# ‘The next few years are probably the most important in our history’

**– Dr Debra Roberts, Contributing Author to the IPCC’s Special Report on Global Warming of 1.5**

Key points to take into consideration when preparing a response to the Northern Territory Government’s (NTG) *Climate Change Discussion Paper*. ***Note:*** Points are separated into mitigation (reducing emissions) and adaptation (adapting to the impacts of climate change). Both are crucial.

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**MITIGATION**

1. To increase climate resilience, rapid, far-reaching, and deep reductions in greenhouse gas emissions are required (net zero carbon emissions by 2050)
* There is scientific consensus: greenhouse gas emissions need to decline rapidly to net zero[[1]](#footnote-1). Net zero emissions is achieved when more greenhouse gases are stored or sequestered than are released to the atmosphere.
	+ This is consistent with the Paris Agreement science-based target (ratified by 197 countries, including Australia): Limit global warming to less than 2oC – and pursue efforts to limit warming to 1.5 oC (above pre-industrial levels) [[2]](#footnote-2). This target was selected as within this threshold, the climate system is likely to remain in a habitable and stable state
* The *IPCC Special Report on Global Warming of 1.5 oC[[3]](#footnote-3)*, released on 8 October, 2018 (3 days after the *Climate Change Discussion Paper*) determined the feasibility of limiting warming to 1.5 oC. The report synthesised the best available scientific evidence; citing more than 6,000 scientific references. Thousands of expert and government reviewers contributed to the process
* This report determined limiting global warming to 1.5 oC would require rapid and far-reaching transitions in land; energy; industry; buildings; transport and cities
* Global net human-caused emissions of the carbon dioxide would need to fall by approximately 45% from 2010 levels by 2030, reaching net zero by around 2050
* This would require wide-sweeping and unprecedented changes in all aspects of society, with clear benefits to people and natural ecosystems
* While extremely challenging and unprecedented in scale, this transition is possible. The technology and expertise to achieve this are available today
* However, the longer deep cuts in emissions are delayed, the more costly and difficult it will become, and the higher the subsequent climate risks
* Unless rapid and deep emissions reductions are realised, the 1.5 oC carbon budget threshold could be passed in as little as 15 years
* Warming at 1.5 oC is not considered ‘safe’ for most nations; communities; ecosystems; and sectors and poses significant risks to natural and human systems (when compared to current global warming of 1oC)

**Recommendation: Legislate a science-based emissions reduction target of net zero by 2050. Include interim targets and sector-specific targets (with the recognition that some sectors are more difficult to decarbonise than others)**

1. The Northern Territory must transition to a low-carbon economy (and quickly)
	1. Transitions required in energy; land use; industry; buildings; transport; and cities
* To stay within 1.5 oC, all governments need to do their fair share
* The NTG Discussion Paper states the NT needs to play its role in international and national efforts to reduce emissions and adapt to the impacts of our changing climate[[4]](#footnote-4)
	+ Australia is a developed nation, and as a developed nation, we have the capacity to commit to deep emissions reductions (and realise the benefits)[[5]](#footnote-5)
	+ This will require reaching net zero emissions by 2050[[6]](#footnote-6)
* There are significant risks posed for emissions-intensive resource-based economies as the global economy decarbonises (by 2050, all fossil fuels – including natural gas – must be phased out)[[7]](#footnote-7); the risk of locking-in emissions from related infrastructure[[8]](#footnote-8)
* Other parts of Australia are doing their fair share. Victoria has legislated a net zero emissions target by 2050 (with five yearly interim targets to meet the long-term target)[[9]](#footnote-9); NSW has committed to net zero by 2050[[10]](#footnote-10); Tasmania achieved net zero emissions in 2018[[11]](#footnote-11); South Australia has a net zero emissions by 2050 target and a legislated climate change framework[[12]](#footnote-12); Queensland has committed to net zero by 2050[[13]](#footnote-13); and the ACT recently revised their net zero emissions target from 2050 to 2045[[14]](#footnote-14)
* There are significant economic opportunities associated with decarbonisation
	+ In 2018, the Global Commission on the Economy and Climate found that bold climate action could yield a direct economic gain of USD26 trillion through to 2030 compared with business as usual. This is likely to be a conservative estimate[[15]](#footnote-15)
	+ With a continued sharp decline in the cost of renewable energy generation and rapid advancements in low-carbon technology, transitioning to a low-carbon economy now makes economic sense[[16]](#footnote-16)
	+ The economic costs of not acting are extremely high. For example, climate change will lead to more extreme weather events[[17]](#footnote-17). The estimated cost of extreme weather events in the NT was $1.3 billion in 2017 (not including heat waves or other climate events)[[18]](#footnote-18)
* The next 2-3 years is a critical window: when investment and policy decisions will be made that will shape the next 10-15 years and potentially lock-in high emissions trajectories[[19]](#footnote-19)

**Recommendation: Commit to decarbonising the economy, so climate risk can be mitigated and the co-benefits and financial opportunities associated with a low-carbon transition can be realised**

**ADAPTATION**

1. To adapt to climate change, it is crucial climate change risks are determined (Northern Territory-specific) and a comprehensive vulnerability assessment and adaptation plan is developed
* Risks from climate change arise from the interaction between a *hazard* (triggered by an event or trend related to climate change), *vulnerability* (susceptibility to harm) and *exposure* (people, assets or ecosystems at risk)[[20]](#footnote-20). Climate risks have not been extensively determined for the NT
* The severity of the climate change risks posed to Territorians are not properly taken into account
	+ For example, the Discussion Paper states temperature is expected to rise by 2.7 oC – 4.9 oC by 2100[[21]](#footnote-21). This exceeds the Paris Agreement target. Even warming of 1.5 oC is not considered ‘safe’ for most nations; communities; ecosystems; and sectors and poses significant risks to natural and human systems (when compared to current global warming of 1oC)[[22]](#footnote-22)
	+ A number of climate change impacts could be avoided by limiting global warming to 1.5ºC compared to 2ºC, or more. For instance, coral reefs would decline by 70-90 percent with global warming of 1.5°C, whereas virtually all (> 99 percent) would be lost with 2ºC; at 1.5°C[[23]](#footnote-23), the frequency of warm extreme temperatures over land will increase by 149% over Northern Australia, at 2ºC, this increases to 406%[[24]](#footnote-24)
* The impacts include outlooks to 2100, yet climate change impacts are already affecting Territorians.
	+ For example, globally, 18 of the last 19 years were the warmest on record[[25]](#footnote-25). A 2018 report from the Australia Institute found that in the Territory, the number of days over 35 oC per year in Darwin has increased from 5.6 days per year in the early 20th century to over 20 days per year in the last five years (days over 35 oC and with > 70% humidity are considered extremely dangerous). CSIRO climate models predict that without drastic reductions in greenhouse gas emissions, the number of days over 35 oC would increase to 132 over the next 12 years. This would have severe implications on health; productivity; agriculture; construction; and tourism. Ecosystems would be severely affected and the standard of living would greatly decline[[26]](#footnote-26)
* It must be noted, impacts will be felt disproportionately. The worst impacts are expected amongst those with the least resources or capacity to adapt; indigenous people; those working outdoors; children and the elderly; and those with agricultural or coastal dependent livelihoods[[27]](#footnote-27)

**Recommendation: As a matter of urgency, climate change risks for the Northern Territory need to be comprehensively investigated and determined. A climate change vulnerability assessment and adaptation strategy then needs to be developed, taking into account both short- and long-term climate risks**

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