

Market Makers

Analysis of PwC's report 'A Nature-positive Australia'

The Australian Government has provided no economic or environmental justification for its Nature Repair Market (NRM).

Instead, it has relied on a report by consultants PwC to promote the economic benefits of the NRM.

The PwC report is not only unrelated to the NRM, it has significant conceptual and methodological flaws, and undermines the government's case for a national biodiversity market.

Discussion paper

Matt Saunders

Polly Hemming

June 2023

ABOUT THE AUSTRALIA INSTITUTE

The Australia Institute is an independent public policy think tank based in Canberra. It is funded by donations from philanthropic trusts and individuals and commissioned research. We barrack for ideas, not political parties or candidates. Since its launch in 1994, the Institute has carried out highly influential research on a broad range of economic, social and environmental issues.

OUR PHILOSOPHY

As we begin the 21st century, new dilemmas confront our society and our planet. Unprecedented levels of consumption co-exist with extreme poverty. Through new technology we are more connected than we have ever been, yet civic engagement is declining. Environmental neglect continues despite heightened ecological awareness. A better balance is urgently needed.

The Australia Institute's directors, staff and supporters represent a broad range of views and priorities. What unites us is a belief that through a combination of research and creativity we can promote new solutions and ways of thinking.

OUR PURPOSE - 'RESEARCH THAT MATTERS'

The Institute publishes research that contributes to a more just, sustainable and peaceful society. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them.

The Institute is wholly independent and not affiliated with any other organisation. Donations to its Research Fund are tax deductible for the donor. Anyone wishing to donate can do so via the website at <https://www.australiainstitute.org.au> or by calling the Institute on 02 6130 0530. Our secure and user-friendly website allows donors to make either one-off or regular monthly donations and we encourage everyone who can to donate in this way as it assists our research in the most significant manner.

Level 1, Endeavour House, 1 Franklin St
Canberra, ACT 2601

Tel: (02) 61300530

Email: mail@australiainstitute.org.au

Website: www.australiainstitute.org.au

ISSN: 1836-9014

Summary

The Australian Government is developing a national voluntary biodiversity market with the aim of improving biodiversity outcomes across Australia. The 'Nature Repair Market' (NRM) would be based on a system of tradeable biodiversity certificates.

Also dubbed 'Green Wall Street' by Minister for the Environment and Water, Tanya Plibersek, the NRM is the centrepiece of the government's environment policy and has been promoted as a means to drive private investment in the restoration of Australia's landscapes and ecosystems.

Minister Plibersek has justified the need for the NRM because the government cannot 'afford' or 'foot the bill' to protect and restore Australia's environment. She has also suggested that the NRM could "unlock AU\$137 billion to repair and protect Australia's environment by 2050".

This figure is sourced from a report by the consultancy PwC titled *A nature-positive Australia: The value of an Australian biodiversity market*. The report was not commissioned by the Australian Government but has been referenced repeatedly by Minister Plibersek and the Department of Climate Change, Energy, the Environment and Water (DCCEEW). The Australian Government does not appear to have carried out any modelling relating to the NRM itself or verified the findings of the PwC report.

This paper assesses the claimed benefits of the Nature Repair Market made by Minister Plibersek and DCCEEW, and presents an analysis of the PwC work underpinning the claims. It finds that *A nature-positive Australia* is misleading on a number of fronts and is entirely unrelated to the Nature Repair Market.

Despite the title of the report, at no time does PwC define what 'nature-positive' means or what a 'nature-positive Australia' looks like. There is no methodology for the modelling PwC refers to, and there is no justification for the figures presented in the report or the conclusions it draws.

Critically, the \$137 billion figure presented in the PwC report seems to be in 2050 dollars. That is, PwC, has inflated the figures to what they *would be* in 2050. It is not an accurate representation of what the financial flows it presents are in 2023 or will be in the near future.

Adjusting the estimates to 2023 dollars lowers the total financial flows to just \$70 billion, and 'market-based' flows down to \$18 billion. The \$9 billion that PwC suggests will flow to biodiversity offsetting (the nearest approximation of the NRM in the report) in 2050 is reduced to \$5 billion.

