

## **EXPLANATORY STATEMENT**

Issued by the Minister for Industry, Energy and Emissions Reduction

*Carbon Credits (Carbon Farming Initiative) Act 2011*

*Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology  
Determination 2022*

### **Purpose**

The *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2022* (the Determination) credits increased carbon sequestration through the establishment of new plantation forests, the transition of existing plantation forests from short rotation to long rotation plantation forests, and the avoided conversion of existing plantation forests to non-forested land.

The Determination sets out the rules for calculating, crediting and reporting the greenhouse gas abatement from projects undertaking plantation forestry activities for the purpose of creating Australian carbon credit units (ACCUs). It also sets out the rules for eligibility of projects to be credited for greenhouse gas abatement, and specific notification and monitoring requirements.

### **Background to the Emissions Reduction Fund**

The *Carbon Credits (Carbon Farming Initiative) Act 2011* (the Act) enables the crediting of greenhouse gas abatement from emissions reduction activities across the economy.

Greenhouse gas abatement is achieved by reducing or avoiding emissions or by removing carbon dioxide from the atmosphere and storing it in soil, biomass or organic matter.

In 2014, the Australian Parliament passed the *Carbon Farming Initiative Amendment Act 2014*, which established the Emissions Reduction Fund. Further information on the Emissions Reduction Fund is available at: [www.industry.gov.au/funding-and-incentives/emissions-reduction-fund](http://www.industry.gov.au/funding-and-incentives/emissions-reduction-fund) or [www.cleanenergyregulator.gov.au/ERF](http://www.cleanenergyregulator.gov.au/ERF).

Emissions reduction activities are undertaken as offsets projects. The process involved in establishing an offsets project is set out in Part 3 of the Act. An offsets project must be covered by, and undertaken in accordance with, a methodology determination.

Subsection 106(1) of the Act empowers the Minister to make a methodology determination by legislative instrument. The purpose of a methodology determination is to establish procedures for estimating abatement (emissions avoidance or sequestration) from eligible projects and rules for monitoring, record-keeping, and reporting. These determinations will ensure that emissions reductions are genuine—that they are both real and additional to business as usual.

In deciding to make a methodology determination, the Minister must have regard to the advice of the Emissions Reduction Assurance Committee (ERAC), an independent expert panel established to advise the Minister on proposals for methodology determinations. The Minister must not make or vary a methodology determination if the ERAC has advised that it does not comply with the offsets integrity standards, which are set out in Section 133 of the Act. The Minister must also consider any adverse environmental, economic, or social impacts likely to arise as a result of projects to which a methodology determination applies.

Offsets projects undertaken in accordance with a methodology determination and approved by the Clean Energy Regulator (the Regulator) can generate ACCUs representing emissions reductions from the project.

