Submission on the Environmental Protection and Biodiversity Conservation Act (1999)

Senator Gerard Rennick

It is a pleasure to make this submission to the Independent Review of the Environmental Protection and Biodiversity Conservation Act 1999 (the "Act" henceforth).

Section 522A of the Act mandates a review every ten years and it is important that evolving environmental issues are considered calmly and comprehensively over the course of this period.

Environmental issues have never been as prominent as they are today. People are concerned about the long term effects of human development and how they are managed. At a time when the politics of climate change is more pervasive and polarising than ever before, we must again look closely at the Act and determine if it remains fit for purpose.

The rapid uptake of intermittent energy generation into our electricity grid has brought new challenges, both economic and environmental, that the Act has not previously addressed. While renewable generation technologies provide opportunities, they do not come without substantial economic and environmental risk. Sustainable environmental management must rest on a legislative framework borne of a pragmatic understanding of all the available evidence irrespective of the politics. Ideological proclivities should never dictate our course when delivering outcomes. Robust solutions and sound management will only come from a careful consideration of a full menu of choices and a pragmatic, evidence based mindset.

This independent review seeks to determine whether or not the Act is currently fit for purpose and gives an important opportunity to consider perspectives from a variety of stakeholders.

As a Senator for Queensland, I am grateful for the opportunity to hear the views of so many everyday Queenslanders, especially as I travel the length and breadth of the state each year.

While a wide range of views are expressed on issues of relevance to specific communities, there are also opinions that a great many Queenslanders share; and I draw on these as the motivation for this submission.

I submit the following recommendations for the consideration of the Independent Review and attach supporting evidence and argument:

1) That Section 140A, which prohibits the Minister from approving:

   (a) a nuclear fuel fabrication plant;
   (b) a nuclear power plant;
   (c) an enrichment plant;
   (d) a reprocessing facility;

   be removed and replaced with a framework allowing a process by which so called Generation III and IV and small modular reactors may be considered, subject to key environmental criteria in the Act and subject to public consultation, and once comprehensively satisfied, approved by the Minister. This would also suggest the

repeal of Section 10 of the *Australian Radiation Protection and Nuclear Safety Act* 1998 ("ARPANS Act" henceforth) and the repeal of the relevant sections of the *Clean Energy Finance Corporation Act* 2012 to ensure there is no potential for legislative inconsistency.

2) Ministerial discretion with respect of land clearing be altered to remove the requirement for federal environmental approval for tree clearing, even with respect to a directly protected asset such as a World Heritage area, Ramsar wetland, threatened species, ecological community, or migratory species.[1] State-based tree clearing and vegetation management legislation gives sufficient regulatory power to authorities to ensure that irresponsible habitat-destroying practices do not occur. Most state and territory government legislation is in and of itself already quite onerous. This would require substantial altering to the provisions of the Act to specifically exclude tree clearing. This doubling-up of legislation just makes approval processes more complex and frustrating, especially for primary producers while doing little to enhance environmental outcomes, given the already extensive powers of State Governments in this area. This also ensures the public have a clear understanding of the delineation of federal and state government responsibilities in this area.

3) That the disposal of renewable energy products, particularly solar panels and associated compounds, waste and batteries, be fully regulated and an appropriate legislative framework be developed to minimise the potential for localised pollution and land poisoning to occur as a result of their improper use or disposal. The Victorian Government has recently legislated in this space, banning all e-waste in landfill.[2] The complex supply chain and relatively short product life of solar panels (be they installed at a solar farm or on a rooftop) require a national regulatory scheme. At present there is only one recycling facility in Australia, recycling just 50,000 solar panels per year; while projections currently estimate 1,500 kilotons of solar waste by 2050. It is unacceptable not to have an appropriate national framework in place for the recycling and disposal of solar panels, particularly as they pose such a high toxic risk, especially to aquatic habitats - and release significant harmful chemicals.[3]

4) That all windfarm operators be required to collect data and submit an annual audit of all bird species impacted by wind turbines. Operators must record the total number of birds and other animals (including flying foxes and bats) killed by each wind turbine over the course of each year. Once submitted by the prescribed deadline and verified, each audit of bird kills and injuries will be made publically available and published on the Department of Environment website.