While the PwC report claims to forecast ‘market benefits’ of a biodiversity market, the research is simply measuring the financial flows to biodiversity using an OECD categorisation framework, a significant share of which are not related to ‘markets’ at all, such as direct government intervention and environmental spending by NGOs and charitable donations. To be clear, PwC has not modelled the economic benefits of the government’s Nature Repair Market, nor environmental markets in general.

Even though the PwC report is used explicitly by Minister Plibersek and DCCEEW to justify the need for the NRM, it does not make a compelling economic argument for a biodiversity market, suggesting that market approaches, such as biodiversity offsetting, should only be employed as an “absolute last resort”. PwC appears to indicate that the government can achieve better environmental outcomes by focusing less on market-mechanisms such as the Nature Repair Market and more on government intervention and public spending.

To date, the Australian Government has failed to provide any economic or environmental justification for its proposed Nature Repair Market, preferring to promote a report by a private consultancy.

Rather than validating the government’s argument that the NRM is a robust environmental policy, the *A nature-positive Australia*, in fact, dramatically undermines it. If the government is to proceed with Green Wall Street, a critical first step would be to carry out credible economic analysis.

Introduction

In December 2022 the Albanese Government released its *Nature Positive Plan*,¹ in response to the 'Final Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999', also known as the Samuel Review. The Samuel Review found that Australia's environmental protection laws have failed to stop the rapid decline of ecosystems across the country.²

A key plank of the *Nature Positive Plan* is a framework for a voluntary market to improve biodiversity outcomes via the trading of biodiversity certificates. The 'Nature Repair Market' (NRM), also dubbed 'Green Wall Street' by Minister for the Environment and Water, Tanya Plibersek, is designed to encourage private investment in the restoration of Australia's landscapes.^{3,4}

In a March 2023 press release announcing the introduction of the NRM to parliament, Minister Plibersek, quoted a report by the consultancy PwC and claimed the NRM could "unlock AU\$137 billion to repair and protect Australia's environment by 2050".⁵

The Nature Repair Market forms part of our Nature Positive Plan to protect more of what's precious, repair more of what's damaged and manage nature better for the future.

A recent PwC Report found a biodiversity market could unlock AU\$137 billion to repair and protect Australia's environment by 2050.

In her announcement, the Minister went on to list three examples of restorative activities the NRM legislation could enable, but provided no explanation as to how the market will operate, apart from noting that the Clean Energy Regulator (the agency currently administering Australia's troubled carbon offset scheme) will have monitoring and enforcement powers. The Minister's press release does not link to the

¹ Department of Climate Change, Energy, the Environment and Water (2022) *Nature Positive Plan: better for the environment, better for business*, <https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf>

² Samuels (2020) *Final Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*, <https://epbcactreview.environment.gov.au/resources/final-report>

³ Parliament of Australia (2023) *Nature Repair Market Bill 2023*, https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bld=r7014

⁴ Slezak (2022), 'Nature credits' could make Australia the 'Green Wall Street' for the world, Tanya Plibersek says, <https://www.abc.net.au/news/2022-09-01/australia-hopes-to-create-green-wall-street-with-credit-scheme/101392808>

⁵ DCCEEW (2023), *Nature Repair Market legislation introduced to parliament - 29 March 2023*, <https://www.tanyaplibersek.com/media/media-releases/nature-repair-market-legislation-introduced-to-parliament/>

proposed legislation itself. Instead, it links to the PwC report. However, the PwC work was not commissioned by the government and does not model the NRM policy.^{6 7}

This paper analyses the claims made by both the Minister and PwC to justify the NRM. This paper does not provide an analysis of the NRM itself, which can be found in previous Australia Institute analysis.^{8 9}

We provide an overview of how PwC derived its figure of \$137 billion and unpack the calculations and definitions being used in the PwC report. Through this exercise we expose significant methodological and conceptual flaws in the PwC report, including a complete absence of modelling methodology, highly inflated figures and conflation of financial flows with economic benefits.

