

# Questionable integrity

## Non-additionality in the Emissions Reduction Fund's Avoided Deforestation Method



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**The Avoided Deforestation Method is responsible for more than 20 per cent of total Australian Carbon Credit Units (ACCUs) that have been issued under the Australian Government's Emissions Reduction Fund.**

However, the method **has significant integrity issues, and the ACCUs generated by avoided deforestation projects appear to represent non-additional abatement. This has implications for those purchasing ACCUs to meet climate targets,** including the Australian Government and the private sector.

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# Summary

**The Australian Government's \$4.5 billion Emissions Reduction Fund (ERF) purchases reductions in greenhouse gas emissions from a wide range of industries. Vegetation management in the land sector is a significant activity under the ERF, representing approximately 70 per cent of carbon abatement purchased by the government to date.**

Different methodologies relating to vegetation management have been developed, including the 'avoided deforestation' method, which provides Australian Carbon Credit Units (ACCUs) for the retention of specific areas of forest in Western New South Wales (NSW) that would otherwise be cleared. The abatement by these projects is described by the Clean Energy Regulator (the government body administering the ERF) as follows:

**"A project using this method helps to reduce the amount of greenhouse gas entering the atmosphere, because carbon remains stored in the trees as they grow, and the emissions that would have been created by clearing are avoided. The carbon stored in the trees is called carbon stock, while the net reduction in greenhouse gas emissions as a result of a project is called abatement."**<sup>1</sup>

Under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) (the Act), all ERF methods, including avoided deforestation, must meet statutory offsets integrity standards. These standards are meant to ensure the ACCUs issued to participating projects are real and additional.<sup>2</sup> Specifically, the offsets integrity standards require the following.<sup>3</sup>

- The methods must result in additional carbon abatement, being abatement that would not occur in the ordinary course of events without the incentive provided by the ERF;
- The emissions, removals and abatement that are estimated under the methods must be measurable and verifiable;
- The methods must ensure the carbon abatement that is credited is able to be used to meet Australia's climate change targets;
- The methods must be supported by 'clear and convincing evidence';
- The methods must account for any material emissions that occur as a consequence of offset projects; and
- The estimates, projections and assumptions used in the methods must be conservative.

This paper demonstrates that the avoided deforestation method fails to meet at least three of the six offsets integrity standards and is likely to be resulting in projects being issued ACCUs for not clearing forests that were never going to be cleared. Subsequently, those who have been buying ACCUs from avoided deforestation projects, including the Australian Government, are likely to have been buying what is colloquially known as 'hot air'.

## The avoided deforestation method's core assumption

The avoided deforestation method is based on the assumption that landholders who applied for and received a particular type of NSW land clearing approval, known as an Invasive Native Scrub Property Vegetation Plan (INS PVP), would always act on them and clear the relevant vegetation within 15 years. To be eligible under the method, the INS PVPs must have been issued between 2005 and 30 June 2010 and they must have authorised the permanent conversion of a native forest to grassland or cropland. The eligible INS PVPs only authorised the clearing of remnant native forests and pre-1983 regrowth native forests; other regrowth has historically been allowed to be cleared without government approval.

<sup>1</sup> Clean Energy Regulator (2018) *Avoided deforestation method*, [www.cleanenergyregulator.gov.au/ERF/Choosing-a-project-type/Opportunities-for-the-land-sector/Vegetation-methods/Native-forest-protection-\(avoided-deforestation\)](http://www.cleanenergyregulator.gov.au/ERF/Choosing-a-project-type/Opportunities-for-the-land-sector/Vegetation-methods/Native-forest-protection-(avoided-deforestation))

<sup>2</sup> Emissions Reduction Assurance Committee (2021). *Information Paper: Committee considerations for interpreting the Emissions Reduction Fund's offsets integrity standards Version 2.0 March 2021*

<sup>3</sup> *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), s 133.

Between 2005 and 30 June 2010, 257 INS PVPs were issued across NSW, with a combined treatment area of 2.09 million hectares. The vast majority (1.97 million hectares) of the clearing approved under these eligible INS PVPs relates to properties in the Western Local Land Services (LLS) region of NSW.

## A valuation of the validity of the method's core assumption

To test the validity of the avoided deforestation method's core assumption that the eligible INS PVPs would always be acted upon, we compared the historical rates of agricultural-related land clearing of remnant woody vegetation and pre-1983 regrowth in the Western LLS region to:

- the total approved treatment area under eligible INS PVPs in the Western LLS (the upper limit of the area that could be eligible under the method); and
- the areas (known as 'carbon estimation areas', or CEAs) over which credits have been issued to avoided deforestation projects in the Western LLS (the lower limit of the area that could be eligible under the method).

The clearing data were derived from the NSW Statewide Landcover and Tree Study (SLATS). Two average historic clearing rates were used: the rate of agriculture-related clearing between 1988 and 2008; and the rate of agricultural-related clearing between 2009 and 2013. These rates were selected because of the time periods reported in SLATS and to exclude the period in which projects became active under the ERF (2014 onward).<sup>4</sup> It was conservatively assumed for the purposes of the analysis that 65 per cent of all reported woody vegetation clearing was remnant and pre-1983 regrowth.<sup>5</sup>

In order for the core assumption of the avoided deforestation method to be valid and meet the offsets integrity standards, analysis of these data should show that it was likely that the total approved INS treatment area and the aggregate of the CEAs would be cleared within 15 years if the historic rates of clearing continued. Instead, the data suggest that, for these areas to be cleared within 15 years, the rates of clearing would need to have increased by an implausible amount.

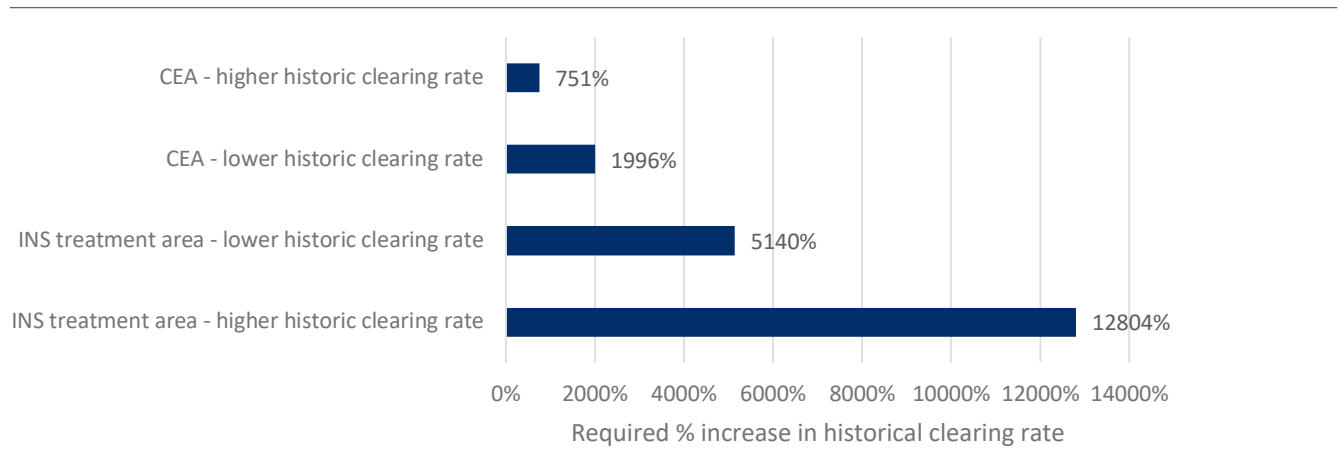
The results of the analysis are summarised in Figures A1, A2 and A3. Figure A1 shows that, for the avoided deforestation method's core assumption to be true, the rate of agriculture-related clearing would need to have increased by between 751 per cent and 12,804 per cent.

Figure A2 presents this in an alternative way – the number of years it would take to get through the relevant approved clearing based on historic average clearing rates. It would take between 128 to 1,936 years to clear the amount of forest in question at the historic clearing rates; yet the method assumes these areas would be cleared in 15 years. Whichever way the data are presented, it is clear the avoided deforestation's assumption that the areas would be cleared in the counterfactual is not plausible.

