measures and carefully monitor the impacts of all climate adaptation measures so that it is in a good position to know what works and what doesn't. Providing compelling evidence of success will maximise the chances of tapping further resources.

## South Africa

37. Neighbouring South Africa has been active on the issue of climate change. A carbon tax was introduced in June 2019 and the country reached an US\$8.5 billion "Just Energy Transition" deal at COP26 to help it move away from reliance on coal and is also developing a US\$500 million green investment plan. Sasol is leading a green hydrogen initiative at Port Nolloth. South Africa has stated its ambition to achieve Net Zero by 2050 (although its Climate Tracker Rating is currently "Insufficient").

### CONCLUSION

Namibia should monitor developments in neighbouring South Africa, on GHG mitigation (the Just Energy Transition), carbon taxes and green hydrogen.

### Implications for Ministry of Finance

38. Namibia's climate change institutional infrastructure has already been mentioned but many climate policies and actions will have significant fiscal implications and fiscal policy remains the primary responsibility of the Ministry of Finance. On the issue of climate change, there are two key questions for the Ministry of Finance:

**Q1: Does Namibia currently pursue any harmful tax policies?**

No. Tax policy does not unduly encourage practices that are harmful for the climate and there are no specific fossil fuel tax expenditures.

**Q2: Does Namibia currently pursue any harmful expenditure policies?**

No. Government does not subsidise fossil fuel usage and other damaging activities to an undue extent.

39. Given the above considerations, there is a broad range of policies and measures the Ministry of Finance could take to ensure Namibia is best-positioned to address the climate challenges of the coming decades.

### Policies and Measures

40. The table below summarises the policies and measures necessary to address climate change: successfully implement climate adaptation and take advantage of opportunities that arise. At this stage, no time-scale has been put on when action needs to be taken when but thinking by policymakers now will undoubtedly pay dividends later.



## Summary of Policies and Measures

<b>Capacity</b>	
1	Enhance the capacity of the Ministry of Finance and other key agencies such as the National Planning Commission to engage on all climate issues, including climate finance, by creating a cadre of climate economists across government. This cross-governmental cadre would help to better integrate climate issues into policies and spending programmes across Government.
2	Develop a programme of strategic climate research for Namibia to further investigate the issues raised in this summary.
3	Develop capacity in range of climate technical skills at Namibia's educational institutions including UNAM and NUST.
4	Maintain a watch on key technologies and assess whether and how they can be employed in Namibia.
5	Maintain a watch on international climate compensation cases and associated legal rulings.
6	Maintain a watch on international environmental regulations and assess how they might impact on Namibia.
<b>Public Revenue, Expenditure and Debt</b>	
7	Ensure sufficient public financial resources are made available to maintain and enhance the ability of Namibian land to act as carbon sink especially in forestry.
8	Consider a moratorium on commercial logging or Introduce a forestry tax on commercial loggers.
9	Ensure rural communities receive the financial and technical support they need for adaptation via a National Adaptation Plan (NAP). This may involve deliberately providing subsidies through agricultural purchases.
10	Prepare for increased rural-to-urban migration by providing more urban housing for low income households (see Development Workshop Namibia).
11	Use international grants wherever possible to support mitigation and adaptation efforts taking local co-financing into account.
12	Reduce levels of public debt to sustainable levels so that Namibia is in a position to borrow to address the coming challenges.
13	Consider selling Green Bonds for identifiable climate and environmental projects and programmes with clear returns.
14	Consider selling project finance bonds for projects with clear identifiable revenue streams.
15	Subject selected public sector projects to full economic cost-benefit analysis including climate costs and benefits.
16	Climate-proof and improve energy and water efficiency of public buildings and facilities including government offices, schools, hospital and clinics.
<b>Public Enterprises</b>	
17	Climate-proof critical infrastructure including roads, rail, ports, airports, ICT, electricity and water infrastructure (public enterprises).
18	Review the operations of vulnerable public enterprises including the port and town of Walvis Bay and Ruacana hydropower station.
19	Place special emphasis on improving water use and efficiency and ensure maintenance of water infrastructure.



Business and Investment Environment	
20	Ensure Namibia improves as an attractive investment destination for FDI to boost growth and jobs.
21	Prepare for increased rural-to-urban migration by creating an enabling environment for urban investment and jobs.
22	Promote private investment in new high-risk ventures and ensure private investors bear the risk in developing risky new industries like green hydrogen and green ammonia.
23	Ensuring Namibia remains attractive to foreign mining investors.
24	Decide whether and how to support the tourism sector to promote climate friendly tourism.
25	Subject large fossil fuel-based power generation projects to full cost-benefit analysis.
26	If oil and gas resources are exploited, ensure abatement or CCS is incorporated into costs.
27	Accelerate the move into renewable energy, especially using solar PV and wind.
28	Prepare the Southern African Power Pool (SAPP) for a significant push into renewables including large projects such as Mega Solar.
29	Consider whether subsidies or taxes are necessary to transition into new technologies such as Battery Electric Vehicles or Hydrogen Fuel Cells.
Regulation	
30	Change building regulations to take account of climate change, energy and water efficiency including the use of solar water heaters.
31	Examine whether the Environmental Impact Assessment (EIA) certification process needs to take climate impact into account.
32	Examine whether industry-specific regulations need to be changed (for example in mining, manufacturing or financial services).
33	Improve the regulation of air-conditioners and the disposal of refrigerators.
34	Decide whether improved mining practices should be encouraged through the licencing system and EIA Clearance Certificates.
35	Develop joint plans with neighbouring countries to deal with climate-related movements in population.

41. There are two broad sets of issues the Ministry of Finance should take a lead in helping Government address.
42. First global changes in technology and environmental regulations means foreign technology and skills will play a critical role in successfully transitioning to a more sustainable economy. Namibia's foreign investment framework needs to be clarified and improved.
43. Second, further policy attention should be directed at the question of how to best help vulnerable rural and urban communities. Finding ways of farming that are compatible with climate goals and at the same time yield sustainable rural incomes will be critical ("climate smart agriculture") but more may be needed. The introduction of something like a Basic Income Grant has been touted by some but this is extremely ambitious, cannot be implemented in stages and is currently unaffordable. Practical ways need to be found to channel money to rural communities to help them survive and adapt. Perhaps this could be done through financial support for particular agricultural products which would be explicitly subsidised with the intention of allowing people to maintain a rural livelihood. This is a complex issue which would need careful consideration.

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## About the author

Robin Sherbourne is a freelance economist, a former director of the IPPR, and the author of the IPPR's Guide to the Namibian Economy publication. He has analysed Namibia's national budgets since independence.

## About Democracy Report

Democracy Report is a project of the IPPR which analyses and disseminates information relating to the legislative agenda of Namibia's Parliament. The project aims to promote public participation in debates concerning the work of Parliament by publishing regular analyses of legislation and other issues before the National Assembly and the National Council. Democracy Report is funded by the Embassy of Finland. The contents of this briefing paper do not necessarily reflect the views of the Embassy of Finland.

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Institute for Public Policy Research (IPPR)  
House of Democracy  
70-72 Frans Indongo Street  
PO Box 6566  
Windhoek  
Namibia  
[info@ippr.org.na](mailto:info@ippr.org.na)  
[www.ippr.org.na](http://www.ippr.org.na)  
Tel: +264 61 240514



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Directors: M M C Koep (Chairperson), D Motinga, A. Du Pisani, J Ellis, G Hopwood (ex-officio)