Despite calls for clarity on the purpose of the NRM, it is still overwhelmingly unclear what it is and what it is trying to achieve.

⁶ PwC (2022), *A nature-positive Australia: The value of an Australian biodiversity market*, <https://www.pwc.com.au/environment-social-governance/nature-positive-australia-value-of-australianbiodiversity-market.html>

⁷ Commonwealth of Australia (2023) Proof Committee Hansard, Environment and Communications Legislation Committee, Tuesday 23 May 2023, https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/26894/toc_pdf/Environment%20and%20Communications%20Legislation%20Committee_2023_05_23.pdf;fileType=application%2Fpdf#search=%22committees/estimate/26894/0000%22

⁸ Hemming, Campbell (2023) *Beyond Repair? Comment on the Draft Nature Repair Market Bill (2023)*, <https://australiainstitute.org.au/wp-content/uploads/2023/03/P1356-Beyond-Repair.pdf>

⁹ Hemming, Campbell, Denniss (2022), *Shorting the Environment: Submission to the proposed voluntary national biodiversity market*, <https://australiainstitute.org.au/wp-content/uploads/2022/11/P1300-Shorting-the-environment.pdf>

PwC report

Published in 2022, *A Nature-positive Australia: The value of an Australian biodiversity market*, explores the potential for government, landowners, First Peoples, industry, community, scientists, and philanthropic partners to address Australia's biodiversity crisis through a biodiversity market. The report has been referenced repeatedly by Minister for the Environment and Water, Tanya Plibersek, and DCCEEW as evidence that the Nature Repair Market is a robust policy, one that would “unlock...financial flows” in order to “repair and protect Australia's environment”.^{10 11 12}

Despite these claims, the PwC report does not mention the NRM policy. Nor is there any indication that the aim of the report is to outline the impacts of the NRM or similar policies.

The PwC report was not commissioned by the Australian Government. In a May 2023 Senate Estimates hearing, a Deputy Secretary of DCCEEW stated that:

We did not commission or pay for that report. It came out of a conversation with a principal at PwC in terms of, 'Here's something that would be useful for us to know'.¹³

Despite being independently published by PwC based on a conversation with DCCEEW, the report has become the government's go-to 'big number' to support its approach.

While the term 'nature positive' is in the PwC report's title, the report does not define what is meant. Its key finding is that a biodiversity market could “unlock” \$AU137 billion in financial flows to “advance” biodiversity outcomes by 2050 (Figure 1 below). While the government rhetoric implies that \$137 billion will be driven by the NRM, in

¹⁰ DCCEEW (2023), *Nature Repair Market legislation introduced to parliament - 29 March 2023*, <https://www.tanyaplibersek.com/media/media-releases/nature-repair-market-legislation-introduced-to-parliament/>

¹¹ Commonwealth of Australia (2023) Proof Committee Hansard, Environment and Communications Legislation Committee, Tuesday 23 May 2023, https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/26894/toc_pdf/Environment%20and%20Communications%20Legislation%20Committee_2023_05_23.pdf;fileType=application%2Fpdf#search=%22committees/estimate/26894/0000%22

¹² DCCEEW (2023) Nature Repair Market, <https://www.dcceew.gov.au/environment/environmental-markets/biodiversity-market>

¹³ Commonwealth of Australia (2023) Proof Committee Hansard, Environment and Communications Legislation Committee, Tuesday 23 May 2023, https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/26894/toc_pdf/Environment%20and%20Communications%20Legislation%20Committee_2023_05_23.pdf;fileType=application%2Fpdf#search=%22committees/estimate/26894/0000%22

PwC’s report, this amount is actually spread across a range of activities that have little or no link to nature markets like the NRM proposal.