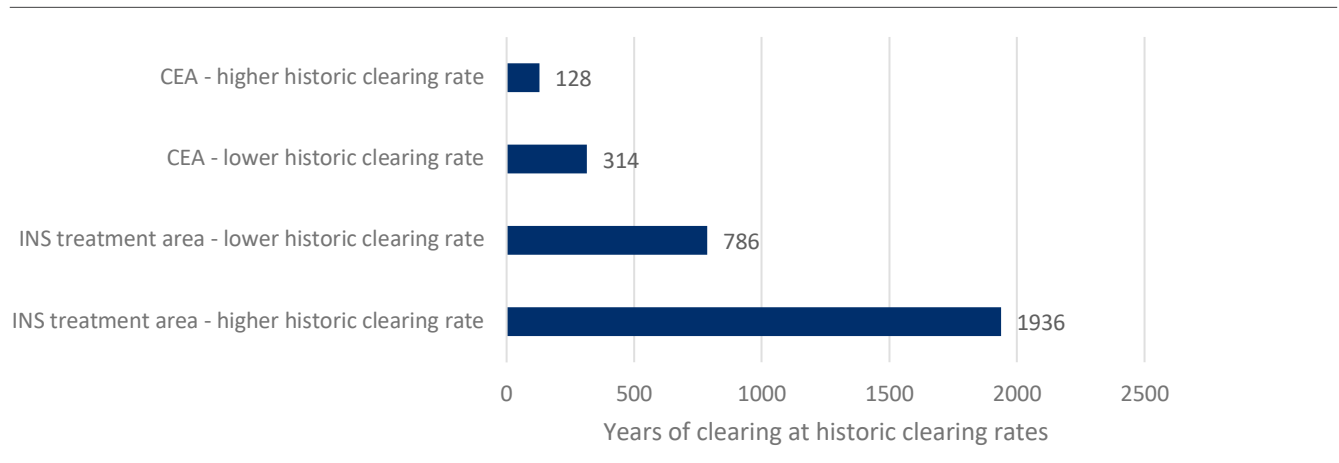
<sup>4</sup> One project commenced in late 2013, then 52 (of 63) were registered over 2014 and 2015.

<sup>5</sup> SLATS reports total agriculture-related woody vegetation clearing for the Western LLS but does not report the clearing rate for remnant and pre-1983 regrowth. The assumption that 65 per cent of total agriculture-related clearing was of remnant woody vegetation and pre-1983 regrowth was derived from the Australian Government's deforestation statistics for the Western LLS region over the period 2015-2019.

**Figure A1. Required percentage increase in historic agriculture-related clearing rates for the avoided deforestation method's clearing assumption to be true**



**Figure A2. Number of years of clearing required to get through the relevant approved clearing**



Figures A1 and A2 Source: Department of Planning, Industry and Environment (2021). *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and author estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice*. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98. Commonwealth of Australia, Canberra.

Figure A3 demonstrates the implausibility of the method's core assumption by comparing the actual rates of clearing of the relevant vegetation for agriculture in the Western LLS to the rate of clearing required to clear the CEAs over 15 years. For the method's assumption to be valid, the clearing rate in the Western LLS in the absence of the projects in 2019 would have to have been almost 27,600

hectares per year, and the average clearing rate over the period 2014-2019 would have to have been 25,739 hectares per year. For comparison, the actual estimated average clearing rate in the Western LLS over this period was 4,372 hectares per year. To put this in perspective, in 2019, total clearing of all woody vegetation for agricultural purposes across the whole of NSW was 23,400 hectares.

**Figure A3. Historic clearing rates vs clearing rates assumed under the avoided deforestation method\***

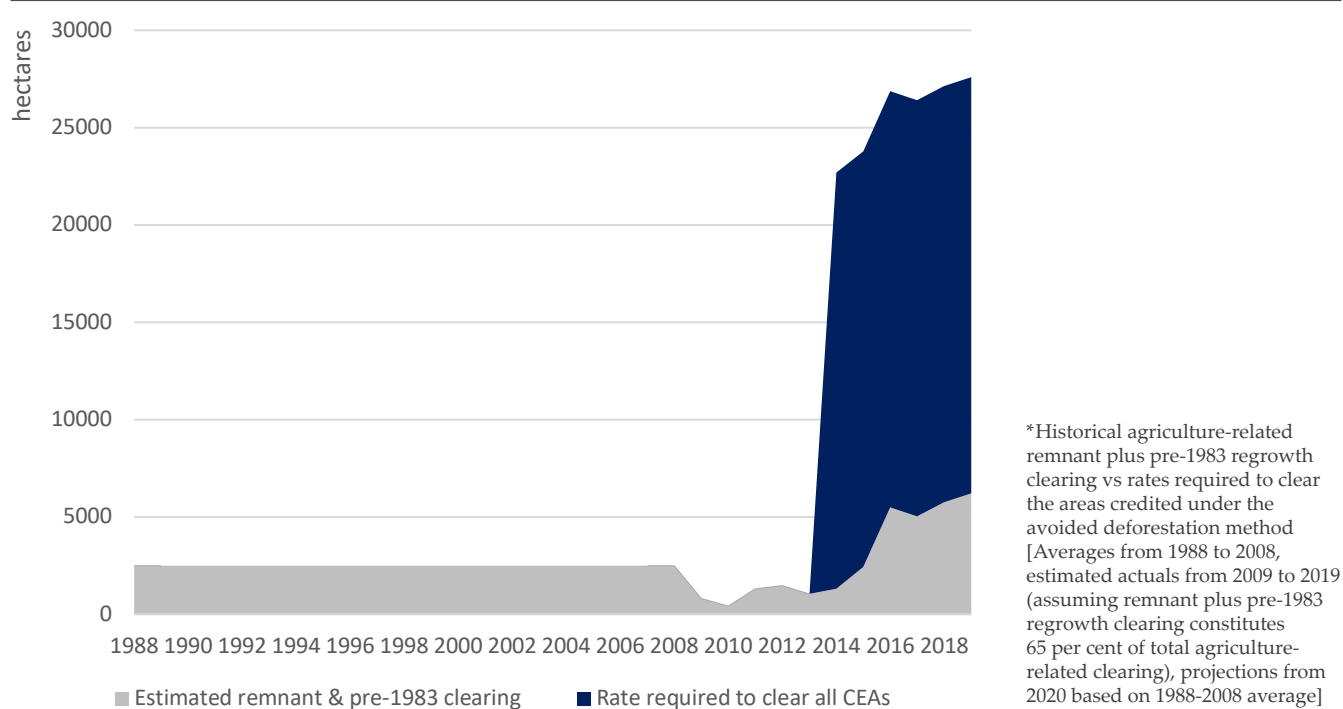


Figure A3 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and authors' estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98*. Commonwealth of Australia, Canberra.

## Implications of Analysis

The results of the analysis demonstrate that the avoided deforestation method does not satisfy the following offsets integrity standards:

- it is not based on clear and convincing evidence;
- the main assumption that underpins the method is not conservative; and
- the method is likely to be predominantly crediting non-additional abatement.

The method should be revoked immediately.

The deficiencies in the method and the fact it is crediting non-additional abatement brings into question the overall integrity of the ERF and its ability to help Australia meet its climate targets.

The avoided deforestation method is currently responsible for more than 20 per cent of the total number of ACCUs that have been issued under the ERF (roughly 22 million of 100 million ACCUs). To date, the Australian Government has also contracted to buy 26.3 million ACCUs from avoided deforestation projects for approximately \$310 million.

Revoking the method will prevent the registration of new avoided deforestation projects. However, it will not stop existing projects from continuing to receive ACCUs over the remainder of their 15 year crediting period. To prevent more government and private money from being wasted on low integrity credits, steps should be taken to stop the existing projects from receiving any further ACCUs.

At the very least, the Australian Government should take steps to warn companies and individuals that buy ACCUs of the integrity problems with avoided deforestation projects and the risk that the ACCUs do not represent real and additional abatement.

Finally, the manifest integrity problems with the avoided deforestation method raise questions about how the method was made and why steps have not been taken to address them.

The deficiencies in the method and the fact it is crediting non-additional abatement **brings into question the overall integrity of the ERF.**

# Introduction

**The Australian Government's Climate Solutions Fund, more often referred to by its previous name, the Emissions Reduction Fund (ERF), is a \$4.5 billion scheme aimed at reducing Australia's emissions.**

A legacy of the Abbott Government's 2014 'Direct Action' policy, the ERF is administered by the Clean Energy Regulator (CER) and pays businesses, landholders and individuals to reduce emissions by undertaking emissions avoidance or sequestration projects.

Businesses and individuals that participate in the ERF identify and develop offset projects that avoid or sequester emissions according to carbon offset methods that are defined and approved for use under the ERF. Proponents that undertake projects, and measure and report abatement in accordance with an approved method are issued Australian Carbon Credit Units (ACCUs). Crediting involves determining the amount of emissions reductions delivered by a project, with one ACCU issued for each tonne of abatement.

ACCUs can be sold either to the Australian Government through a 'carbon abatement contract' under the ERF, or to the secondary market to enable other entities to offset or meet their carbon abatement obligations. The secondary market includes entities with compliance obligations under the Australian Government's Safeguard Mechanism, and voluntary purchases by businesses and state and territory governments that wish to reduce their net emissions.

