Comments on the National Climate Change Response White Paper
Earthlife Africa Jhb
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Endorsed:

- Project 90x2030
- Nelson Mandela Bay Transition Network
- South Durban Environmental Community Alliance
- Women and Energy Climate Change Forum
- Youth Climate Change Forum
- Women's Leadership and Training Programme
- The Grail South Africa
- 350.org
- groundWork
- Ecopeace
- The Justice and Peace Department of the Southern African Catholic Bishops Conference

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1. Introduction

This National Climate Change Response White Paper [hereafter “White Paper”] is much improved over the Green Paper of earlier this year. Notably, the exclusion of nuclear power from the document, the addition of numerical values for mitigation targets, a carbon budget approach, and a commitment to keep, “well below a maximum of 2ºC above pre-industrial levels”.

While these are significant improvements, the main areas for further improvement lie in these four areas. In particular, the numerical values of the mitigation targets are not in line (at least in a large part) with either national or international research on what is required to avoid catastrophic climate change and to keep well below 2ºC. In effect, while giving a carbon budget for entities within the Republic, the White Paper ignores the fact that South Africa as a whole needs to take on a constrained budget itself in line with the latest scientific wisdom.

However, before getting into the issues, Parliament's incredibly short notice of only eight days

is entirely inadequate and hardly allows citizens of this country sufficient time to engage meaningfully with the White Paper. Nor, we imagine, does it give Parliament time to debate and consider the White Paper to the best of its ability.

Furthermore, Parliament, under the Bill of Rights' Section 24 of the Constitution, is specifically mandated to ensure that the citizens of this country have a clean, safe and healthy environment. This should be the primary rule under which Parliament engages with the White Paper. Accordingly, Parliament cannot but overrule, reject, adapt, amend, or otherwise alter the White Paper if the Constitutional rights of the citizens of South Africa are likely to be infringed upon by the White Paper. A country that is blighted by the consequences of unmitigated global warming will not be a clean, safe or healthy environment for South Africans to live in; such a situation would be a complete and utter violation of the Constitution and an abject failure of all organs of the state to rule in accordance with its social contract with the body politic.

Therefore, Parliament must not only ensure that this White Paper achieves South Africa's emissions reductions in line with the best scientific wisdom globally rather than political expediency, but must also ensure that the executive is given the appropriate direction through the White Paper to adopt a negotiating position at the UNFCCC to reduce global emissions substantively according to a global carbon budget.

Recommendation #1: The White Paper should clearly set out both the emissions pathway and the carbon budget for a global temperature rise of 1.5 degrees Celsius and endorse such as the target for global emissions. This will mean, without a doubt, a global peak in temperature in 2011 and/or 2012. It may be possible to have a global peak post-2015, but this will require very steep declines afterwards. A global peak post-2020 is highly unlikely to be successful.

Recommendation #2: As a point of reference, the White Paper should also clearly set out the emissions pathway and the carbon budget for a rise of up to 2 degrees Celsius.

Recommendation #3: Parliament should abandon the "peak, plateau and decline trajectory" in the White Paper as being neither in line with keeping emissions below 2 degrees nor as a just expression of fair share. This should be replaced with a peak and decline trajectory.

Recommendation #4: Parliament should use the two degrees carbon budget of between 5 Gt and 16 Gt of $CO_{2\text{-}eq}$ from 2010 to 2050. It should recognise that we have already peaked, and need to reduce to emissions immediately in a linear decline to 70 Mt of $CO_{2\text{-}eq}$ in 2050. This should be used as the reference case. This should also be subject to additional scientific, peer-review.

Recommendation #5: Parliament should instruct DEA to conduct a scientific and peer-reviewed study of a carbon-budget based on just fair share and limiting an increase to 1.5 degrees within one year of the adoption of this policy. This should then be the emissions trajectory of the country.

Recommendation #6: Parliament should remove the conditionality (on international finance) of South Africa's emissions reductions, and, rather, commit the country to unconditional emissions reductions based on scientific evidence.

Recommendation #7: In defining internal carbon budgets for entities within South Africa, Parliament should put in place an enforcement strategy for non-compliance.

Recommendation #8: While a carbon tax is necessary, Parliament should not allow the electricity

generation and liquid fuels sector (in particular Eskom and Sasol) to pass through the carbon tax onto consumers.

Recommendation #9: Revenue from the carbon tax should be ring-fenced for mitigation (renewable energy, energy efficiency, demand side management), adaptation and protection of the poor, and Parliament should instruct Treasury in this regard.

Recommendation #10: Neither carbon capture and storage nor carbon trading has been shown to be effective. In the case of CCS, it is entirely theoretical. Parliament should not endorse either of these two strategies.

Recommendation #11: Parliament should not allow state funds (including from the carbon tax) to be allocated to new nuclear power plants.