5) That the construction of critical water infrastructure, particularly dams be specifically excluded from the provisions of the Act. Drought has been perhaps the core environmental concern for the nation for the past 20 years. It is simply unacceptable that a tenuous link to a trigger under the Act delay shovel ready projects that meet state environmental assessment criteria.

[1] https://theconversation.com/why-arent-australias-environment-laws-preventing-widespread-land-clearing-92924
[2] https://www.cleanenergycouncil.org.au/news/what-you-need-to-know-for-the-victoria-e-waste-ban
[3] https://www.abc.net.au/news/2019-07-23/solar-power-waste-landfill-environmental-impact/11336162

Nuclear Power Ban

The present ban on nuclear power in Australia is made explicit in S140A of the *Environmental Protection and Biodiversity Conservation* Act and reinforced in Section 10 of the APARNS Act. The Clean Energy Finance Corporation is also banned from investing in nuclear power; which seems odd, as according to most metrics, nuclear is the cleanest reliable energy source available. This ban should be immediately lifted to permit open and informed consideration of modern (Generation III, Generation IV and small modular reactors) proposals for nuclear power generation without the stultifying paralysis of a blanket ban. This is in line with the findings of the recent report of the House of Representatives Committee on Environment and Energy "Not Without Your Approval: the Way Forward For Nuclear Technology In Australia" (henceforth "the Report").

The present ban on Nuclear Power under the Environmental Protection and Biodiversity Conservation Act is contradictory to the purpose of the Act. Most notably the below:

Objects of Act:

1) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and

2) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources.

Perversely, the blanket ban on nuclear power has led to the following adverse environmental outcomes:

- increased Sulfur emissions through essential reliance on fossil fuels;[4]
- emerging solar and battery waste problems; and
- reduced air quality due to increased reliance on fossil fuels.[5]

The report looked into the viability of all nuclear technology in Australia. It found that perceived climate change has sparked a renewed interest in nuclear power due its status as a reliable emissions-free baseload power source. It also noted the need for a social licence and an economic assessment in light of new generation and safety technology, particularly small modular reactors.

Climate change is the single biggest environmental issue dominating the zeitgeist. A solution to overall greenhouse gas emissions is akin to an environmental silver bullet at present. To try and reduce the emissions from coal generation Australia has in recent years ramped up the introduction of renewable sources of generation like solar pv and wind into our energy grids. Australia is a highly advanced economy where residents enjoy a high standard of living by global standards. Australians require affordable and reliable energy to sustain economic growth and maintain their standard of living. Reductions in emissions simply cannot come at the expense of keeping the lights on. No government has a political or social licence to radically decarbonise the Australian economy at the expense of essential services and jobs.

[4] https://www.pv-magazine-australia.com/2019/08/19/australias-so2-pollution-shows-coal-is-by-far-the-most-costly-generator-of-electricity/

[5] https://nuclear.gepower.com/company-info/nuclear-power-basics

The report noted at paragraph 1.20 that in order to meet its international obligations for emissions reductions *"Australia needs to reduce its greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2030*."

Nuclear power generates baseload electricity with nil to negligible carbon emissions.[6] Air pollution and carbon dioxide reduction are two core environmental priorities for most national governments. Improvement in air quality can be best and most quickly achieved through a rapid uptake in nuclear power generation, whilst reliable baseload supply is maintained.

Analysis conducted in 2014 of the carbon footprint of various energy sources by the IPCC demonstrated that nuclear power had a median value of 12 g CO2eq/kWh, which is the lowest out of all commercial baseload energy sources.[7] The report notes coal has a median figure of 220 in this area even with carbon capture and storage whilst combined cycle gas has a median of 170. The National Renewable Energy Laboratory has said that the greenhouse gas emissions caused by nuclear power generation across the entire life cycle of a power plant[8] is similar to that of other renewable sources.