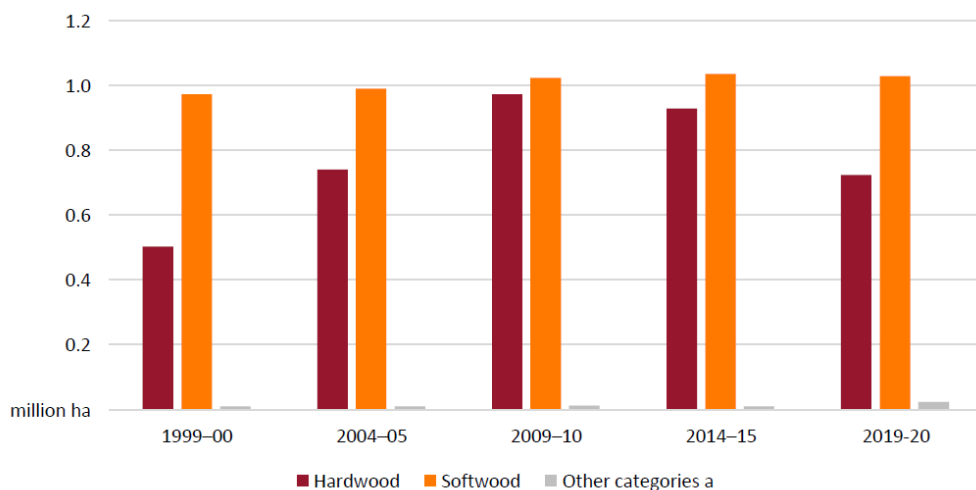
### **Background to the Determination**

Australia's plantation estate expanded by over 1 million hectares between 1991 and 2010, before contracting in the subsequent decade (Figure 1). The total commercial plantation estate in 2019–20 was 1.77 million hectares, down 10% (199 thousand hectares) from 2014–15. This decline was primarily driven by the contraction in the hardwood plantation area of 22% (205 thousand hectares), while the softwood plantation area was relatively stable, declining by less than 1% (7 thousand hectares) (ABARES, 2021). There is substantial variation in these trends by region and plantation type (Table 1), reflecting the varying underpinning economic and biophysical drivers.

The establishment of new plantations has also been minimal since 2012 (Figure 2), due to a range of barriers, including access to suitable land and challenging market conditions.

The historical trends indicate that under current market conditions:

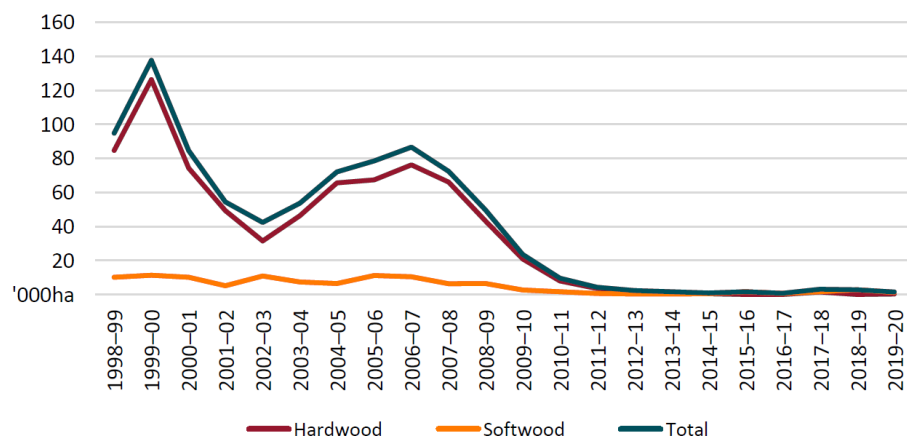
- the establishment of new plantations in most regions of Australia is unlikely to occur in the ordinary course of events,
- the area of plantations in Australia is likely to continue decline in the short to medium term, and
- these changes will have a negative impact on Australia's efforts to reduce greenhouse gas emissions.



**Figure 1. Total Australian plantation area, by type, 1999-00 to 2019-20**

Source: ABARES, 2021

a Other categories are mixed hardwood and softwood species and plantations for which species were not reported



**Figure 2. New plantation establishment, 1998-99 to 2019-20**

Source: ABARES, 2021

**Table 1: Total plantation area by plantation type, 2014-15 to 2019-20, % change**

NPI region	Hardwood	Softwood	Total
Western Australia	-29	-1	-19
Northern Territory	3	24	4
Mt Lofty Ranges and Kangaroo island	6	-19	-8
Green Triangle	-10	3	-3
North Queensland	-93	-33	-36
South East Queensland	-41	0	-6
Northern Tablelands	-93	-5	-17
North Coast	-32	-2	-27
Central Tablelands	-42	-4	-4
Southern Tablelands	-92	-20	-21
Murray Valley	-17	-1	-1
Central Victoria	-54	-11	-35
Central Gippsland	-34	7	-7
East Gippsland-Bombala	-29	16	9
Tasmania	-15	3	-9
<b>Total</b>	<b>-22</b>	<b>-1</b>	<b>-10</b>

Source: ABARES, 2021

## Overview of the Determination

A new plantation forestry method was announced in December 2020 as one of five priority Emissions Reduction Fund methods to be developed in 2021. The Determination builds on the existing *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2017* (‘the former Determination’) to offer more opportunities for the plantation forestry industry to deliver low-cost abatement.