2. Overall Comments

2.1 Mitigation Targets

The White Paper quite rightly states (pg. 9) that the potential impacts of unmitigated climate change are likely to be catastrophic, including, droughts, extreme weather events, destruction of infrastructure, mass extinctions, the reversal of development gains and further impoverishment of the populace. There will be no eradication of poverty and economic freedom for all under this scenario, just increased hardship and death. Therefore, it is critical for global & national emissions to decline in order to avoid this future.

The White Paper is silent on what those global emissions reductions should be. In other words, the White Paper does not set out what is required by science globally and then does not show how South Africa's emissions reductions work in that context. As the White Paper repeatedly mentions, emissions reductions would have to be global. Subsequent to the IPCC 4th Assessment Report, which called for a global limit of no more than 2ºC, significant peer-reviewed work has been produced on how to achieve this in a global context using a carbon budget approach, precisely the approach endorsed by DEA for domestic entities. This research states that the world can only emit 750 Gt of CO_2 from now until 2050, whereafter the world would move to a carbon neutral system. This would give us a 75% chance of not exceeding 2ºC. To give an idea of perspective, known proven and recoverable reserves of oil, gas, and coal, if burnt would produce 2800 Gt of CO_2. If we are to avoid going over 2ºC, we will have to reduce fossil fuel usage drastically.[1]

We have a scientifically established global carbon budget for holding temperature rise to 2ºC of 750 Gt of CO_2. Based on various mechanism of allocation, South Africa's emissions reductions likely need to be significantly higher than the DEA's current trajectory range.

Furthermore, successful mitigation will require global emissions to peak somewhere between 2011 and 2015 and reduce year-on-year. The later we leave reductions, the steeper the cuts will be. The following graph from the WGBU shows this and the level of emissions reductions globally.[2]

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[1] Malte Meinshausen, Nicolai Meinshausen, William Hare1, Sarah C. B. Raper, Katja Frieler, Reto Knutti, David J. Frame, & Myles R. Allen. "Greenhouse-gas emission targets for limiting global warming to 2C", Nature, Vol 458 | 30 April 2009 | doi:10.1038/nature08017

[2] German Advisory Council on Global Change. "Solving the Climate Change Dilemna: The Carbon Budget Approach" (WGBU, 2009), pg. 16

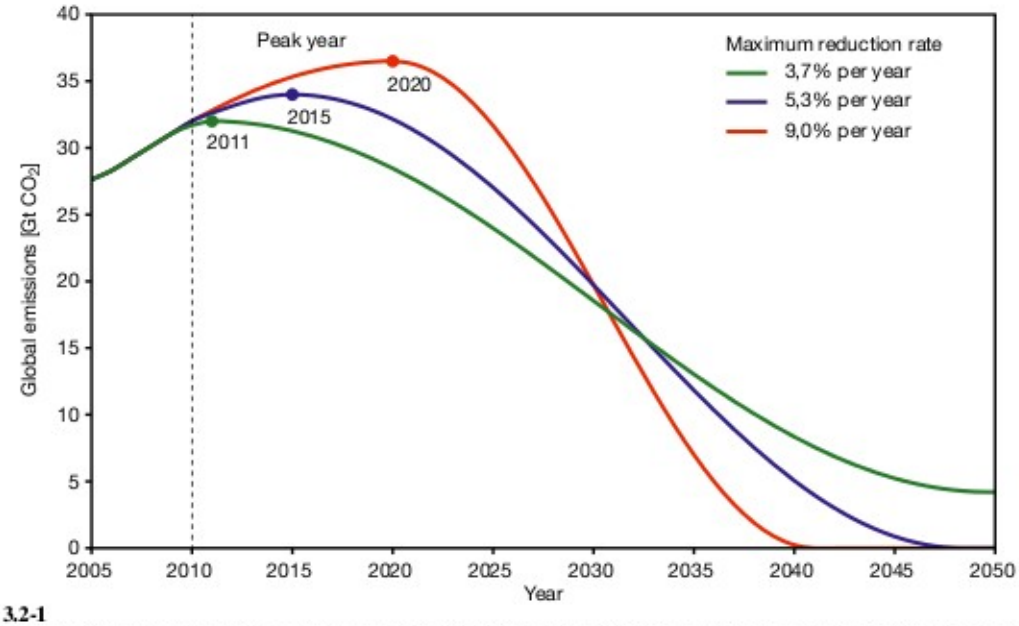


Figure 3.2-1
Examples of global emission pathways for the period 2010–2050 with global CO_2 emissions capped at 750 Gt during this period.