The report notes at paragraph 1.42 "*that the uncertainty of wind and solar PV results in the requirement for other sources of energy to back them up, otherwise referred to as firming*."

The report goes on to state … "*variable renewable sources of energy need to be partnered with other more reliable sources in order to alleviate shortfalls in production*." Therefore, the more renewables forced into Australia's electricity system, the more the total capacity of the system must increase to firm the reliability of supply. Hydroelectricity is a potential firming alternative to coal and gas in pursuit of the conjoined goals of lower emissions and reliable and affordable power. However, it is important to note as the report states at paragraph 1.24 *"comparisons of carbon dioxide emissions from nuclear energy compared with hydroelectricity, wind and solar do not always take into account emissions from storage facilities or backup generators."*

Australia has the political will and has committed to a binding international goal to reduce its carbon emissions. However, each of these is effectively trumped by the overriding imperative of a stable electricity network to ensure that Australians maintain their standard of living and a sustainable growth trajectory.

As a country, Australia can 'walk and chew gum' at the same time…and we should reject any artificial restriction on our menu of energy options, especially when our continent enjoys relative geological stability and one third of the world's uranium resources. It is impossible to fully and fairly investigate nuclear power as a potentially significant part of Australia's energy system without first lifting the ban on nuclear technology currently imposed by the Act.

Popular arguments against nuclear energy are almost invariably highly-emotive, irrational perceptions based on fear and misinformation. Safety risks certainly exist; they are real and must be catered for. Despite this, impressions of the 1986 Chernobyl nuclear accident,

[6] https://e360.yale.edu/features/why-nuclear-power-must-be-part-of-the-energy-solution-environmentalists-climate
[7] https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-iii.pdf
[8] https://web.archive.org/web/20130404145453/http://www.nrel.gov/analysis/sustain_lca_nuclear.html

especially when given a make-over by Hollywood, are more likely the source of peoples' fear than is the current reality.

More recently, the 2011 Fukishima accident was by far the largest incident to occur in the hundreds of plants around the world in the last thirty years. Yet, the Fukishima accident only led to possibly one death[9].Whilst I do not want to trivialise the tragedy of even one life lost, even if only tenuously linked to the accident itself; I do, however, note far greater risks. Air pollution, for example is a far more significant killer worldwide, with the World Health Organisation putting the number of premature deaths at 4.2 million per year due to ambient air pollution, commonly called smog. [10] In Australia, approximately 3000 people die every year as a result of air pollution. The economic impact of this is calculated at between $11 billion and $24 billion per year as a result of the early mortality alone.[11] To put this in perspective, this is twice the national road toll per year. By contrast, estimates are that nuclear power has saved 1.84 million lives due to the reduced air pollution created by its widespread commercial uptake since the 1970s. Further uptake of nuclear power generation across the world could save another seven million lives by mid-century due to reduced deaths from air pollution alone. [12]

It is arguable that nuclear energy is more environmentally sound than solar energy when proponents consider appropriately the negative impact of lithium and rare earth metal mining. Examples of lithium and rare earth metal mining in China and South America demonstrate how intensive and environmentally damaging these processes can be, and the renewables industry, ever dependent on these minerals, is growing at a rapid rate. The effects of the poorly regulated Chinese rare earth metal mining industry (which has supplied a majority of the global market) have been immense. Environmental impacts have included, heavy metal contamination of waste water, leaching of solution into soil, air pollution, water pollution, loss of biodiversity and substantial human health impacts. Estimates suggest that the environmental remediation costs of the Chinese rare earth metal industry will surpass the value of the mined products. [13]

Similarly, lithium mining, primarily driven by increased demand for electronic batteries for renewable energy storage, has directly resulted in hazardous environmental issues; particularly as global lithium production is concentrated in South America, where the mines are largely unregulated. High risk environmental issues for lithium mining include, hazardous spills, leaching of toxic contaminants and high emissions. There has been little detailed consideration of the overall impact of a rapid uptake of renewable energy production throughout its supply chain. Conversely the mining of uranium by a well-regulated Australian mining industry and putting some of that uranium to use to fuel domestic nuclear power generation is likely to have a net positive effect on the environment - both locally and also globally.[14]