The Determination requires that at least one of four possible project activities be undertaken in the eligible area, each available under a ‘Schedule’. In general, where provisions relate to two or more of the project activities, they are contained in the main part of the method.

Where there are project-activity specific provisions, they are contained in each Schedule.

Table 2 provides an overview of the Determination structure. The four project activities are:

- Schedule 1: Establishment of a new plantation forest on land that has had no plantation forest for seven years; or
- Schedule 2: Conversion of a short-rotation plantation to a long-rotation plantation, where the conversion might occur either part-way through the short-rotation plantation cycle, or following harvest of a short-rotation plantation; or
- Schedule 3: Continuing plantation forestry under circumstances where the land would have otherwise converted to non-forested land; or
- Schedule 4: Transitioning a plantation forestry to a permanent forest under circumstances where the land would have otherwise converted to non-forested land.

Specific eligibility requirements apply for each project activity. The Determination also allows for existing projects registered under the former Determination to transition to the new method (Schedule 5).

The Determination accounts for carbon stock changes in trees, debris, and harvested forest products, taking into account forest growth, disturbances and harvesting. It also accounts for carbon stock changes and emissions due to management activities such as thinning, pruning, fertilising and controlled burning, and emissions from fossil fuel use.

### Agriculture Minister notification and the water rule

The *Carbon Credits (Carbon Farming Initiative) Rule 2015* applies further eligibility requirements to complement the requirements of the method. The Australian Government Minister responsible for the Agriculture portfolio has a role to assess whether a project which involves establishing a new plantation may lead to an undesirable impact on agricultural production in the region in which the project is to be located. More information can be obtained from the *Carbon Credits (Carbon Farming Initiative) Rule 2015* and the Department of Agriculture, Water and the Environment’s website (<https://www.awe.gov.au/>).

Projects must also meet conditions designed to help manage the effects of commercial tree plantings on water availability in locations where average annual rainfall exceeds 600 millimetres, also referred to as ‘the water rule’. More information can be obtained from the *Carbon Credits (Carbon Farming Initiative) Rule 2015* and the Department of Industry, Science, Energy and Resources’ website (<https://www.industry.gov.au/>).

**Table 2: Structure of the Determination**

	Main	Schedule 1	Schedule 2	Schedule 3	Schedule 4	Schedule 5	Schedule 6	Supplementary documents
Part 1 — Preliminary	X							
Part 2 — Plantation Forest Projects	X							
Part 3 — Project requirements	X							
- General	X							
- Information required in application	X							
- Eligibility requirements	X							
• Additional eligibility requirements		X	X	X	X			
- Stratification	X							
• Additional stratification requirements		X	X	X	X			
- Management regimes	X							
• Management requirements by activity			X					
- Newness and additionality	X							
Part 4 — Net abatement amount	X							
- Preliminary	X							
- FullCAM Modelling	X							
- Calculations	X							
Part 5 — Reporting, record-keeping and monitoring requirements	X							
- Reporting requirements	X							
- Record-keeping requirements	X							
- Monitoring requirements	X							
Part 6 — Dividing a plantation forest project	X							
<b>Error! Reference source not found.</b> — CEAs transferring unchanged from former determination						X		
<b>Error! Reference source not found.</b> — Species lists – Parts 1 to 3							X	
<b>Supplementary and other documents</b>								
FullCAM guidelines (incorporated)								X
Financial assessment guidance								X
Forest management plan guidelines								X

## Legislative authority for making the Determination

The Determination is made under subsection 106(1) of the Act, which gives the Minister the power to make a methodology determination by legislative instrument.