No modelling or verification of the PwC report has been undertaken by the relevant government department, despite the fact that it contains a number of methodological and conceptual flaws that seriously undermine the quality of the research, in particular the \$137 billion impact.^{14 15}

PWC UNDERMINES THE ARGUMENT FOR A MARKET

The key finding of the PwC report is that a biodiversity market could unlock \$AU137 billion in financial flows to biodiversity outcomes by 2050. The PwC report breaks down this top-line figure, ultimately showing its irrelevance to the NRM. The \$137 billion of financial flows are spread across seven activities as shown in Figure 1 below.

Figure 1: The PwC estimates of the ‘value’ of biodiversity

Benefit category	Benefit type	Specific benefit description	Estimated value in 2050
Direct value (Financial flows to biodiversity)	Investment	Private biodiversity, conservation and natural capital investments	\$78 bn
		Sustainable commodities	\$5 bn
	Expenditure	Conservation NGOs and environmental charities	\$11 bn
		Government expenditure and subsidies	\$8.5 bn
		Environmental water trading	\$1.6 bn
	Market-based instrument transactions	Forest carbon offsets	\$24 bn
		Biodiversity offsets	\$9 bn
Indirect-use values		Carbon co-benefits	
		Nutrient cycling	
		Flood prevention	
		Water cycle	
		Pollination by bees	
		Prevention of soil erosion	
		Air purification	
Non-use values		Existence values	
		Bequest values	

Source: PwC (2022) *A nature-positive Australia: The value of an Australian biodiversity market*, p.15

¹⁴ PwC (2022), *A nature-positive Australia: The value of an Australian biodiversity market*, <https://www.pwc.com.au/environment-social-governance/nature-positive-australia-value-of-australianbiodiversity-market.html>

¹⁵ Commonwealth of Australia (2023) Proof Committee Hansard, Environment and Communications Legislation Committee, Tuesday 23 May 2023, https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/26894/toc_pdf/Environment%20and%20Communications%20Legislation%20Committee_2023_05_23.pdf;fileType=application%2Fpdf#search=%22committees/estimate/26894/0000%22

The figures on the right-hand side of Figure 1 sum to \$137 billion. While the PwC reports this as the “value” of “financial flows to biodiversity”, most of the activities are not market activities or have little relevance to voluntarily tradeable certificates.

For example, government expenditure and subsidies of \$8.5 billion is the direct opposite of ‘markets’. It is direct government intervention. As the PwC report says this non-market activity is the most direct way of having impact on biodiversity outcomes:

Government expenditure and subsidies for biodiversity in Australia are defined as federal and state government expenditures with the most direct impact on biodiversity, through targeted threatened species conservation (lower limit) or budgetary spending on conservation and the environment (upper limit).

Similarly for the \$11 billion contribution by conservation NGOs and environmental charities, there is nothing to suggest this will be transacted through any type of market or involve any kind of tradeable certificate.¹⁶ It is simply an estimate of the 2050 income of environmental charities that mention biodiversity in their explanation of charitable purpose.¹⁷

The biggest financial flow in Figure 1 is the \$78 billion from *Private Biodiversity, Conservation and Natural Capital Investments*. This does appear to involve markets, but not the ‘tradeable certificate’ type of market the NRM is attempted to build. As the PwC report notes these types of investments:

...include BCNC-themed bonds, loans, debt and equity, including sustainability linked debt issuances and sustainability-linked loans, as well as impact investing, such as community finance and green bonds.

These are investments that likely involve financial markets and include the apparent “greening” of the financial system with green bonds but nowhere does the PwC report relate these activities to tradeable certificates, the kind the NRM policy is focused on. Green bonds themselves often have nothing to do with biodiversity or environmental conservation.

There is no evidence that this \$78 billion, to the extent that it is a reliable forecast, has any relevance to the NRM legislation at all.

The only genuine market-based activities the PwC report points to are (in 2050 values):

1. Environmental water trading: \$1.6 billion
2. Forest carbon offsets: \$24 billion
3. Biodiversity offsets: \$9 billion

¹⁶ PwC p. 16

¹⁷ PwC p. 16

A total of \$34.6 billion or only 25 per cent of the total flows are the only flows that PwC report directly relates to tradeable market activity.