Solar panels have been found in studies to produce up to 300 times more toxic waste per unit of energy than a nuclear power plant. Solar panels often contain lead and cadmium,

[9] https://www.bbc.co.uk/news/world-asia-45423575
[10] https://www.who.int/health-topics/air-pollution#tab=tab_1
[11] https://soe.environment.gov.au/theme/ambient-air-quality/topic/2016/health-impacts-air-pollution
[12] https://pubs.acs.org/doi/10.1021/es3051197
[13] B Gavin, 'Sustainable Development of China's Rare Earth Industry within and without the WTO', Journal of World Trade. 49(3), 2015, pp. 495-516.; Packey & Kingsnorth, 2016, op. cit.
[14] https://minerals.org.au/sites/default/files/Environmental%20impacts%20of%20uranium%20mining%20in%20Australia_May%202017_WEB.pdf

chemicals which are incredibly toxic to humans.[15] Nuclear waste is heavily regulated in all places, where it also comes with stringent protocols around its disposal. By contrast, many tons of solar pv and battery waste continue to be routinely disposed of in landfill without any public or environmental health warning or best practice. This suggests that embracing new generation nuclear technology will, among other things, help to ameliorate our growing landfill problems.

Using the best available technology, 90% of spent nuclear fuel can be recycled, although it is presently stored mostly in secure impenetrable casks on site. [6] There is a clear case for a sensible and more informed discussion with the public about nuclear waste and the real risks posed by all generation sources when compared with the nuclear option.

Nuclear waste disposal is a perception problem, underpinned by emotion, not a practical or technological or environmental problem…and as such, the review could be forgiven for questioning what place a blanket ban on most forms of nuclear technology has in the Act.

A Morgan Poll found for the first time in September 2019 that majority support had been reached for nuclear power in Australia.[16] Whilst it is only one poll, it may represent a shift in sentiment and an open information campaign grounded in fact, not hysteria could further persuade people of the environmental benefits of this technology.

Nuclear power is a proven and reliable replacement for other baseload sources. At present, renewable energy from solar and wind is only intermittent, and requires a reliable baseload source – coal, natural gas, hydro or nuclear – as a firming resource to maintain supply. In the United States in 2016, nuclear energy was demonstrated to be the most reliable of all forms of electricity in terms of days fully operational at 92%,[6] while no renewable source in the same year was even operational for 40% of days.

In addition to the compelling environmental and energy supply arguments in favour of lifting the ban; the ban on nuclear power generation imposed by the Act has also meant substantial negative consequences for the Australian economy.

Australia has approximately one third of the world's known uranium reserves; however, only three mines are currently operational, and one of those is expected to close in January 2021. All of our production is exported, however, despite our superior resources and advanced mining technology; we are behind Kazakhstan and Canada in terms of exports.[17] In 2017-18 Australia's uranium mining and export industry employed 3000 people and failed to meet even 10% of global demand. If Australia were to lift uranium exports to 30% of the global market by 2040, this is estimated to deliver an additional $8.5 billion annually and 20,000 new jobs to the Australian economy.[18]

When weighed up objectively with all risks and benefits laid bare, it is clear that a blanket ban on nuclear energy would perplex any rational and unbiased observer. Removing the ban on nuclear energy will not mean large-scale investment and rapid development of the sector in Australia overnight; but rather it will provide an opportunity for all technology options to be openly and thoroughly tested within an Australian context, without an outdated political

[15] http://environmentalprogress.org/big-news/2017/6/21/are-we-headed-for-a-solar-waste-crisis
[16] http://www.roymorgan.com/findings/8144-nuclear-power-in-australia-september-2019-201910070349
[17] https://world-nuclear.org/information-library/country-profiles/countries-a-f/australia.aspx

[18] There's more to Australian Mining, Minerals Council of Australia, 2019

fix from the Twentieth Century effectively pouring 'cold water' over any proposal before it's even considered.