Vegetation management projects are a significant part of the ERF, making up almost 60 per cent of ACCUs issued and 70 per cent of all contracted ACCUs.<sup>6</sup> One of the most popular vegetation

methods has been avoided deforestation. As at September 2021, the avoided deforestation method accounted for more than 20 per cent of issued ACCUs and the Clean Energy Regulator had contracted to buy 26.3 million ACCUs from avoided deforestation projects for approximately \$310 million.<sup>7</sup>

The avoided deforestation method is intended to generate abatement by incentivising the retention of remnant native forests and pre-1983 regrowth native forests in western New South Wales that would otherwise have been cleared. There are currently 63 registered avoided deforestation ERF projects.<sup>8</sup> At the time of writing, 21.8 million ACCUs had been issued to avoided deforestation projects, and the projects that are currently registered are likely to generate approximately 38 million ACCUs over their 15-year crediting period. The total value of all the ACCUs generated by avoided deforestation projects is ultimately likely to exceed \$500 million and could be more than \$700 million.

This volume of actual and potential abatement makes the avoided deforestation method the third largest under the Emissions Reduction Fund, behind human-induced regeneration and landfill gas.

Given the significance of the avoided deforestation method, it is crucial that the abatement credited under the method is real and additional. This paper evaluates this issue, presenting the results of an analysis on whether the native forests that are eligible for protection under the method were likely to be cleared if the offset projects were not undertaken. The results suggest that most of the forests protected under avoided deforestation projects are unlikely to have been cleared under business-as-usual circumstances (i.e. if the method had not been made) and that the method's assumptions regarding rates of clearing in eligible areas are implausible.

The remainder of the paper is set out as follows: firstly, a background on the avoided deforestation method and its core assumptions is provided. The paper then outlines the method used to analyse the validity of the method's assumptions regarding

<sup>6</sup> Clean Energy Regulator (2021). *Emissions Reduction Fund project register*, <http://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register>

Clean Energy Regulator (2021). *Carbon abatement contract register*, <http://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/carbon-abatement-contract-register>

<sup>7</sup> The value was estimated using the weighted average ACCU price from the first four ERF auctions.

<sup>8</sup> As of 20 August 2021.

forest clearing, followed by the results of this analysis. The paper concludes with a discussion of the implications and recommendations on what should be done to address the problems with the integrity of the method and projects.

## A preliminary note on the integrity of the Avoided Deforestation Method

This paper is not the first to question the integrity of the avoided deforestation method. In 2016 academic Paul Burke raised significant concerns about the ERF in general and the likelihood of 'anyway projects' (abatement that would have happened in the absence of an ERF method) being funded under the mechanism. Burke highlighted avoided deforestation as an 'anyway project', meaning that eligible farmers in NSW never intended to clear their land (predominantly because the land in question is considered marginal and clearing is expensive).<sup>9, 10</sup>

That farmers are being issued ACCUs for land they never intended to clear appears to have been an open secret in the sector since the method's inception, yet as Burke has pointed out, the government has 'yet to engage with this issue'.<sup>11, 12, 13</sup>

This looked like it may change in 2019 when the Emissions Reduction Assurance Committee (ERAC), an independent statutory committee responsible for ensuring ERF methods comply with the Offsets Integrity Standards, initiated a review of the *Carbon Credits (Carbon Farming Initiative – Avoided Deforestation 1.1) Methodology Determination 2015*. A discussion paper was released and the public was invited to submit responses to the paper.<sup>14</sup> The committee advised that it would prepare advice for the Minister based on the outcomes of the review.

In response to the review, concerns about the conservatism and additionality of the method were raised.<sup>15</sup> Prior to the review the Australian Conservation Foundation had already contacted the ERAC in February 2019 with concerns about transparency and leakage.<sup>16</sup>

The public consultation period for the review closed on 9 October 2019, almost two years ago. To the knowledge of the authors, advice on the outcomes of the review still has not been provided to the Minister. The ERAC and the CER clearly *still* haven't engaged with the issue, yet, in the interim, four more projects have been registered under the avoided deforestation method and the Clean Energy Regulator has issued a further 5.7 million ACCUs to avoided deforestation projects (issued between FY20 and FY22), worth a total of approximately \$68 million.<sup>17</sup>

This paper not only raises questions about the avoided deforestation method itself, it also raises serious questions about the efficacy and governance of Australia's carbon farming legislation.

<sup>9</sup> Burke (2017) Submission to Australia's review of climate change policies, [https://iceds.anu.edu.au/files/Paul-Burke-Submission-to-Australias-2017-Climate-Review\\_1.pdf](https://iceds.anu.edu.au/files/Paul-Burke-Submission-to-Australias-2017-Climate-Review_1.pdf)

<sup>10</sup> Burke (2016) 'Undermined by adverse selection: Australia's Direct Action abatement subsidies', *CCEP Working Paper 1605*, [https://ccep.crawford.anu.edu.au/sites/default/files/uploads/ccep\\_crawford\\_anu\\_edu\\_au/2016-06/ccep1605.pdf](https://ccep.crawford.anu.edu.au/sites/default/files/uploads/ccep_crawford_anu_edu_au/2016-06/ccep1605.pdf)

<sup>11</sup> Kilvert (2019) Is Tony Abbott 2.0 really the strong climate policy Australia needs?, ABC Science, <https://www.abc.net.au/news/science/2019-02-28/climate-cant-be-tricked-by-clever-accounting/10846554>

<sup>12</sup> Taylor (2015) 'Greg Hunt hasn't a lot to show for \$660m spent on reducing greenhouse emissions', *The Guardian* <https://www.theguardian.com/environment/2015/may/01/greg-hunt-660m-spent-reducing-greenhouse-emissions>

<sup>13</sup> Burke (2016) 'Direct Action not giving us bang for our buck on climate change', *The Conversation*, <https://theconversation.com/direct-action-not-giving-us-bang-for-our-buck-on-climate-change-59308>

<sup>14</sup> Emissions Reduction Assurance Committee (2019) Review of the Carbon Credits (Carbon Farming Initiative – Avoided Deforestation 1.1) Methodology Determination 2015: Discussion paper, <https://consult.industry.gov.au/review-of-the-carbon-credits-carbon-farming-initiative-avoided-deforestation-11-methodology-det>

<sup>15</sup> Australian Conservation Foundation (2019) *Response 512945708*, <https://consult.industry.gov.au/review-of-the-carbon-credits-carbon-farming-initiative-avoided-deforestation-11-methodology-det>

<sup>16</sup> Letter to the Emissions Reduction Assurance Committee from Kelly O'Shanassy, dated 6 February 2019

<sup>17</sup> Clean Energy Regulator (CER) *Emissions Reduction Fund project register*, <http://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register>

# The **Avoided Deforestation Method**

**For a project to be eligible under the avoided deforestation method, landholders must hold an Invasive Native Scrub Property Vegetation Plan (INS PVP) issued under the Native Vegetation Act 2003 (NSW) between 2005 and 30 June 2010 that authorises the clearing of remnant native forests or pre-1983 regrowth native forests.**

INS PVPs were a form of clearing approval that authorised the clearing and other treatment (burning) of 'invasive' native woody plant species that are responsible for vegetation thickening in some areas. Vegetation thickening describes an increase in shrub and tree density by woody plants that may reduce productivity and impact ecosystem processes. Examples of the type of species that were identified as 'invasive' for these purposes in western NSW include mulga (*Acacia aneura*), yarran (*Acacia homalophylla*), black wattle (*Acacia stenophylla*), belah (*Casuarina cristata*), coolibah (*Eucalyptus coolabah*) and bumble box (*Eucalyptus populnea*).

INS PVPs had 15-year terms, meaning the holder of the INS PVP could lawfully clear the identified vegetation in accordance with specified conditions at any time over the 15-year period from the date of issuance.

The avoided deforestation method is based on the assumption that landholders who applied for and received INS PVPs that authorised the clearing of remnant native forests and pre-1983 regrowth native forests would always act on them and clear the relevant vegetation within 15 years.

Reflecting this assumption, under the avoided deforestation method, abatement is calculated by:

- estimating the amount of greenhouse gases that would have been emitted if the forests had been cleared;
- subtracting any carbon dioxide sequestered by ongoing growth of the forests over the crediting period; and
- adding any relevant fire and fossil fuel related emissions.

The abatement from the project is then averaged across the crediting period (15 years) and issued on a pro-rata basis.

The crediting period for avoided deforestation projects is 15 years, which differs from the 25-year crediting period that is used under other ERF sequestration methods. The decision to use a 15-year crediting period was intended to ensure alignment with the term of INS PVPs. This is despite the fact that the actual remaining term of all INS PVPs that provide the basis for avoided deforestation projects is significantly less than 15 years.