To the extent that water trading and carbon offsets are existing features of Australia's environment policy, the only relevant part of the PwC report to the NRM policy is the \$9 billion on biodiversity offsets, or 6.5 per cent of the total \$137 billion claimed impact.

The fact that only 25 per cent of the 'benefits' come from markets, and only 6 per cent from biodiversity markets (which are compliance markets, not voluntary markets like the NRM) means little will be achieved from the Government legislation that focuses on such a small proportion of overall benefits. Conversely, the PwC estimates are clear that biodiversity outcomes would be greatly improved if the government focused on the pieces of the overall biodiversity approach that are not based on the kinds of new markets the legislation is focusing on.

Markets are an “absolute last resort”

As discussed, while the PwC \$137 billion figure is presented as an estimate of “direct flows to a biodiversity market”,¹⁸ in reality it relates overwhelmingly to *non-market* flows.

For the most part, the flows being promoted by the PwC report are not part of a biodiversity market, but a range of investments, government policies, subsidies, spending, laws and regulations, along with philanthropic endeavours to avoid and minimise negative biodiversity outcomes.

The confusion the PwC report has around what constitutes market activity is well captured in the following quote (emphasis added):

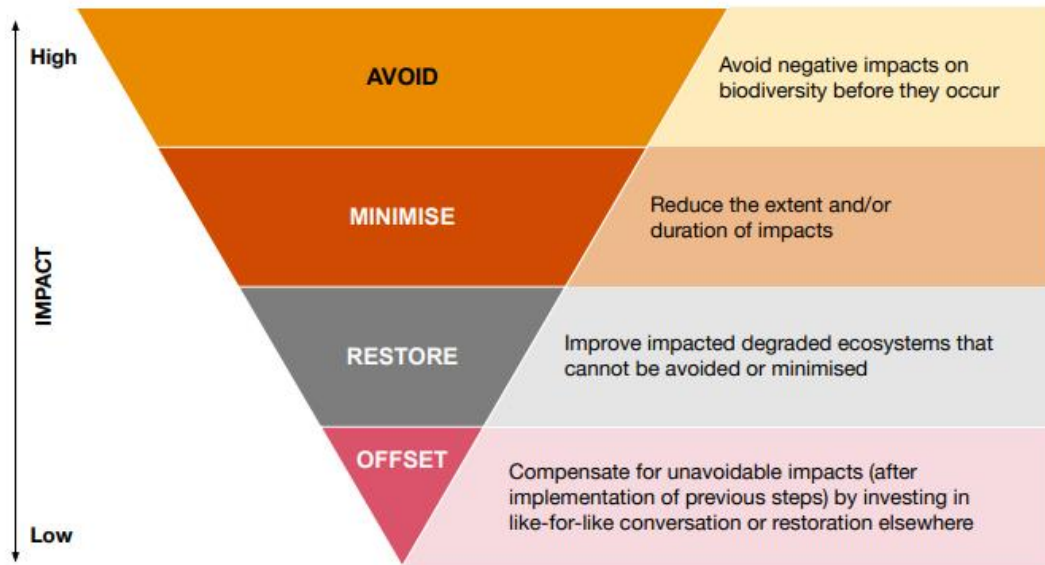
Biodiversity **market mechanisms** should be structured around the 'mitigation hierarchy', where **market-based tools** are only employed as an absolute last resort, after all efforts have been made to (first) avoid, (second) minimise and (third) mitigate negative impacts to biodiversity.¹⁹

The PwC quote makes clear that despite labelling all the activities in Figure 1 as 'market mechanisms', market tools should only be used as a last resort after all the non-market activities have been undertaken (this is illustrated in Figure 2).

¹⁸ p.16

¹⁹ p.8

Figure 2: Mitigation hierarchy as presented by PwC



Source: PwC (2022) *A nature-positive Australia: The value of an Australian biodiversity market*, p.8

To the extent the PwC report *does* describe a biodiversity market, very little relates to the kind of market activities the NRM is focused on.