If nuclear energy is truly unsuitable for Australia, then it is counterproductive to artificially impose a blanket ban to prove that; and if it can't be proven, then surely it should proceed.

A blanket ban doesn't give scrutiny to the issue, it simply forestalls informed debate and leaves Australia with a knowledge deficit and a missed opportunity.

Overall, Australia's ban on nuclear energy is an environmental negative and does not stack up to any objective or informed scrutiny. It is a politically charged orphan provision of the legislation which was inserted into the Act in order to appease political tensions at the time.

The evidence shows that maintaining the nuclear energy ban is contrary to the scope and objectives of the Environmental Protection and Biodiversity Conservation Act.

The ban achieves no positive outcomes, but rather only denies real opportunities to solve a problem that has beset and confounded Australian governments for twenty years.

Lifting Australia's nuclear energy ban does not mean the Commonwealth would necessarily fund or subsidise the creation of a nuclear power facility. All it only means is that if there is an environmental, economic and social case for nuclear energy in Australia, then there can be appropriate consideration of all proposals.

2) **That the Federal Government remove its discretion over land clearing.**

The Federal Government should give up the power to delay development projects and prosecute offending entities for land clearing. This power is already clearly vested in the states. Overlapping Commonwealth legislation and federal responsibility is unreasonably onerous and represents only unnecessary duplication and green tape. This duplication of responsibility also serves to undermine accountability and fails to improve outcomes for farmers and the environment.

The Act empowers the Federal Government to make decisions around land clearing when the impacts affect a directly protected entity such as a World Heritage Area, threatened or migratory species, ecological community or Ramsar Wetland.[19] The delineation of environmental responsibilities between State and Federal Government was set out by the COAG Heads of Agreement on The Environment from 1997. The Commonwealth accepted responsibility for places of national significance and any obligations arising from international treaties.

Land management should substantially be a state and local government responsibility. Large bureaucracies in Canberra should not have responsibility for, or substantial influence over, the way in which mining, housing and agricultural development takes place across state jurisdictions. Tree clearing is not an inherently environmentally destructive activity and it should not be treated as such. The assessment of land clearing applications should be carried out correctly and methodically only once by a single appropriately credentialed authority operating under state government oversight.

[19] https://theconversation.com/why-arent-australias-environment-laws-preventing-widespread-land-clearing-92924

The Commonwealth Government should not retain powers to overwrite the States when it comes to land management. The concerns I and many constituents have around the current dual provisions around tree clearing stem from the so called interested person's provisions within the Act[20]. In an era when environmental activism has been taken to disruptive extremes; sensible land clearing that has already been approved by a state government, should not reasonably be subject to a Federal Court injunction brought by a distant activist group who have managed to find, and subsequently weaponise, a tenuous link to a protected species.

Such opportunities for disruption and delay available to activist groups under the Act only bring additional bureaucratic obstacles and costs to what are otherwise well-considered and responsible projects. If the environmental impact of tree clearing was to seriously threaten a protected species, then it is unlikely that the fact of clearing itself would be the cause. This would not diminish the ability of the Federal Government to ensure that its international obligations around directly protected entities are met.

State based land clearing laws are already, of themselves, strong and prescriptive and often include protections against many of the negative environmental impacts that are deliberately fashioned as triggers for activist disruption under the Act.

For example, in Queensland, we have some of the most stringent vegetation management laws in the world. Queensland law already prohibits clearing for high value agriculture, regulates vegetation with reference to the Great Barrier Reef[21]and to protect essential habitat for near threatened wildlife. Such state-based legislation is already thought to be extremely onerous in and of itself. A further layer of needless complexity and cost added to the approval process courtesy of the Commonwealth effectively serves only to block or unreasonably delay sustainable land management and nation-building development.