It will be simply impossible to keep temperature rise below two degrees if emissions peak later than 2020, and the sooner we peak the easier it will be. Delays in peaking increase the probability of higher temperature rises and subsequent catastrophic effects, as illustrated in this table from the IPCC 4th Assessment Report (which is specifically endorsed by the White Paper),in which a global peak can come no later than 2015.[3]

Table 5.1. *Characteristics of post-TAR stabilisation scenarios and resulting long-term equilibrium global average temperature and the sea level rise component from thermal expansion only.[a] {WGI 10.7; WGIII Table TS.2, Table 3.10, Table SPM.5}*

Category	CO_2 concentration at stabilisation (2005 = 379 ppm)[b]	CO_2-equivalent concentration at stabilisation including GHGs and aerosols (2005 = 375 ppm)[b]	Peaking year for CO_2 emissions[a,c]	Change in global CO_2 emissions in 2050 (percent of 2000 emissions)[a,c]	Global average temperature increase above pre-industrial at equilibrium, using 'best estimate' climate sensitivity[d,e]	Global average sea level rise above pre-industrial at equilibrium from thermal expansion only[f]	Number of assessed scenarios
	ppm	ppm	year	percent	°C	metres	
I	350 – 400	445 – 490	2000 – 2015	-85 to -50	2.0 – 2.4	0.4 – 1.4	6
II	400 – 440	490 – 535	2000 – 2020	-60 to -30	2.4 – 2.8	0.5 – 1.7	18
III	440 – 485	535 – 590	2010 – 2030	-30 to +5	2.8 – 3.2	0.6 – 1.9	21
IV	485 – 570	590 – 710	2020 – 2060	+10 to +60	3.2 – 4.0	0.6 – 2.4	118
V	570 – 660	710 – 855	2050 – 2080	+25 to +85	4.0 – 4.9	0.8 – 2.9	9
VI	660 – 790	855 – 1130	2060 – 2090	+90 to +140	4.9 – 6.1	1.0 – 3.7	5

As the White Paper specifically endorses a target well below 2 degrees, it must, by that rationale, endorse a global peak around about now (at the very most no later than 2015). Civil society and labour in South Africa have officially endorsed the position of keeping global warming to 1.5 degrees, based upon credible research internationally; surpassing this limit runs a very real risk of triggering natural feed-back mechanisms that will cause runaway climate-change, a phenomena to be avoided at all costs. This position is aligned with that of over 100 countries, including the Africa Group and Small-Island states. The South African government should align itself to the 1.5 degrees target. This will mean that global emission will have to take on a much steeper decline and will

[3] IPCC. *4th Assessment Report: Synthesis Report* (2007), pg. 67

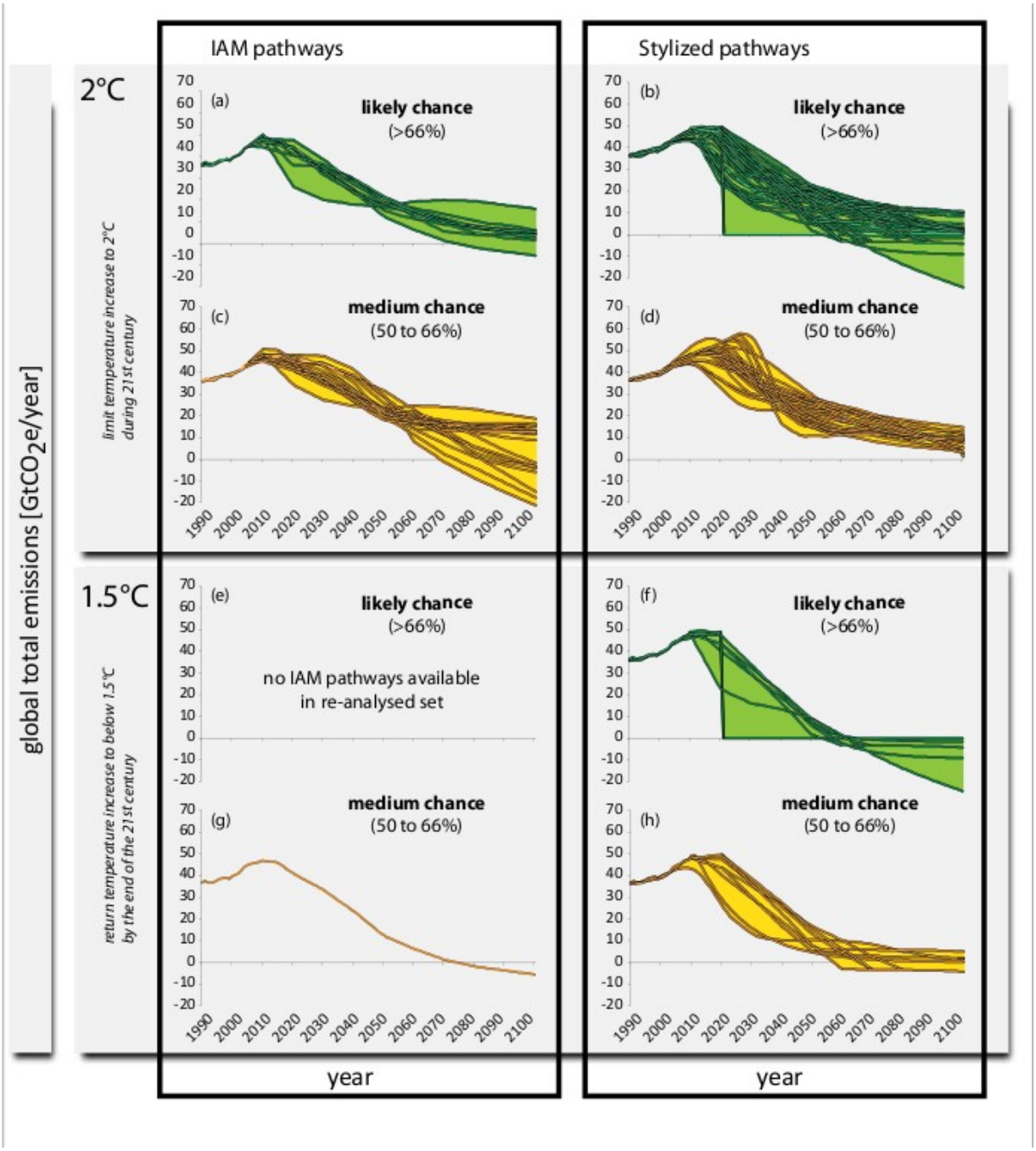
have to almost immediately decline. The United Nations Environment Programme has established emissions pathways for both 1.5 degrees and 2 degrees, illustrated in the graph on the next page:[4]