## **Invasive Native Scrub Property Vegetation Plans and the assumptions behind the method**

The INS PVP provisions were included in the *Native Vegetation Act 2003* (NSW) to address concerns raised by pastoralists, particularly in the semi-arid and arid regions of western New South Wales, that the proposal to end broadscale clearing in New South Wales would impinge upon their pastoral operations and ability to manage invasive native species.

Pastoralists in the west of the state were given support to prepare INS PVPs, and were encouraged by the state government to apply to clear significant areas of vegetation, even if they had no immediate intentions to act on the approvals.

From the period 2005 up to 2017 (when the *Native Vegetation Act 2003* (NSW) was repealed), 4.93 million hectares of invasive scrub was approved for clearing or other treatment under INS PVPs.

Between 2005 and 30 June 2010 – the period that is eligible under the avoided deforestation method – 257 INS PVPs were issued, with a combined treatment area of 2.09 million hectares.

The vast majority (1.97 million hectares, or 94 per cent of the total) of the clearing approved under these 'eligible' INS PVPs relates to properties in the Western Local Land Service (LLS) region.

The remaining approved treatment area is predominantly spread across properties now located in the Central West (4 per cent) and North West (0.5 per cent) LLS regions.

The extent of the approved treatment area suggests landholders in these regions applied to clear substantially more vegetation than they intended to over the term of the INS PVPs. For example, over the period 1988 to 2005, agriculture-related clearing of both remnant and regrowth woody vegetation across the whole of New South Wales averaged 20,900 hectares per annum – at this rate, it would take 100 years to clear the treatment areas approved under the eligible INS PVPs.

## Integrity of the method

### Offsets integrity standards

Under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), all ERF methods are required to satisfy six offsets integrity standards. The available data suggest the avoided deforestation method does not satisfy the following three standards:

- the method is required to be supported by clear and convincing evidence;

- all estimates, projections and assumptions in the method are required to be conservative; and
- the method is required to result in carbon abatement that is unlikely to occur in the ordinary course of events (i.e. the abatement must be additional to what would otherwise have occurred).

Most notably, the assumption that landholders with INS PVPs would always act on them and clear the relevant remnant native forests and/or pre-1983 regrowth native forests within the approved treatment area within 15 years is not credible.

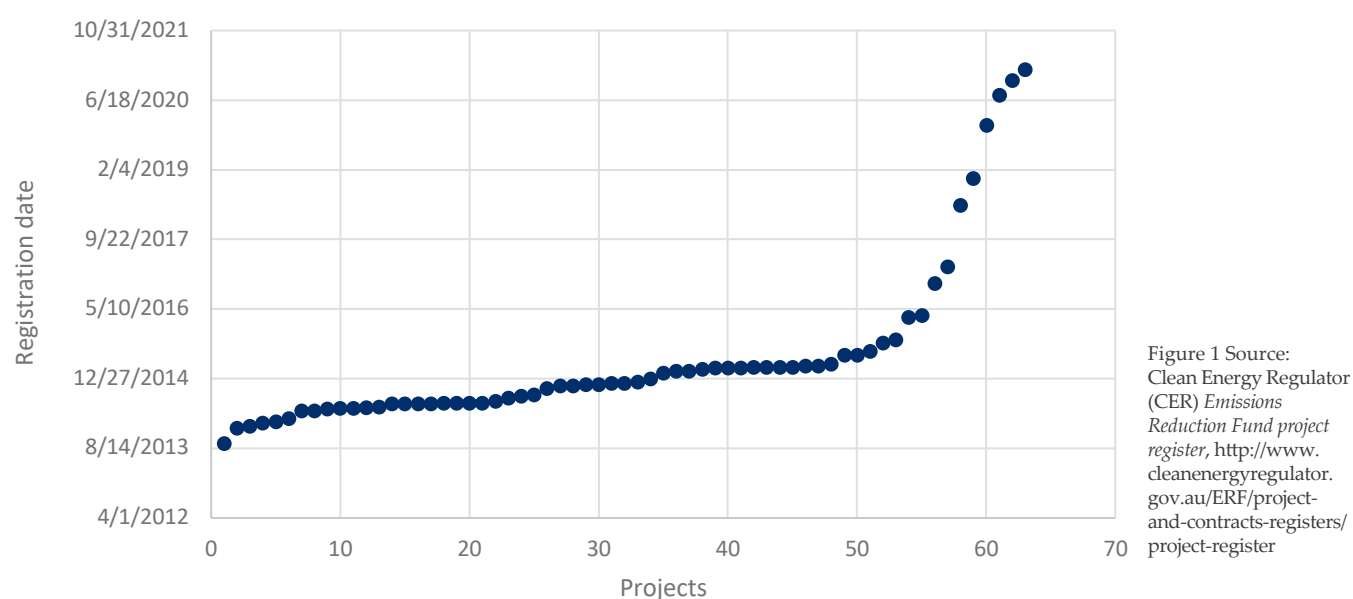
This conclusion is supported by two lines of evidence:

- the extent of the clearing approved under INS PVPs that are eligible to be used under the avoided deforestation method; and
- the trends in clearing (deforestation).

### Contextual information on the operation of the avoided deforestation method

As of 20 August 2021, there were 63 registered avoided deforestation ERF projects. As shown in Figure 1, most of these projects (53) were registered between late 2013 and the end of 2015. Only 10 of the existing projects were registered after December 2015.

Figure 1. Date of registration of avoided deforestation projects



The combined project area of the avoided deforestation projects registered as of late August 2021 was 949,075 hectares. However, the project activity – the ‘avoidance of deforestation’ – is not carried out across the entire project area.<sup>18</sup> Within the project area, proponents are required to delineate specific areas where the project activity is undertaken, and where carbon will be stored, known as carbon estimation areas (CEAs). The remaining areas are called ‘exclusion areas’.

The CEAs are the specific areas in which abatement is being achieved and to which ACCUs are issued. Under the avoided deforestation method, the CEAs must only include areas that the proponent is allowed to clear under the relevant INS PVP.

As of 1 July 2021, 59 of the 63 registered projects had mapped their CEAs and reported under the ERF. The CEAs of these projects covered an area of 349,136 hectares. At the time of writing, 21.8 million ACCUs had been issued in relation to these areas.

Reflecting where the INS PVPs were issued, 51 of the 59 reported projects were wholly located in the Western LLS region. The CEAs of these Western LLS projects covered an area of approximately 320,000 hectares and 20 million ACCUs had been issued to these projects as of 20 August 2021.<sup>19</sup>

## Analysis

### Approved clearing in the Western LLS region and the avoided deforestation method assumptions

In assessing the integrity of the avoided deforestation method, we confined the analysis to the Western LLS region. This was because the Western LLS region accounts for the overwhelming majority of the eligible INS PVP treatment area and the registered avoided deforestation projects. There is also a publicly available New South Wales Government dataset on woody vegetation clearing for the Western LLS region that dates back to 1988,<sup>20</sup> and a national deforestation dataset that includes disaggregated data on the Western LLS region from 2015.<sup>21</sup>

As discussed, the INS PVPs issued in the Western LLS over the period 2005 to July 2010 authorised the treatment of 1.97 million hectares of remnant and pre-1983 native woody vegetation.

The whole of this treatment area would not necessarily be eligible for inclusion in avoided deforestation projects. To be eligible under the avoided deforestation method:

- a treatment area must include native forest and have forest cover at the date of the application to register the avoided deforestation project, meaning it must be an area of at least 0.2 hectares that is dominated by native trees that have a crown cover of at least 20 per cent of the land area and a height of at least 2 metres; and
- the INS PVP must authorise the clearing of the treatment area to convert it from native forest to cropland or grassland, meaning that, if the authorised treatment was carried out in full, it must result in the conversion of the forest to a non-forest state (i.e. crown cover of less than 20 per cent or vegetation less than 2 metres in height).<sup>22</sup>

<sup>18</sup> Generally, the project areas of avoided deforestation projects are defined along farm property boundaries.

<sup>19</sup> The size of the CEAs in the Western LLS avoided deforestation projects was estimated on the basis of the ACCUs issued in relation to the projects over the period 2014-2020, using FullCAM-derived estimates of average onsite live biomass that ranged between 20-38 tonnes of carbon per hectare.

<sup>20</sup> Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney.

<sup>21</sup> Department of Industry, Science, Energy and Resources (2021) *Australian Greenhouse Emissions Information System: Activity Tables*, <https://ageis.climatechange.gov.au/>

<sup>22</sup> *Carbon Credits (Carbon Farming Initiative – avoided deforestation 1.1) Methodology Determination 2015*, ss 5, 10 and 21

Treatment areas do not always meet these requirements. However, INS PVPs are not public documents, and the CER is not allowed to publish the location of CEAs. This prevents the accurate identification of the total INS PVP treatment area that is eligible under the avoided deforestation method. The best that can be done is to provide a range, with an upper limit defined by the entire treatment area and a lower limit defined by the existing CEA area within the Western LLS region.