The national debate around fuel loads and bushfires demonstrates what can happen when there is an emotional attachment to the concept of not clearing trees and when that mindset is allowed to influence sustainable land management practices. The fact is, that human environments in all forms only exist because of land clearing to some degree. The ability for radical activist groups to find and exploit a loose provision in the Act to remotely block a land clearing project which has previously satisfied strict state laws and is otherwise lawful must be removed.

The needless duplication of responsibilities between state and federal jurisdictions, the endless streams of red tape and a consequent lack of accountability, are what really frustrates Australians when it comes to our system of government and how it operates. By removing this federal responsibility, Australia will be one step closer to addressing the accountability crisis that exists in all levels of government; while at the same time improving outcomes for the environment and for rural, regional and remote communities.

The fact that a farmer could go through the extensive bureaucracy required by the state government to clear a reasonably small parcel of land for grazing or another agricultural purpose only to have an activist group from thousands of kilometres away lodge an objection and subject that farmer to further costs, green tape and delay is simply unacceptable.

[20] https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1819/Quick_Guides/EPBC

[21] https://www.longreach.qld.gov.au/downloads/file/26/changes-to-the-vegetation-management-act-1999

I therefore submit that the EPBC Act be substantially altered to recognise tree clearing as a legitimate and acceptable land management activity to be supervised, authorised and policed by relevant state governments, without any regulatory interference or approval burden applied by the Commonwealth; and to that end, that all federal government oversight currently prescribed by the Act in this regard be removed.

3) **Solar and Battery Waste Regulatory Regime**

Solar panels, particularly rooftop solar have been widely available for the past twenty years. Many panels have been retired already. By 2050 the amount of waste from retired solar panels in Australia is projected to be over 1,500 kilotons.[22]

Solar (specifically the most common form in photovoltaic panels) is often heralded as an environmental saviour because of its promise of emissions free energy which has seemingly a limitless lifespan. However, solar panels do in fact break down, with an average life span of just 20 to 30 years depending on manufacturing quality and other technical factors.[23] [24]

Australia's Product Stewardship Act is ostensibly designed to ensure that those who make, sell and use a prescribed product do not allow that same product to harm the environment or people when it reaches the end of its useful life. In 2016, solar panels were added to a priority list to have a specific waste management scheme designed under this Act. [22]

The Commonwealth has control over hazardous wastes via its obligations under the Basel Convention- this includes solar waste under the 1997 Heads of Agreement from COAG regarding the environment. Previously, Australia has sent recycling overseas to China; however this is no longer a viable option. As a signatory to the Basel Convention, exporting hazardous materials requires permits.[25] Landfill is not a feasible option for solar because, contrary to previous assumptions, lead and carcinogenic cadmium – often found in solar cells can completely wash out of solar modules over a reasonably short period of time due to the effects of rainwater alone.[26]

Solar waste currently has no laws regulating it in Australia. [27] This is unacceptable, given the huge quantity of solar pv already installed and the toxic waste crisis that is emerging as a direct consequence. Whilst landfill capacity will physically accommodate the projected more than 1,500 kilotons of solar waste by 2050, the concern with solar, associated batteries and other e-waste is the potential leaking of an unknown cocktail of toxic chemicals into urban environments and waterways. It has been estimated that solar pv creates 300 times more toxic waste per unit of energy than does a nuclear power plant. [28] This should give us all an easy to understand comparison of the potential scale of the problem, with over 2 million Australian households having rooftop solar at the end of 2019. [20]

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[22] https://theconversation.com/theres-a-looming-waste-crisis-from-australias-solar-energy-boom-117421
[23] https://www.smh.com.au/politics/federal/waste-crisis-looms-as-thousands-of-solar-panels-reach-end-of-life-20190112-p50qzd.html
[24] https://theconversation.com/theres-a-looming-waste-crisis-from-australias-solar-energy-boom-117421
[25] http://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx
[26] https://www.forbes.com/sites/michaelshellenberger/2018/05/23/if-solar-panels-are-so-clean-why-do-they-produce-so-much-toxic-waste/#518df724121c
[27] https://www.smh.com.au/politics/federal/waste-crisis-looms-as-thousands-of-solar-panels-reach-end-of-life-20190112-p50qzd.html
[28] http://environmentalprogress.org/big-news/2017/6/21/are-we-headed-for-a-solar-waste-crisis