The 2°C target is, in the words of climate scientist James Hansen, a recipe for disaster.[5] The risk of runaway climate change – the point at which natural feedback becomes more significant than anthropogenic emissions – is already evident and becomes a near certainty at two degrees. Present commitments made under the Copenhagen Accord (including South Africa's and which is reflected in the White Paper targets) and sanctioned at Cancun will result in 4°C warming from emissions alone.[6] Climate feed-backs will push this to 6° or more. The commitments are dissociated from any global carbon budget and, being voluntary, will be ignored by countries which find them inconvenient. They are, like the supposedly binding Kyoto commitments, mere pieties. The credibility of the international process can only be restored through an entirely new approach, however difficult that may be politically.

[4] UNEP. *The Emissions Gap* (UNEP, 2010), pg. 38

[5] Hansen et al. "Target Atmospheric CO2: Where Should Humanity Aim?" Submitted at arXiv.org, April 7, 2008 and revised June 18, 2008 (ref: arXiv:0804.1126v2).

[6] Jogelj, R. & Meinshausen, M. (2010) "Copenhagen Accord pledges are paltry" in *Nature* vol 464, 22 April 2010.



Therefore, we make the first recommendations to Parliament for improvement of the White Paper.

Recommendation #1: The White Paper should clearly set out both the emissions pathway and the carbon budget for a global temperature rise of 1.5 degrees Celsius and endorse such as the target for global emissions. This will mean, without a doubt, a global peak in temperature in 2011 and/or 2012. It may be possible to have a global peak post-2015, but this will require very steep declines afterwards. A global peak post-2020 is highly unlikely to be successful.

Recommendation #2: As a point of reference, the White Paper should also clearly set out the emissions pathway and the carbon budget for a rise of up to 2 degrees Celsius.

Given the above, **where do the emissions targets presented in the White Paper fit? Simply put,**

they are completely inadequate to even reach the two degrees target and are not a reflection of fair share under common but differentiated responsibilities. Not only does South Africa have amongst the highest per capita emissions in the world, it also has a long history of historical emissions. A recent Ecofys and WWF report examined what the emissions pathways and budget should be for key countries including South Africa (abbreviated ZAF in the report). It give three options, based off variants of the simple fact that developed countries do more than developing countries. These variants are:

> Greenhouse Development Rights (GDRs): All countries need to reduce emissions below their business as usual path based on their responsibility (cumulative emissions) and capacity (GDP). Only emissions and GDP of the population above a development threshold account towards responsibility and capability.
>
> Contraction and Convergence (C&C): The targets for individual countries are set in such a way that per capita emission allowances converge from the countries' current levels to a level equal for all countries within a given period, here until 2050.
>
> Common but Differentiated Convergence (CDC): As above, targets are set so per capita emissions for all countries converge to an equal level over the period 2010 to 2050. For developed (Kyoto Protocol Annex I) countries' per capita emission allowances convergence starts immediately. For individual non-Annex I countries' per capita emissions convergence starts from the date when their per capita emissions reach a certain percentage threshold of the (gradually declining) global average.[7]

Emissions pathways were then calculated for individual countries based on these three conceptions of fair share. The following graphs on the next page illustrate these emissions pathways for a two degrees rise.[8] **This research shows clearly that even for a two degrees target and based off fair share principles, South Africa must peak its emissions in 2010 and then decline thereafter.**

The peak, plateau and decline trajectory envisaged by the White Paper simply has no validity if South Africa is committed to fair share and keeping temperature increases well below two degrees. Furthermore, if we take a carbon budget approach, as specifically endorsed by the White Paper, that would give South Africa a 2010-2050 total carbon budget (for keeping to 2 degrees, and excluding LUCF) of between 5 Gt and 16 Gt of $CO_{2\text{-eq}}$. This is illustrated in the table below:

	Cumulative emissions Gt CO2 eq.		CDC Gt CO2 eq. 2010-2050			GDRs Gt CO2 eq. 2010-2050			C&C 2050 convergence Gt CO2 eq. 2010-2050		
	1990-2000 Median	1990-2010 Median	Min	Median	Max	Min	Median	Max	Min	Median	Max
World total	319	692	888	905	913	889	906	914	888	907	915
Figure 02 EU27	55	109	79	81	83	-45	-30	0	91	94	94
Figure 04 GER	11	22	15	15	16	-11	-9	-2	17	17	18
Figure 05 UK	8	15	11	11	11	-10	-8	-3	12	12	12
Figure 07 JPN	14	28	19	20	20	-15	-12	-5	22	23	23
Poland	4	8	6	7	7	2	3	5	7	8	8
EVOC 05 RUS	25	46	33	35	36	22	27	34	37	38	39
Figure 01 USA	67	139	113	117	117	-41	-27	13	117	120	120
UNFCCC Annex I	187	375	284	294	298	-55	-7	66	314	319	323
EVOC 12 BRZ	8	18	21	22	22	18	21	25	25	26	26
EVOC 24 CHN	42	106	137	149	149	254	305	314	170	178	180
EVOC 25 IND	13	31	112	119	123	126	143	164	82	87	88
EVOC 13 MEX	5	11	13	14	14	12	12	15	16	16	16
EVOC 17 ZAF	4	8	9	9	9	12	15	16	9	10	10
Least Developed Countries	7	17	67	73	74	87	99	110	56	59	60
UNFCCC Non Annex I	129	311	587	605	607	813	895	955	562	579	582

[7] Niklas Höhne & Sara Moltmann. *Sharing the effort under a global carbon budget* (WWF, 2009), pg. 25
[8] Ibid pg. 38

This would give South Africa a fair share, carbon-budget emissions pathway of a peak in 2011, followed by a linear decline to 2050 where emissions would be about 70 Mt of CO2-eq, to keep to two degrees. A 1.5 degree temperature cap would require even greater emissions reductions.