PwC only describes the biodiversity market in relation to offsetting (and also suggests offsetting should be avoided). Biodiversity offsetting is carried out when mining companies or developers have a regulatory obligation to ‘offset’ environmental damage caused by their land clearing.

The government has suggested that the NRM will be a ‘voluntary’ market, but the PwC report provides no evidence at all that there are, or will be, any flows going towards a voluntary biodiversity market. Nowhere in the report is there an estimate of ‘demand’ for voluntary nature certificates or credits.^{20 21}

While it is nice to think that a voluntary nature market will encourage voluntary investment in conservation and environmental repair, the PwC report makes no argument for this model, further demonstrating how irrelevant it is to the Nature Repair Market.

²⁰ A point of much conjecture itself. For example, see p, 25 Parliament of Australia, 2023, *Bills Digest No. 72 2022-23 - Nature Repair Market Bill 2023 [and] Nature Repair Market (Consequential Amendments) Bill 2023*
https://parlinfo.aph.gov.au/parlInfo/download/legislation/billsdgs/9126108/upload_binary/9126108.pdf

²¹ Commonwealth of Australia (2023) Proof Committee Hansard, Environment and Communications Legislation Committee, Tuesday 23 May 2023,
https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/26894/toc_pdf/Environment%20and%20Communications%20Legislation%20Committee_2023_05_23.pdf;fileType=application%2Fpdf#search=%22committees/estimate/26894/0000%22

FLOWS ARE NOT ‘BENEFITS’

It is not unreasonable to assume that, when Minister Plibersek says “a biodiversity market could unlock AU\$137 billion to repair and protect Australia’s environment by 2050” that this has something to do with positive economy-wide or environmental benefits.

The Department’s own *Policy Impact Assessment (PIA)* of the Nature Repair Market Bill points out on page 15 that the \$137 billion in financial flows is not an estimate of the economic impacts of the policy in terms of GDP.²²

The PIA says:

It is challenging to estimate the net economic benefits of the NRM given that participation is voluntary, the adoption rate, nature, and geographic spread of projects is not yet known, a market in biodiversity certificates does not yet exist, and the delivery of outcomes from the first tranche of projects will be at least three to five years away.

The financial flows PwC has assigned a value to in Figure 1 do not necessarily capture the ‘value’ of biodiversity, and they are not an estimate of economic impact. ‘Direct’ flows simply describe the most direct form of transaction. They describe the movement of money to and from something with no intermediaries and no financial transformation in the process (they are also the easiest to follow and measure or estimate).

PwC has estimated how much money could be directed to a range of mechanisms that could benefit biodiversity, but never clearly defines what the financial flows are, much less any benefit to biodiversity. There are no detailed explanations of exactly where this money comes from or why. ‘Government expenditure’, of \$8.5 billion, for example, could include offices and infrastructure.

PwC provides suggestions as to why government, businesses and NGOs may spend money on the environment in a way that conserves and restores biodiversity but no evidence that they actually *will*, what the expenditure will look like or whether the sums would be in any way significant.

Given the long history in Australian politics of using complex models to predict uncertain future economic impacts of policy changes it strange neither PwC nor the government has attempted to estimate the economic impacts of the policy. Perhaps they did but the benefits were small. Either way there is no publicly released estimate of the economic impacts of the policy, and it is disingenuous of the government to conflate financial flows with outcomes as a way to promote its policy.

²² DCCEEW (2023) Final Policy Impact Assessment for the Nature Repair Market Bill 2023

NO MODELLING METHODOLOGY

PwC provides minimal description of the methodology it has used to estimating the purported benefits out to 2050.

Modelling uncertain future financial flows is a difficult process often requiring the use of complex models. To aid the judgement of the quality of the forecasts similar reports to the PwC's would typically include a detailed section on the modelling methodology.

The PwC framework is based on a single reference to an OECD report. Not a description or summary of the OECD methodology, just a reference to it. Readers of the PwC report are left to undertake significant additional research to understand how the PwC calculated the estimated financial flows out to 2050.