## Application of the Determination

The Determination sets out the detailed rules for implementing and monitoring offsets projects that increase carbon sequestration by establishing and maintaining a plantation forest, converting an existing plantation forest from a short rotation to a long rotation, or retaining forest (either plantation or permanent) on land under circumstances where the plantation forest would have otherwise converted to non-forested land. Broadly, plantation forests are plantations for the harvest of forest products that can be expected to reach forest cover before clearfelling. Permanent plantings are plantings that are not harvested other than in very limited circumstances (e.g. for ecological purposes).

Prior to 2020, the CFI Regulations excluded ERF projects that ceased or avoided harvesting of plantation forests based on the assumption that plantation forests are likely to need active management, generally accomplished through harvest and related practices. There was a concern that non-harvest plantations could result in potential adverse land management impacts, such as weed or fire risks. Following amendments to the CFI Regulations in 2020 by the *Carbon Credits (Carbon Farming Initiative) Amendment (Excluded Offsets Projects) Regulations 2020* (2020 Amendment Regulation), an exclusion was removed that now allows projects that cease or avoid harvesting of plantation forests to be eligible, subject to development of this Determination. The explanatory statement for the amended CFI regulations noted that any remaining risks from such projects would be considered and addressed in the eligibility requirements under the new Determination.

The rules set out in the Determination have been designed to reflect the requirements of the offsets integrity standards and ensure that emissions reductions are real and additional to business as usual. The offsets integrity standards require that an eligible project should result in carbon abatement that is unlikely to occur in the ordinary course of events and is eligible carbon abatement under the Act. In summary, the offsets integrity standards also require that:

- amounts are measurable and capable of being verified;
- the methods used are supported by clear and convincing evidence;
- material emissions which are a direct consequence of the project are deducted; and
- estimates, assumptions or projections used in a methodology determination should be conservative.

Project proponents wishing to implement projects under the Determination must make an application to the Regulator under Section 22 or Section 128 of the Act. They must also meet the general eligibility requirements for an offsets project set out in subsection 27(4) of the Act, which include compliance with the requirements set out in the Determination, and the additionality requirements in subsection 27(4A) of the Act. The additionality requirements are:

- the newness requirement;

- the regulatory additionality requirement; and
- the government program requirement.

Subsection 27(4A) of the Act provides that a methodology determination may specify requirements in lieu of the newness requirement or the regulatory additionality requirement. The Determination specifies requirements in lieu of the newness requirement (see Section 35) to permit some project activities, such as site preparation and planting, to be undertaken after a complete registration application has been submitted to the Regulator and prior to project registration, to provide more flexibility, given narrow optimal planting windows. The government program requirement is provided for in the *Carbon Credits (Carbon Farming Initiative) Rule 2015*. The regulatory additionality requirement specified in the Act applies to projects covered by the Determination.

### **Documents incorporated by reference**

The Determination requires abatement to be calculated using the Full Carbon Accounting Model (FullCAM) as in force from time to time. FullCAM is the model used to construct Australia's National Greenhouse Gas Inventory for the land sector.

The Determination sets out requirements for using FullCAM, while more detailed requirements and instructions are provided in FullCAM guidelines. When the Determination was made, FullCAM could be viewed on the Department of Industry, Science, Energy and Resources' website (<http://www.industry.gov.au>), and the FullCAM guidelines could be viewed on the Clean Energy Regulator's website (<http://www.cleanenergyregulator.gov.au>).

The incorporation of FullCAM and the FullCAM guidelines as in force from time to time is authorised by Section 106(8) of the Act.

### **Permanence period and discounts**

Section 23 of the Act provides that, if a project is a sequestration offsets project, an application to the Regulator under Section 22 must include a request that the project be subject to either a 100-year or 25-year permanence period. Then, if the Regulator declares that the project is an eligible offsets project, the Regulator will declare that the project is subject to a 100-year or 25-year permanence period. Once declared, the permanence period is fixed and it will not be possible for projects to 'move between' permanence periods.