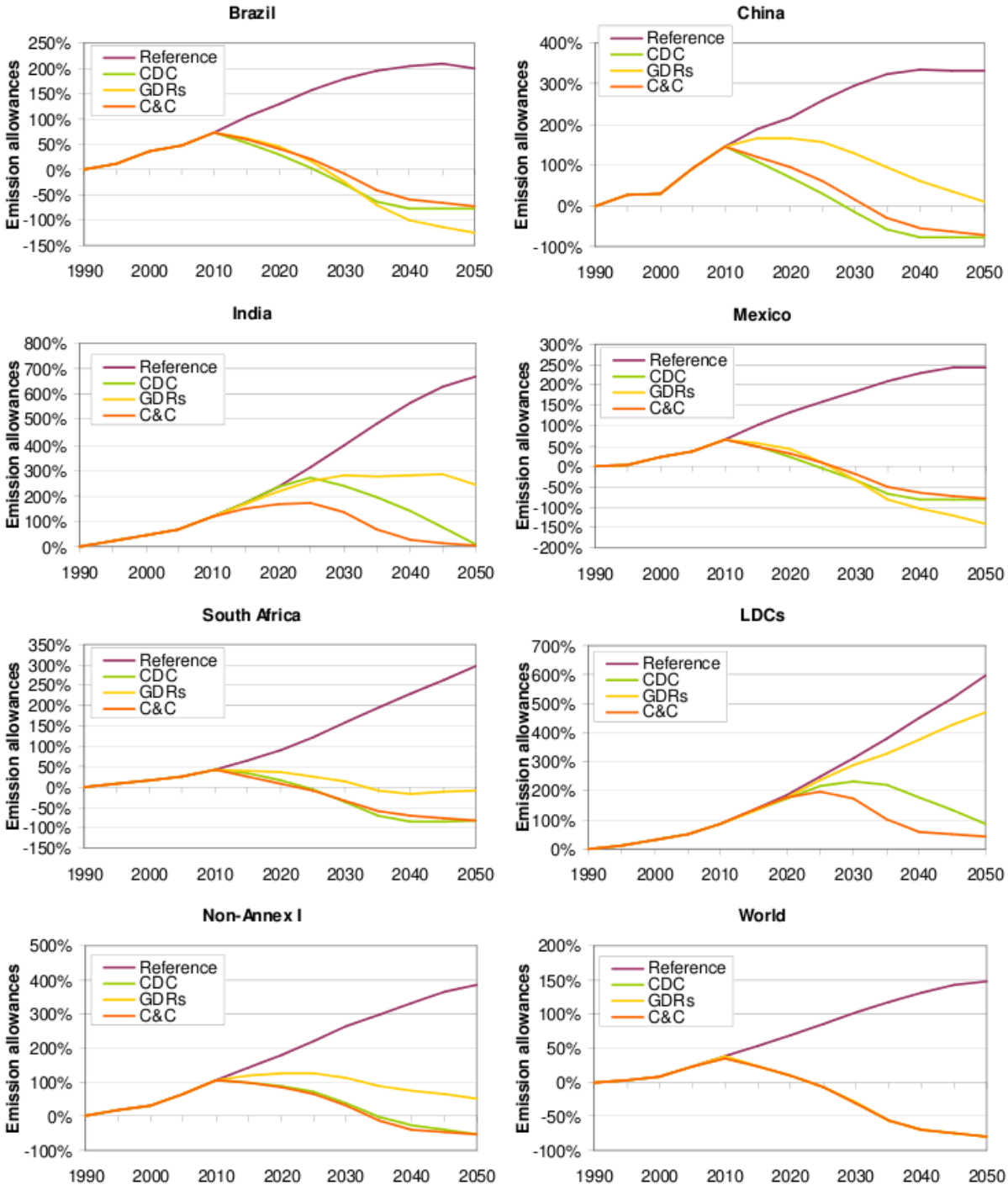


Figure 13. Development of national emission allowances as percentage change from 1990 emissions for non-Annex I and the world between 1990 and 2050 under CDC, GDRs and C&C.

Unfortunately, more scientific research is required to establish countries' carbon budgets under a 1.5 degree emissions pathway. This should be a Near-Term Priority for DEA in the White Paper. What is obvious, as illustrated in the following table, that the emissions targets in the White Paper are not consistent with scientific realities or the political realities of fair share. Even the LTMS, the last domestically produced scientific study endorsed at Cabinet, in its Required by Science scenario does not reduce emissions enough.

South Africa Population, Total Emissions, Per capita Emission

Government Plan in White Paper

	2004	2010	2020	2025	2036	2050
SA Population	47,227,000.00	50,133,000.00	52,573,000.00	53,751,000.00	55,600,000.00	56,757,000.00
Emissions (ton, upper limit)	446,000,000.00	542,000,000.00	583,000,000.00	614,000,000.00	614,000,000.00	428,000,000.00
Emissions (ton, lower limit)	446,000,000.00	542,000,000.00	389,000,000.00	389,000,000.00	389,000,000.00	212,000,000.00
Per Capita (ton CO2), Upper Limit	9.44	10.81	11.09	11.42	11.04	7.54
Per Capita (ton CO2), Lower Limit	9.44	10.81	7.40	7.24	7.00	3.74

LTMS

	2004	2010	2016	2020	2026	2050
SA Population	47,227,000.00	50,133,000.00	51,656,000.00	52,573,000.00	53,963,000.00	56,757,000.00
Emissions Low	446,000,000.00	542,000,000.00	463,000,000.00			268,000,000.00
Emissions Medium	446,000,000.00	542,000,000.00		473,000,000.00		290,000,000.00
Emissions High	448,000,000.00	542,000,000.00			483,000,000.00	314,000,000.00
Per Capita (ton CO2), Lower Limit	9.44	10.81	8.96	0.00		4.72
Per Capita (ton CO2), Medium Limit	9.44	10.81		9.00		5.11
Per Capita (ton CO2), Higher Limit	9.49	10.81		0.00	8.95	5.53

Another way to examine if South Africa would be taking on a fair share of emissions is to look at comparable countries (such as Brics and Mexico) and see what would happen if they took on South Africa's per capita emissions in 2050 alone, let alone cumulative emissions from 2011 to 2049. The results are if these countries were to adopt similar levels of emissions on a per capita basis by 2050 (what South Africa obviously considers fair in the White Paper) we would soon surpass the global two degrees budget of 750 Gt of carbon emissions, even if every other country, including LDCs, went to zero emissions.

If the rest of Brics + Mexico had South Africa's "Fair Share" in 2050

	Population 2050	2050 Per Capita (Lower Limit)	Mt of CO2 eq in 2050	Gt of C02 eq in 2050	Years to reach 750 Gt of total Carbon Budget on 2050 levels
China	1,295,603,763.00	3.74	4,839.37	4.84	154.98
India	1,692,008,631.00	3.74	6,320.03	6.32	118.67
Brazil	222,843,309.00	3.74	832.37	0.83	901.04
Russia	126,188,341.00	3.74	471.34	0.47	1,591.20
Mexico	143,925,837.00	3.74	537.59	0.54	1,395.10
Total	**3,480,569,881.00**	**3.74**	**13,000.70**	**13.00**	**57.69**

	Population 2050	2050 Per Capita (Upper Limit)	Mt of CO2 eq in 2050	Gt of C02 eq in 2050	Years to reach 750 Gt of total Carbon Budget on 2050 levels
China	1,295,603,763.00	7.54	9,768.85	9.77	76.77
India	1,692,008,631.00	7.54	12,757.75	12.76	58.79
Brazil	222,843,309.00	7.54	1,680.24	1.68	446.37
Russia	126,188,341.00	7.54	951.46	0.95	788.26
Mexico	143,925,837.00	7.54	1,085.20	1.09	691.12
Total	**3,480,569,881.00**	7.54	**26,243.50**	**26.24**	**28.58**

What makes South Africans different from Chinese, Russians, Mexicans, Brazilians, and Indians? The White Paper is making some sort of assumption on this as it is clear that if other similar countries could follow our emissions pathway, it would cause catastrophic climate change; therefore, they could not follow our pathway, yet it would be fine for us to emit at this level.