An analysis of the OECD report used by PwC for their modelling methodology titled *A Comprehensive Overview of Global Biodiversity Finance*, provides little insight into how the PwC modelled the \$137 billion impact in 2050.

While it is clear that the categorisation of various biodiversity efforts is consistent across the OECD and PwC reports, the OECD report simply adds up existing and historical biodiversity programs, often referencing other reports, but does not forecast or model any future efforts.

The OECD paper is just a historical analysis of existing data sources while the PwC is a future forecast, yet it provides no details for a modelling methodology to predict future sustainability efforts. This means the only thing the OECD paper contributes to the PwC forecasting methodology is the categorisation framework of various sustainability efforts. Readers of the PwC remain in the dark as to how they forecast sustainability flows out to 2050 critically undermining the quality of their research.

The best that can be assumed from the PwC report about its forecasting methodology is that for each biodiversity activity shown in Figure 1, a back-of-the-envelope trend projection of these financial flows to 2050 is undertaken. Such an exercise is not what most consultants would consider to be modelling, and certainly has nothing to do with modelling a complex market of tradable biodiversity certificates.

The PwC report includes a few sentences on each of the quantified values in Table 1, but nothing that could enable a reader to reproduce or verify its calculations. The most likely figure is the \$11 billion of NGO spending. PwC write that in 2020 relevant income to environmental charities was \$326.9 million, a figure that would grow to \$11 billion by 2050. This was "based on growth in the share of these charities' income compared to total [registered] charity income."

For \$326.9 million to grow to \$11 billion per year by 2050, it needs to increase by \$356 million each and every year, or to grow at a compounding rate of 12.45 per cent. Neither of these growth trajectories seem plausible.

\$137 BILLION...IN 2050

A critical, but overlooked aspect of *A Nature-positive Australia* is that PwC reports the financial flows as what they would be in 2050. Not what they are in 2023 or what they will be in 2024 when the Nature Repair Market will be implemented.

It is common practice for consultants in their economic modelling reports to present cumulative impacts since the results are much larger. However, when doing this they will also typically accumulate over the years using the discounted cash flows, so that each year's annual impact is in current prices and adjusted for the time value of money. The PwC report provide no explanation of what the 2050 impacts represent.

While it seems that the \$137 billion figure is “annual financial flows...by 2050” (p.13), elsewhere this is unclear. If the headline \$137 billion impact (in 2050 prices) is in fact an accumulation of annual impacts from now until 2050 then the annual financial flows to biodiversity could be as small as \$5.1 billion a year, in 2050 prices, or just \$2.6 billion a year in 2023 prices.

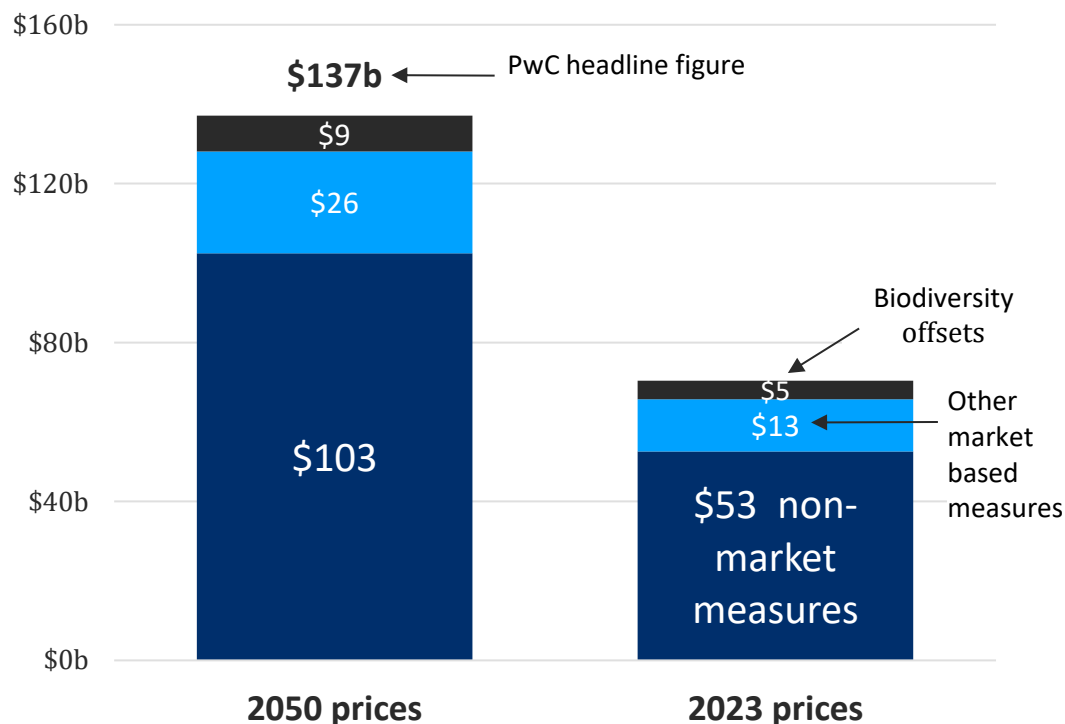
Assuming that the \$137 billion figure is the estimate for the year 2050, it is unclear whether this is in 2023 dollars or 2050 dollars. If the financial flows are presented in 2050 prices, this would grossly inflate the numbers throughout the whole report. Adjusting the estimates to 2023 dollar using an assumed annual inflation rate of 2.5 per cent greatly diminishes the headline figure of \$137 billion to just \$70 billion.