#### Upper limit - entire treatment area

Figure 2 compares the average total agriculture-related woody vegetation clearing rates (remnant clearing plus regrowth clearing) for the Western LLS region from two time periods, 1988-2008 and 2009-2013, to the annual clearing rate required to cover the entire approved treatment area over 15 years (remembering that the avoided deforestation method assumes all approved clearing would be carried out within 15 years).

The average clearing rate in the Western LLS region was 3,862 hectares per year over the period 1988-2008, and 1,568 hectares per year over the period 2009-2013. In contrast, it would take a clearing rate of 131,536 hectares per year over 15 years to clear the approved treatment area under eligible INS PVPs.

This suggests that, for the avoided deforestation method to result in additional abatement:

- the rate of clearing would have to have been between 34 and 84 times greater than the historical average; and
- all agriculture-related clearing in the Western LLS region over the period roughly spanning 2014-2028 would have been within the INS PVP treatment areas (i.e. no other agriculture-related clearing would have occurred, otherwise the required increase in clearing would need to be higher).

At the historic clearing rates, it would take between 511 and 1,258 years to get through the 1.97 million hectares of approved clearing.

**Figure 2. Western LLS, historic average total agriculture-related woody vegetation clearing rates (remnant and all regrowth clearing, 1988-2008 and 2009-2013) vs rate required to clear the entire eligible INS PVP treatment area in 15 years**

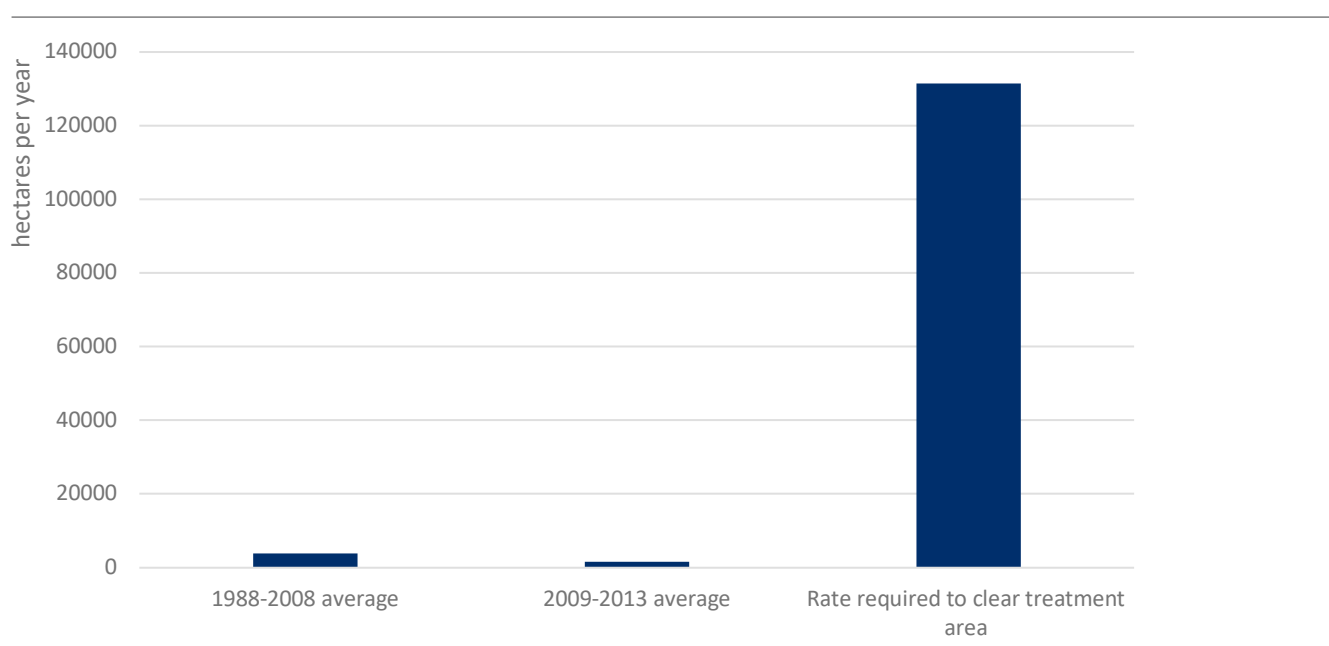


Figure 2 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and authors' estimates.

The historic clearing rates presented in Figure 2 include all agriculture-related clearing, covering both remnant clearing and regrowth clearing. As discussed, not all woody clearing required approval under the *Native Vegetation Act 2003* (NSW). Landholders in the Western Division could clear post-1983 regrowth without approval.<sup>23</sup> This meant that the clearing approved under INS PVPs is limited to remnant vegetation and pre-1983 regrowth. Hence, the appropriate basis for comparison is between the historic rate of clearing of *remnant native vegetation and pre-1983 regrowth*, and the rate required to cover the treatment area in 15 years.

There is no readily available data source that provides estimates of the historic rates of remnant and regrowth clearing in the Western LLS region. Due to this, it was necessary to approximate what proportion of total clearing comprised clearing of remnant vegetation and pre-1983 regrowth. To estimate this, we used the Australian Government's deforestation statistics for the Western LLS region, which only cover the period 2015 to 2019.<sup>24</sup> Over this period, the proportion of deforestation involving remnant vegetation averaged 43 per cent in the Western LLS region, fluctuating from a low of 18 per cent to a high of 67 per cent. For comparison, the state-wide average over the period 2000 to 2019 was 16 per cent. To ensure the analysis was conservative, we assumed 65 per cent of observed historic clearing involved remnant vegetation and pre-1983 regrowth.

Figure 3 compares the average estimated remnant plus pre-1983 regrowth clearing rates from 1988-2008 and 2009-2013 to the annual clearing rate required to cover the entire approved treatment area over 15 years. The estimated average remnant plus pre-1983 regrowth clearing rate was 2,510 hectares per year over the period 1988-2008, and 1,019 hectares per year over the period 2009-2013, compared to a required clearing rate of 131,536 hectares per year to clear the approved treatment area.

This suggests that, for the avoided deforestation method to result in additional abatement:

- the rate of remnant plus pre-1983 regrowth clearing would have to have been between 52 and 129 times greater than the historical average; and
- all agriculture-related remnant plus pre-1983 regrowth clearing in the Western LLS region over the period roughly spanning 2014-2028 would have been within the INS PVP treatment areas (i.e. no other agriculture-related clearing would have occurred, otherwise the required increase in clearing would need to be higher).

At these historic clearing rates, it would take between 786 and 1,936 years to get through the 1.97 million hectares of approved clearing.

<sup>23</sup> In all other parts of the state, landholders could clear post-1990 regrowth without approval.

<sup>24</sup> Department of Industry, Science, Energy and Resources (2021) *Australian Greenhouse Emissions Information System: Activity Tables*, <https://ageis.climatechange.gov.au/>

**Figure 3. Western LLS, estimated historic average agriculture-related remnant plus pre-1983 regrowth clearing rates (1988-2008 and 2009-2013) vs rate required to clear the entire eligible INS PVP treatment area in 15 years**