The last point is the conditional nature of the mitigation trajectory in the White Paper, namely dependent upon international finance. This is contrary to the Constitution. Our rights are not dependent on ODA, carbon finance, or donor funding. They are inalienable. South Africa is required to adopt emissions reduction even if no money comes from international finance, according to its Constitution. Furthermore, even if a global agreement on finance is struck at the UNFCCC, there is no guarantee that South Africa will receive much or any of it. The needs of LDCs are vast in terms of development, adaptation, poverty reduction and energy infrastructure. It is entirely imaginable that world resources would flow to these countries, and not South Africa.

Therefore, we make the following recommendations to Parliament:

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Recommendation #7: In defining internal carbon budgets for entities within South Africa, Parliament should put in place an enforcement strategy for non-compliance.

2.2 Carbon Taxation

Earthlife Africa Jhb recognises both the need for and the desirability of a carbon tax. National Treasury is certainly correct in recognising market failure in terms of emissions and the requirements to internalise these externalities.

Treasury is also correct to view carbon trading as a bad system. We hope that Treasury & Parliament will not implement a carbon-trading scheme nor support one in the future. Simply put, carbon-trading does not work.

Therefore, the comments to the White Paper should be viewed as suggestions to increase the effectiveness of carbon taxation and remove unintended consequences.

To begin, Treasury & Parliament should be absolutely clear on what it seeks to achieve with a carbon tax; fundamentally, carbon taxation should not be about revenue raising in and of itself, but rather a tool to enforce behaviour change and business practice in order to avoid ecological and economic catastrophe. In effect, a carbon tax is a punitive measure, economic coercion, and will thus, most likely, receive a negative reaction from sections of the business community due to the short-term interests of profit. Clarity of purpose in Treasury & Parliament will help to defeat undue influence in this regard and ensure the intended outcomes are achieved.

If the goal is reduce carbon emissions, and not merely to raise revenue, then Treasury & Parliament need to look long and hard at how this tax will be implemented. As Sasol and Eskom account for the bulk of the country's emissions, the main force of the tax should fall upon them. However, owing to both the inelastic nature of the products and the pricing regimes, it is unclear as to how the tax will force behaviour change, especially given the non-competitiveness of these markets.

As NERSA has allowed for the passing through of costs, carbon taxes will be passed on to consumers, who have no real option but to purchase from Eskom. As demand is set to grow (in fact, the IRP2 and other calculations have shown the danger under current economic practice is that demand outstrips supply), it is unlikely that Eskom will be facing a shortage of buyers. Therefore, what incentive is there for Eskom to change its methods of generation? If Eskom does not feel the pain, and in the absence of alternatives, a likely result will be consumers paying an additional tax (embedded in the electricity price) while emissions do not reduce; this is the worst possible result.

The case for Sasol is remarkably similar. As import-parity pricing rules the petroleum sector and the price of oil is set to rise considerably in the coming decades and that it is unlikely (given current economic fundamentals) that alternatives will be readily available, it appears that Sasol will be able to pass on carbon taxation to its customers and continue large scale emissions. Given that Sasol's breakpoint is somewhere around USD35 a barrel and oil is priced around a USD100 a barrel, rates of taxation would have to be quite high to alter profit margins even if oil prices remain stable at

current levels, which is unlikely. Further, as Treasury indicates, the South African economy will grow in coming years, and this will increase demand and consumption of petroleum products. Again, there is the distinct possibility that consumers pay Sasol's tax while Sasol continues its carbon-intensive production methods, and a worst case scenario results.

However, both Sasol and Eskom operate in regulated industries in which the price is set (at least in part) by Government. Treasury needs to ensure that carbon taxation in this arena (possibly in others, but this is the crucial area for mitigation efforts) is not passed through. In effect, NERSA and petroleum pricing agencies must not allow Sasol and Eskom to pass through these costs; the bottom-line of these companies must be affected in order for carbon taxation to achieve the aim of emissions reductions.

Essentially, this is a case of where a tax is being set on monopolies. In order to solve one market failure (climate change), another market failure will intervene to prevent the solution. Whereas taxation on Pick n Pay and Woolworths could lead to competition between the two to reduce carbon emissions in order to gain a cost advantage over each other (or they could form a price-fixing cartel, but that's another story), this is not the case with Eskom and Sasol. Nor is it likely that the monopolistic aspects of this section of the economy are going to change or even could change without significant upheaval. Further, if carbon taxation can't work on Sasol and Eskom, who produce the bulk of the emissions, there is really no hope for South Africa to mitigate its emissions and we all lose in the long-term.