As discussed above, most of the \$137 billion is not related to, or representative of, environmental markets. At most only \$35 billion can be linked to environmental market mechanisms (including only \$9 billion on biodiversity market measures).

If this \$35 billion is in 2050 dollars, when adjusted to 2023 prices it shrinks down to \$18 billion (with biodiversity market measures going down to \$5 billion).

Figure 3 summarises the impact on the PwC results if they are reported in 2050 dollars and converted to 2023 dollars.

Figure 3: Nature Repair Market: converting potential 2050 dollars to 2023 dollars



Source: Analysis of PwC (2022) *A nature-positive Australia: The value of an Australian biodiversity market*

If presented in 2050 prices, the PwC results are little more than a marketing exercise. It serves no utility than to overstate the ‘benefits’ and importance of the biodiversity market to voters, investors and other stakeholders. PwC could have just as easily presented 2100 prices in *A Nature-positive Australia*. This would increase the forecast to \$471 billion, edging close to half a trillion dollars.

The important point is that presenting the results in 2050 prices would be for the most part an arbitrary decision to make the impacts look large. Common practice is to adjust future impacts to current prices at a rate greater than the assumed future inflation rate, known as the discount rate, to account for the time value of money. Adjusting the PwC impacts in this way would reduce the projected financial flows to biodiversity even further.

CONCLUSION

The Australian Government has not carried out any modelling or provided any evidence of why its proposed Nature Repair Market is needed nor how it will work.

The only justification put forward by the Minister for the Environment and Water, Tanya Plibersek, and the Department of Climate Change, Energy (DCCEEW) is a report by PwC Australia titled *A nature-positive Australia: The value of an Australian biodiversity market*, suggesting that the NRM could “unlock AU\$137 to repair and protect Australia’s environment by 2050”.

An analysis of the PwC report reveals the report itself is not only misleading, but it also bears no relevance to the NRM, and has significant methodological and conceptual flaws.

With a proper understanding of the PwC work and a correct presentation of the ‘modelled’ impacts it becomes clear that market-based tools, the kind envisaged by the Nature Repair Market, only have a small ‘last resort’ role to play in environmental policy and most of the predicted benefits come from non-market activities. To the extent that PwC does refer to biodiversity markets it is in relation to biodiversity offsetting, not voluntary purchases of biodiversity credits or certificates.

It is alarming that the government has promoted the Nature Repair Market so heavily without providing any basis for its existence. It is even more alarming that it does not have appeared to verify or unpack any of the claims being made in the PwC report, or carry out its own economic and environmental analysis.