At present, solar is not a big enough waste stream to enter the consciousness of most Australians, even with widespread summer storms, hail and bushfires dramatically shortening the life of solar panels in affected areas. However, the obvious answer to this is that the vast majority of the panels have not yet reach maturity of their life cycle. Dumping tonnes upon tonnes of solar waste in landfill for decades to come would be an environmental disaster, and one we should have the foresight to avoid.

We can clearly see that there is an impending problem and we do have the technical ability to recycle the waste – at a cost. To date the missing ingredients to engaging a reliable solution before we reach crisis point is greater public awareness of the problem and the political will that comes of that awareness. A substantial investment is required as a matter of urgency to ensure that we avoid widespread toxic leeching from landfill with dire environmental and human consequences.

Beyond the issue of solar pv waste there are also significant problems around battery waste from associated renewable storage products, which only last about fifteen years.[21] These products contain lithium and lead, both again, toxic to the environment and also to humans.

This is a substantial and growing matter of national environmental significance. As such a compulsory and specific management scheme for this category of waste is needed. At present there is just one solar pv recycling facility in the country, based in Adelaide and of very limited capacity.[26]

With sufficient technological investment and know-how there is also a wider economic opportunity to establish a domestic recycling industry, with the potential for jobs as well as the potential to extract and re-use expensive rare earth minerals.[29]

There must be in response to this emerging crisis, a clear, well-funded and mandatory scheme should be incorporated into the Act. The fact remains this is an issue of national environmental significance and it needs an appropriate response within the framework of the nation's principle piece of legislative architecture that deals with such matters.

This issue cannot be managed in a voluntary or self-regulating or state-based fashion. This waste is easily transported to be disposed of illegally; the consequences of this practice becoming widespread could be disastrous at the national level.

A robust and well-considered national regulatory scheme is imperative to prevent potentially disastrous environmental and human health consequences.

The EPBC Act is Australia's national environmental law and it is our best option to act quickly and decisively to thoroughly manage this issue.

[29] https://www.forbes.com/sites/natalieparletta/2019/11/21/rare-earth-minerals-could-be-sourced-through-outdated-smart-phones-batteries-wind-turbines/#589547a112cc

4) Windfarm Operators and Bird Deaths

It is also my submission that all windfarm operators be required by law to collect data and submit an annual audit of all bird species impacted by their wind turbines. Operators must record the total number of birds and other animals (including flying foxes and bats) killed by each wind turbine over the course of each year. Once submitted by the prescribed deadline and verified, each audit of bird kills and injuries should be made publically available and published on the Department of Environment website.

Estimates vary substantially on the number and species of birds killed by wind turbines. There is no reliably accepted data available as monitoring is difficult to perform and piecemeal.

Some estimates include:

Approximately 1 bird per turbine per year. [30]
Two birds per year per turbine.[31]
Ten birds per turbine per year at Australia's largest wind farm. [32]

Regardless, there is absolutely no doubt that windfarms kill birds.

It is acknowledged by the most extensive study into bird deaths by windfarms that several endangered species are killed by some Tasmanian windfarms.[33]

A reporting obligation would be fairly simple to carry out and inform the public of the true impact of windfarms on wildlife. It also informs one of the purposes of the Act for the Department to assess developments, namely the protection of threatened or migratory species.

A national reporting scheme would give our environmental regulators, researchers and governments a better idea of how best to manage this issue by requiring the collection and reporting of a national dataset from a network of sites across Australia.