On this last point, we wish to warn economists that the cost of inaction are often greater than the calculable costs. The loss of a capital city (eg. Gambia) would not be costs of rebuilding a new city but the shock to the entire economy. Climate change shocks will be multiple and prolonged; for example, repeated extreme weather events. If South Africa has to provide additional health care costs for an increase in malaria, that will mean less money for other budgetary items (say social grants or education), which will have knock-on impacts on other areas of society. The risk of significant societal stress and instability is considerable and will have foundational costs. Our ability to deal with other problems (which already provide a considerable struggle and resource allocation) will decrease; even if we can manage to adapt to climate change, it may fatally weaken our responses to non-climate change problems.

Treasury seems to put great faith in carbon capture and storage. This is strange as CCS is decades away (if at all) from any implementation and the CCS Atlas has shown that the only possible storage facilities are very far from the sources of pollution. Treasury cannot plan on CCS, as the facts do not align with Treasury's faith.

The last overall point has to deal with “ring-fencing” or “earmarking” of funds derived from carbon taxation. In its passionate arguments against this, Treasury seems to be missing the primary point behind a carbon tax, which is to reduce emissions. This is a specific tax for a specific purpose, and the revenue should go towards that purpose. In other words, a successful carbon tax would have declining revenue as emissions would decrease. This will require not only a tax but also massive investment in mitigation. In the energy sector alone, the figures become astronomical quite quickly.

To provide a just and rapid transition to a low-carbon economy will require state intervention and state spending. By earmarking carbon tax revenue for this purpose it ensures that funds will be available. It will also help to gain social acceptance of the tax; people can understand and agree with the tax if they can see where those funds are going. This is no small point; public resistance is a distinct risk for Treasury and it should minimise this risk.

Treasury give three reasons as to why funds should not be earmarked:

1) Risk of Misallocation: We believe that a just transition to a low-carbon economy can absorb the revenue from a carbon-tax. Some of these expenses are massive and front-loaded, such as rail infrastructure, electric vehicles, renewable energy. Others are more or less continuous, such as increased basic services (which help with adaptation measures). Furthermore, if Treasury collects more than required, the excess can be saved for future adaptation measures (a two degree warming would still require adaptation measures). There is no harm in saving for tomorrow; in fact, Treasury recommends it.
2) Special Interests Groups: Apart from the nuclear industry (see below), we believe that Treasury can avoid be captured by special interest groups. If such groups could capture this revenue, then they could capture general expenditure.
3) Obstacle to evaluation and modification of the tax: We see no reason as to why this would necessarily be the case. Like point 2), good administration on the part of Treasury can avoid this.

One area we do not believe that carbon-tax revenue should go to is nuclear power. Having already seen massive wastage of public funds in nuclear power before (PBMR), we suggest that Treasury not fund additional nuclear power plants or seek to use revenue from carbon taxation for nuclear power (if nuclear power is a viable alternative and as it is a mature technology, nuclear plants should not require state funds for construction, operation and disposal). Further, safety considerations, regulation requirements, public liability, decommissioning, and waste storage are all of such vital interest to society in general, Treasury, if it commits to nuclear power, is committing to underwrite these costs for the very long-term. In this case, Treasury would be hijacked by nuclear-power special interests groups and held over the proverbial barrel; nuclear stations may lose money, go bankrupt, but it is the state that will have to pick up those costs because the alternative is beyond consideration.

In the most strongest terms, we advise Treasury & Parliament not to commit public funds for nuclear power. It is a shotgun marriage in which Treasury & Parliament will ultimately lose the house, car, and silverware. Furthermore, nuclear power is not required for an effective mitigation strategy.

Therefore, we make the following recommendations to Parliament:

Recommendation #8: While a carbon tax is necessary, Parliament should not allow the electricity generation and liquid fuels sector (in particular Eskom and Sasol) to pass through the carbon tax to consumers.

Recommendation #9: Revenue from the carbon tax should be ring-fenced for mitigation (renewable energy, energy efficiency, demand side management), adaptation and protection of the poor, and Parliament should instruct Treasury in this regard.

Recommendation #10: Neither carbon capture and storage or carbon trading have been shown to be effective. In the case of CCS, it is entirely theoretical. Parliament should not endorse either of these two strategies.

Recommendation #11: Parliament should not allow state funds (including from the carbon tax) to be allocated to new nuclear power plants.

3. Conclusion

Parliament is faced with an awesome task. It needs to ensure that the citizens of this country are not afflicted by the worst consequences of climate change. In order to do this, it needs to revise the mitigation trajectory in the White Paper substantially and thus give directive to the executive to ensure a similar global trajectory is achieved at COP17.

None of this will be easy, it is a national challenge of a magnitude not faced by the country previously. It does, however, mean that we can take steps to transform our economy that will not only radically reduce our emissions but achieve greater equality and eradication of poverty. For example, we can create far more jobs by transitioning to a low-carbon economy than we can do by maintaining the current high-carbon economy. This is a task we should all get behind.