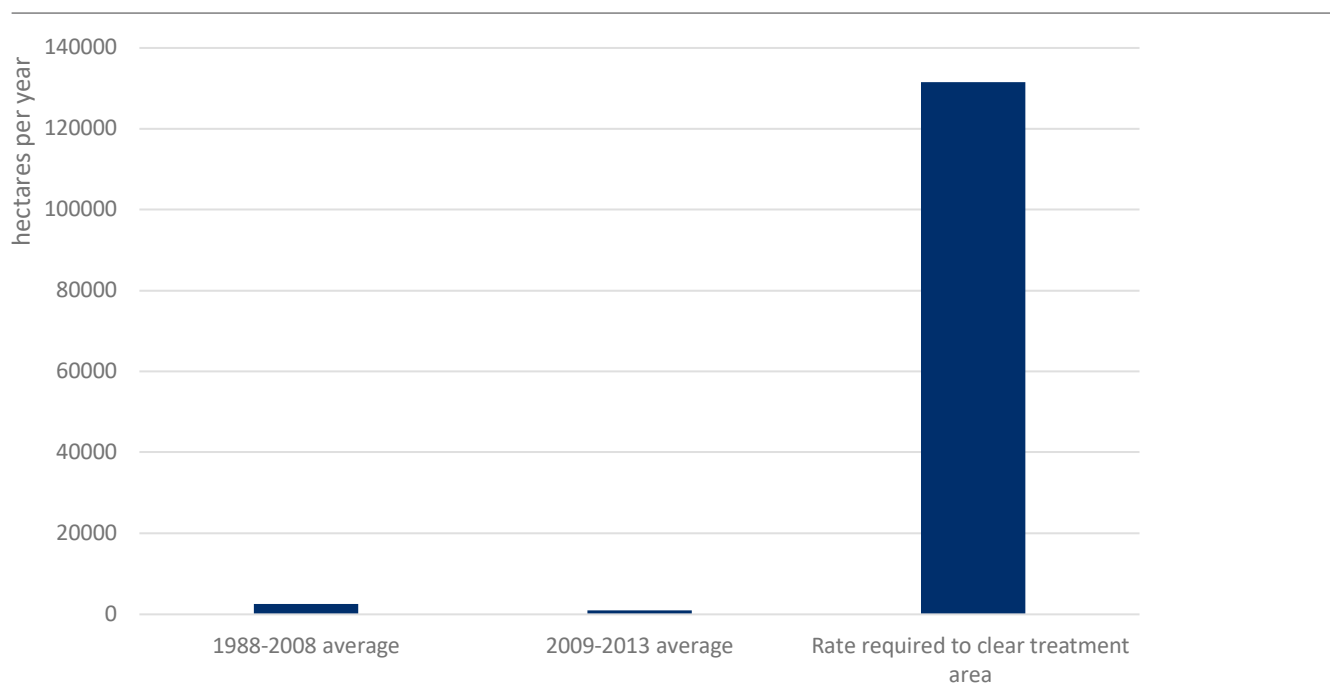


Figure 3 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and authors' estimates.

### Lower limit - total CEA area

The most conservative way to estimate the treatment area that was potentially eligible under the avoided deforestation method is to use the CEAs of the 51 registered projects in the Western LLS region that have reported, as of August 2021. These CEAs cover an area of approximately 320,000 hectares. These areas have been audited and endorsed by the CER as meeting the avoided deforestation method's eligibility requirements.

Figure 4 compares the historic average total agriculture-related woody vegetation clearing rates (remnant and all regrowth clearing) from 1988-2008 and 2009-2013 to the rate required to clear the entire CEA area in the Western LLS region in 15 years.

The historic rates were between 1,568 and 3,862 hectares per year, while the required clearing rate to clear all CEAs in 15 years is 21,366 hectares per year.

These data suggest that, for the avoided deforestation method to result in additional abatement:

- the rate of remnant plus pre-1983 regrowth clearing would have to have been between 6 and 14 times greater than the historical average; and
- all agriculture-related remnant plus pre-1983 regrowth clearing in the Western LLS region over the period roughly spanning 2014-2028 would have been within the CEAs (i.e. no other agriculture-related clearing would have occurred, otherwise the required increase in clearing would need to be higher).

At these historic clearing rates, it would take between 83 and 204 years to get through the deforestation approved in the CEAs.

**Figure 4. Western LLS, historic average total agriculture-related woody vegetation clearing rates (remnant and all regrowth clearing, 1988-2008 and 2009-2013) vs rate required to clear the current CEA area in 15 years**

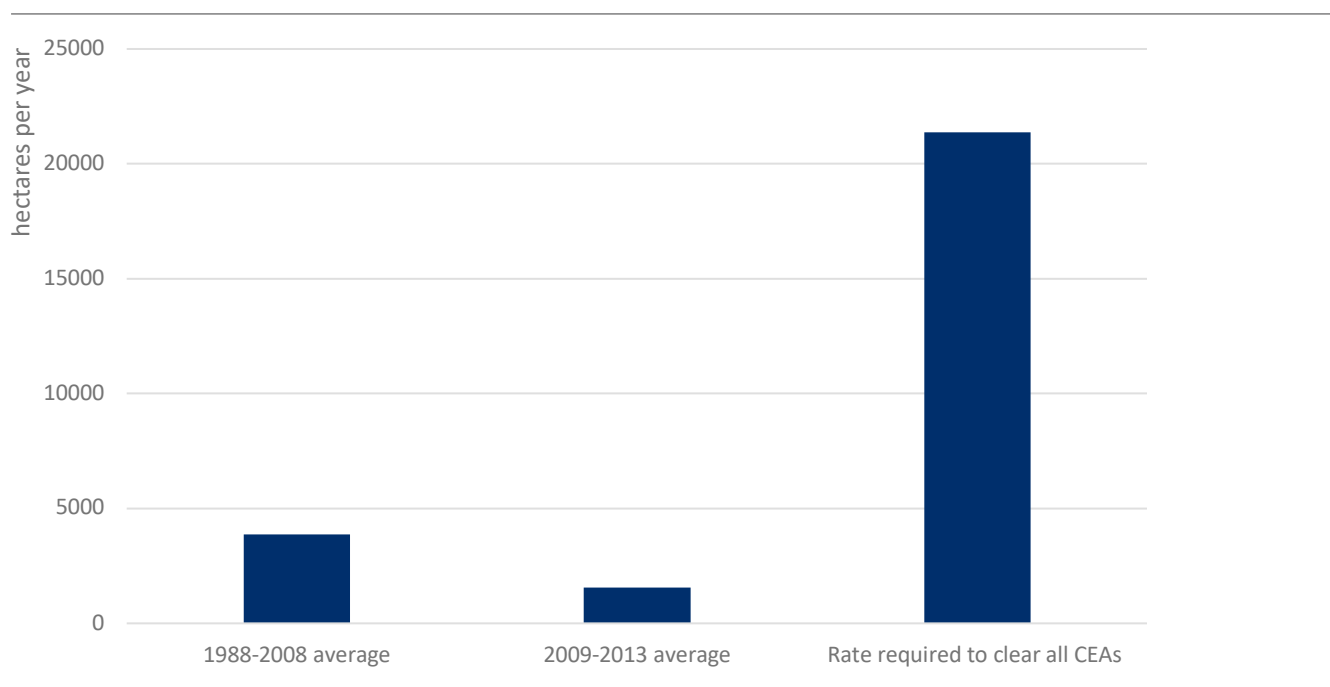


Figure 4 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and authors' estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98*. Commonwealth of Australia, Canberra.

Figure 5 compares the average estimated remnant plus pre-1983 regrowth clearing rates from 1988-2008 and 2009-2013 to the rate required to clear the entire CEA area in 15 years.

The historic rates were conservatively estimated to be between 1,019 and 2,510 hectares per year, while the required clearing rate to clear all CEAs in 15 years is 21,366 hectares per year.

These data suggest that, for the avoided deforestation method to result in additional abatement:

- the rate of remnant plus pre-1983 regrowth clearing would have to have been between 9 and 21 times greater than the historical average; and
- all agriculture-related remnant plus pre-1983 regrowth clearing in the Western LLS region over the period roughly spanning 2014-2028 would have been within the CEAs (i.e. no other agriculture-related clearing would have occurred, otherwise the required increase in clearing would need to be higher).

At these historic clearing rates, it would take between 128 and 314 years to get through the deforestation approved in the CEAs.

**Figure 5. Western LLS, estimated historic average agriculture-related remnant plus pre-1983 regrowth clearing rates (1988-2008 and 2009-2013) vs rate required to clear the current CEA area in 15 years**