[30] https://newmatilda.com/2013/10/29/do-wind-farms-really-kill-birds/
[31] https://www.theguardian.com/environment/2019/aug/04/do-windfarms-kill-birds-how-australia-can-limit-the-impact-on-threatened-species
[32] https://www.theaustralian.com.au/nation/nation/wind-farm-turbines-take-toll-on-birds-of-prey/news-story/2168dc39a9fa855e94bb886674e46c78
[33] https://support.ala.org.au/support/solutions/articles/6000208422-wind-wind-farms-birds-and-bats

The Construction of Dams

Water security rightly dominates Australia's political zeitgeist. Drought is a part of Australian life and has been for hundreds of years. The need to drought proof our country in the face of record high population growth is critical. It is for this reason that the construction of dams is a core political and infrastructure concern as well as an important environmental concern. Without water, and appropriate water management, the natural environment quickly becomes barren and uninhabitable. Dams are not an inherently destructive development. Not only can they provide clean energy in the form of hydro power, they can also ensure that local habitats are more manageable.

Dams have inadvertently played a significant role in the shaping of Australian environmental law for the best part of 40 years, most particularly the infamous Tasmanian Dams case, which ultimately led to the creation of the Environmental Protection Biodiversity Conservation Act and the COAG Heads of Agreement on environmental matters. Concerns around the potential over reach of the international affairs power stemming from this case were large. To allay concerns, the COAG Heads of Agreement on Environmental Issues was drafted which gave the Commonwealth Government power over matters deemed to be of national environmental significance. [34]

Whilst in the first instance this may seem common sense, these triggers are in practice so broad as to significantly limit the scope for sensible development. As with all overbroad legislation, particularly drafting like that in the EPBC Act which has no explicit exceptions, the clauses can be used to frustrate development or practices outside the policy scope intended for the law.

Ideologically driven activism should not be given a licence to endlessly disrupt projects which are otherwise environmentally sound. Dams are a national priority and should only be assessed with appropriate state laws. Another layer of administration only gives action to activists, whose concern is with development itself rather than substantive environmental impact.

The Nathan Dam case in 2004 demonstrates how perverse the outcomes delivered by the Act can be because of its limitless scope. A court case with respect of the dam began and the substantive discussion which went to the full court of the Federal Court turned on the word impact. It was ultimately upheld and substantively legislated into the EPBC that impact was a broad concept which could be upheld on a small yet tenuous link of a project to a trigger . The dam was declared a controlled action in 2008 and was not approved until 2017. This is an utter absurdity that demonstrates how sclerotic green activism has been allowed to flourish by the overbroad provisions of the Act, simply to slow down and frustrate demonstrably worthwhile projects. The dam was ultimately approved, yet was held up for almost 15 years

[34] http://www.austlii.edu.au/au/journals/UNSWLJ/2005/41.html#Heading35

due to green tape and ideologically driven judicial activism which was allowed by the provisions of the Act.[35]

It is for this reason that dams should be specifically excluded from the EPBC Act. State governments do not need another reason to not build dams. The fact that sensible projects, which have been through rigorous environmental approvals at the state level, can be shut down for years at a time due to some tenuous link to one of the triggers available in the Act is ludicrous.

Given the importance of managing water storage for the twin issues of drought and growing population, coupled with the fact that dams also help ensure appropriate habitat management – mean that the status quo is unacceptable.

Important dam projects have often underpinned economic recovery after times of strife and war. Lake Hume and Lake Eildon dams are nearing 100 years old and helped national economic recovery after the First World War. The now infamous Snowy Mountains Hydro Scheme did the same for the country after the Second World War. Dams foster growth throughout their life cycle, from construction to the ongoing benefits of irrigation, cropping and agriculture. It is impossible to have an advanced economy and society without them.

The EPBC Act must have an exception around the creation of essential water infrastructure, particularly dams. Projects are already subject to rigorous environmental assessment at the state level, and there is no need to have further, needless bureaucracy or for projects to be held up for decades because of tenuous environmental links to a protected entity – this is unacceptable. It is for this reason that a specific exemption around dams and other critical water infrastructure must be worked into the Act.

[35] http://envlaw.com.au/nathan-dam-case/

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