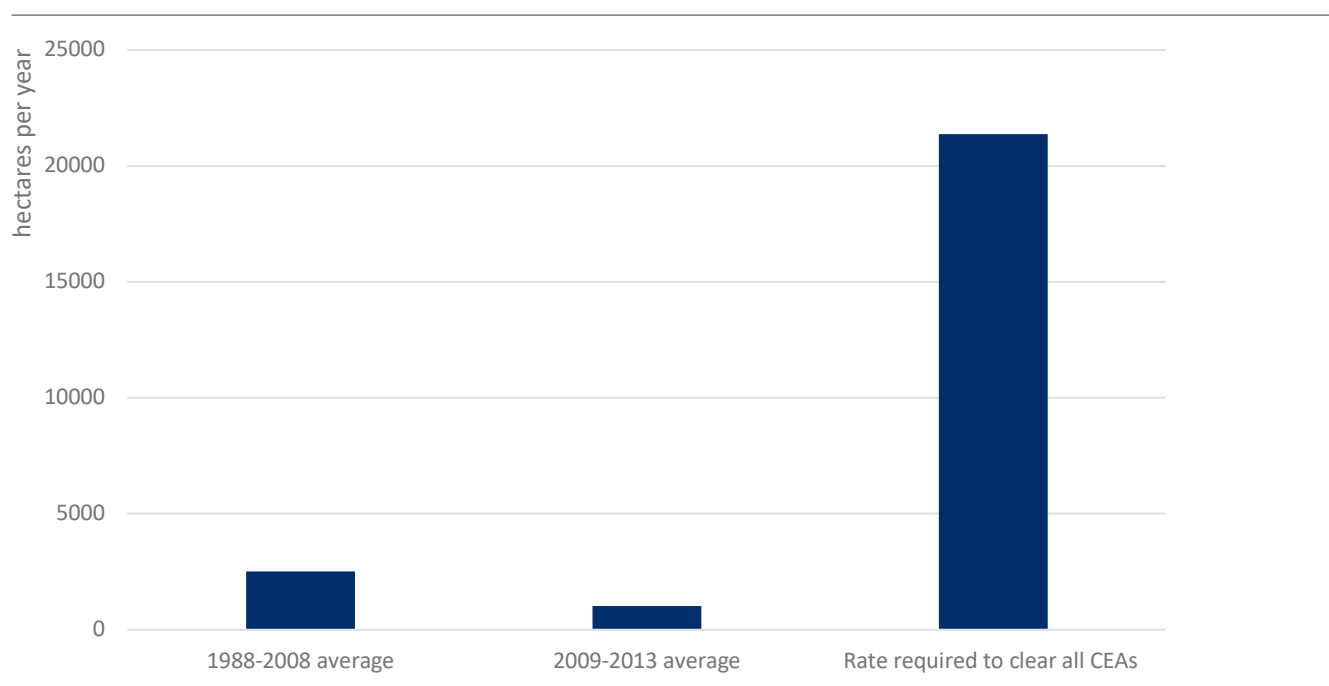


Figure 5 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and author estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice*. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98. Commonwealth of Australia, Canberra.

### Comparing credited abatement to historical trends in deforestation emissions

Another way to test the plausibility of the additionality assumptions that underpin the avoided deforestation method is to place the required (or assumed) rates of clearing under the method against the estimated rates of remnant plus pre-1983 regrowth clearing in the Western LLS region after the avoided deforestation projects commenced. As shown in Figure 6, the estimated remnant plus pre-1983 regrowth clearing rates in the Western LLS region over the period 2009 to 2014 were below the long-term average, hovering between 432 hectares per year and 1,464 hectares per year. They then increased significantly, reaching 6,226 hectares in 2019. For the avoided

deforestation method's assumptions to be valid, the actual remnant plus pre-1983 regrowth clearing rate in the absence of the projects in 2019 would have to have been almost 27,600 hectares per year, and the average clearing rate over the period 2014-2019 would have to have been 25,739 hectares per year. For comparison, the actual estimated average over this period was 4,372 hectares per year.

The increase in clearing in the Western LLS since the commencement of avoided deforestation projects raises questions about whether the projects have actually prompted an increase (rather than a decrease) in clearing. This could have occurred, for example, if landholders had wanted to undertake clearing in particular areas in the past but they did not have access to the necessary financial resources.

**Figure 6. Historic clearing rates vs clearing rates assumed under the avoided deforestation method\***

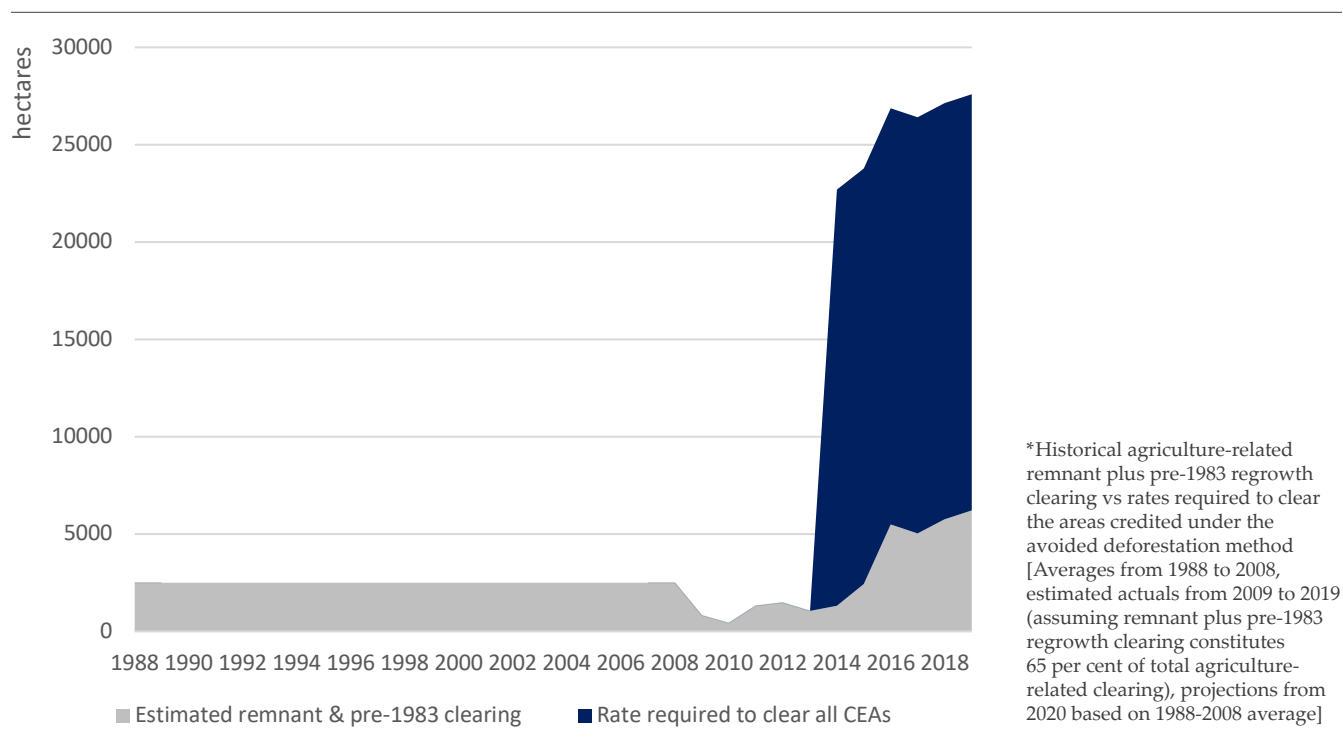


Figure 6 Source: Department of Planning, Industry and Environment (2021) *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and authors' estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98*. Commonwealth of Australia, Canberra.

The avoided deforestation projects could have in effect funded increased clearing in areas outside of the CEAs. While possible, there are a number of alternative explanations for the observed increases in clearing, including changes in the methods used to detect clearing events, the 2017-2019 drought artificially inflating the clearing estimates and changes in state clearing laws.

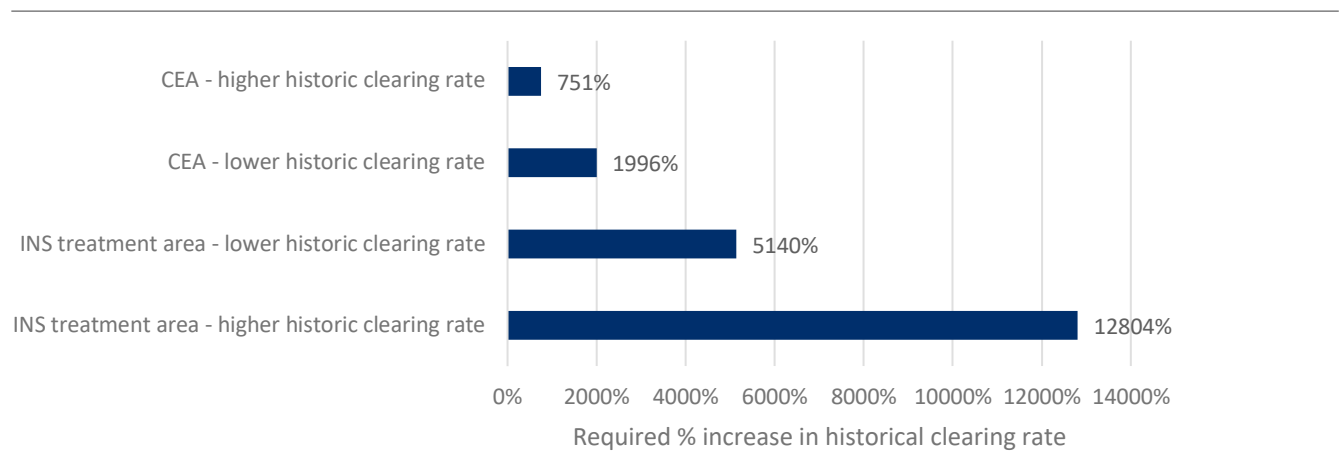
## Summary of results

**The core assumption that underpins the avoided deforestation method is that, in the counterfactual where avoided deforestation projects were not initiated, landholders with eligible INS PVPs would have undertaken the approved clearing within 15 years.**

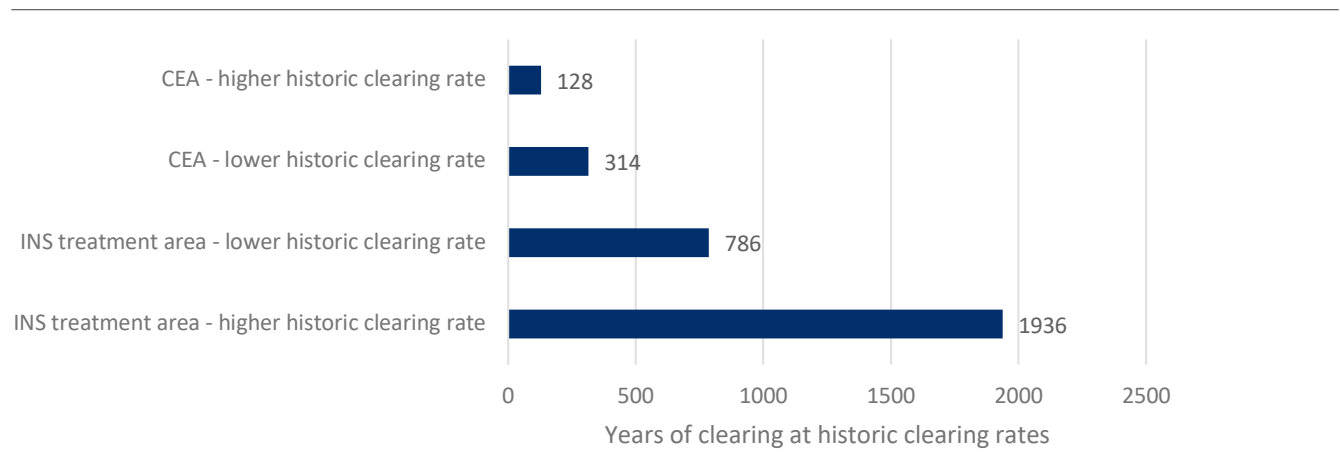
As shown in Figure 7, for this to be true, the clearing rate would need to have increased by between 751 per cent and 12,804 per cent. Figure 8

presents this in an alternative way – the number of years of clearing at relevant historic average clearing rates to get through the relevant approved clearing. The number of years needed to achieve this ranges from 128 to 1,936. Whichever way the data are presented, it is clear the avoided deforestation method's assumption that the areas would be cleared in the counterfactual is not plausible.

**Figure 7. Required percentage increase in historic clearing rates for avoided deforestation method clearing assumptions to be true**



**Figure 8. Number of years of clearing required to get through the relevant approved clearing**



Figures 7 and 8 Source: Department of Planning, Industry and Environment (2021). *Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2019*. New South Wales Government, Sydney; and author estimates; Clean Energy Regulator (2021) *Environment and Communications Legislation Committee. Answers to Questions on Notice. Department of Industry, Science, Energy and Resources, 2021-2022 Budget Estimates. Question No. 98*. Commonwealth of Australia, Canberra.

# Conclusion

**The results of the analysis demonstrate that the avoided deforestation method does not satisfy the offsets integrity standards: it is not based on clear and convincing evidence; the main assumption that underpins the method is not conservative; and the method is likely to be predominantly crediting non-additional abatement.**

The method's lack of integrity casts a cloud over the integrity of the ERF and its ability to help Australia meet its climate targets. The avoided deforestation method is currently responsible for more than 20 per cent of the total number of ACCUs that have been issued under the ERF. To date, the Australian Government has also contracted to buy 26.3 million ACCUs from avoided deforestation projects for approximately \$310 million.

Beyond being sold to the Australian Government, ACCUs are also sold to the secondary market. While the secondary market includes mandatory purchases from large polluters under the Safeguard Mechanism, it also includes a growing voluntary market. Private businesses and state and territory governments are buying ACCUs to meet their own emissions reductions targets and/or to form the basis of many public 'carbon neutral' or 'net zero' claims.<sup>25</sup> The proper functioning of the secondary market hinges on the integrity of the ERF's methods. In the absence of integrity, participants in the market will be misled and, ultimately, the market could fail.

The avoided deforestation method should be revoked immediately. To prevent more government money from being wasted, steps should be taken to stop the existing projects from receiving any further ACCUs. The government should also take steps to warn the companies and individuals that buy ACCUs of the integrity problems with avoided deforestation projects, and the risk that the ACCUs do not represent real and additional abatement. Finally, the manifest integrity problems with the avoided deforestation method raise questions about how the method was made and why steps have not been taken to address them.

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<sup>25</sup> Climate Active (2021) *Certified Brands*, <https://www.climateactive.org.au/buy-climate-active/certified-brands>

## Appendix A.

### *A note on data sources: Use of the woody vegetation cover change data rather than deforestation data as the basis for the analysis*

With the exception of the data presented in Figure 6, the analysis relies on the New South Wales Statewide Landcover and Tree Study (SLATS) analysis of woody vegetation change. However, the avoided deforestation method only applies to forests and deforestation. The SLATS woody vegetation change analysis looks at human-induced changes in detectable woody vegetation, which can involve vegetation that does not meet the definition of a forest (i.e. it can involve woody vegetation with less than 20 per cent crown cover or less than 2 metres in height). Deforestation involves the conversion of a forest (an area of at least 0.2 ha with trees with a potential or actual crown cover of at least 20 per cent and a potential or actual height of at least 2 metres) to a non-forest state. As such, it would arguably be preferable to undertake the analysis using a dataset that is limited to eligible deforestation.

While there is some validity to this argument, the use of a deforestation dataset would not materially change the overall conclusions. If anything, the use of deforestation data would only make the comparisons worse and further emphasise the implausibility of the assumptions that underpin the method.

The SLATS woody vegetation change dataset was used because it is widely regarded as being more reliable than the Australian Government's

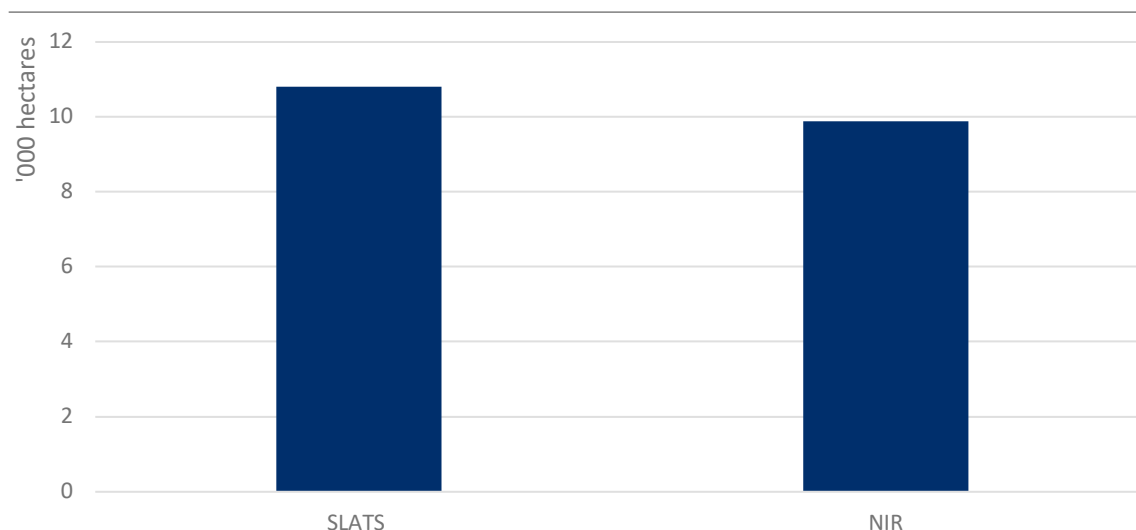
deforestation dataset. The public SLATS database also contains a longer time series on woody cover change in the Western LLS than the published Australian Government deforestation dataset, which is used to produce Australia's National Inventory Report (NIR).

Importantly, using the woody vegetation change dataset is conservative for these purposes. This is because, by including woody vegetation clearing that does not meet the forest thresholds, it increases the comparator clearing numbers. If the subset of woody vegetation that does not meet the definition of a native forest was used, the results would be even worse.

This is shown in Figure 9, which compares the total average annual woody vegetation change estimate for the Western LLS region from SLATS to the equivalent NIR deforestation estimate for the period 2015 to 2019. The data in Figure 9 also suggest the differences between the datasets are not large enough to have any material bearing on the results of the analysis.

Regardless of the dataset that is used, the unavoidable conclusion is that the avoided deforestation method does not satisfy the offsets integrity standards and is likely to have resulted in the issuance of ACCUs for a substantial amount of non-existent abatement.

**Figure 9. Western LLS region, SLATS average annual woody vegetation change estimate vs equivalent NIR deforestation estimate, 2015 to 2019**



# **The integrity** of the government's only **climate policy is** **in question**

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