If the project proponent elects a 25-year permanence period, a permanence discount applies in accordance with Section 16 of the Act. The permanence discount is 20 per cent of the net abatement number unless another percentage is specified in the legislative rules.

The *Carbon Credits (Carbon Farming Initiative) Rule 2015* applies a permanence period discount of 25 per cent to:

- new plantation forestry projects that have a rotation length of less than 20 years and which nominate a 25-year permanence period, and
- continuing plantation forestry projects, of any rotation length, which nominate a 25-year permanence period.

These types of projects are considered to be at an elevated risk of not replanting at the end of the 25-year permanence period and could consequently be over-credited, as maximum abatement is determined based on the long-term (100-year) average carbon stock. The higher discount helps meet the offsets integrity standard requirement for estimates, assumptions or projections used in a methodology determination to be conservative.

As they are sequestration offsets projects under Section 54 of the Act, projects undertaken in accordance with the Determination are subject to a risk of reversal buffer, as provided by Section 16 of the Act. The risk of reversal buffer number is 5 per cent unless another percentage is specified in the legislative rules.

### **Public Consultation**

The Determination was developed by the Regulator through a co-design process with industry, potential end-users, scientists, technical experts and the ERAC. The co-design process involved workshops, bilateral stakeholder consultation, and engaging technical experts.

An exposure draft of the Determination was published on the Department of Industry, Science, Energy and Resources' website for public consultation from 26 October 2021 to 23 November 2021. Eighteen submissions were received. In general, they indicated support for the proposed 2022 plantation forestry method and in particular for the increased flexibility and reduced barriers that the method brings, as well as for the introduction of the avoided conversion activities, which provide further opportunities to be credited for abatement. Details of the non-confidential submissions are provided on the Department's website (<https://www.industry.gov.au/>).

### **Determination details**

Details of the Determination are at Attachment A. Numbered sections in this explanatory statement align with the relevant sections of the Determination. The definition of terms highlighted in ***bold italics*** can be found in the Determination.

For the purposes of subsections 106(4), (4A) and (4B) of the Act, in making the Determination the Minister has had regard to, and agrees with, the advice of the ERAC that the Determination complies with the offsets integrity standards and that the Determination should be made. The Minister is satisfied that the carbon abatement used in ascertaining the carbon dioxide equivalent net abatement amount for a project is eligible carbon abatement from the project. The Minister has also had regard to whether any adverse environmental, economic or social impacts are likely to arise from the carrying out of the kind of project to which the Determination applies and to other relevant considerations.

A Statement of Compatibility with Human Rights, prepared in accordance with the *Human Rights (Parliamentary Scrutiny) Act 2011*, is at Attachment B.



## Details of the Determination

### Part 1—Preliminary

#### 1 Name

Section 1 sets out the full name of the Determination, which is the *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2022*.

#### 2 Commencement

Section 2 provides that the Determination commences on 31 January 2022.

#### 3 Authority

Section 3 provides that the Determination is made under subsection 106(1) of the Act.

Subsection 106(1) of the Act provides that the Minister may, by legislative instrument, make a certain type of determination. Subsection 106(2) of the Act specifies that the determination is to be known as a ***methodology determination***.

#### 4 Duration

Section 4 sets out the period during which the Determination is in force.

Under subparagraph 122(1)(b)(i) of the Act, a methodology Determination remains in force for the period specified in the Determination. The Determination will remain in force for the duration set out in Section 4 unless sooner revoked in accordance with Section 123 of the Act or Section 42 of the *Legislation Act 2003*.

Paragraph 4(a) provides that the Determination begins on commencement (as set out in Section 2).

Paragraph 4(b) provides that the Determination ends on the day before it would otherwise be repealed under subsection 50(1) of the *Legislation Act 2003*. Instruments are repealed under that provision on 1 April or 1 October following the tenth anniversary of registration on the Federal Register of Legislation.

#### 5 Definitions

Section 5 defines a number of terms used in the Determination. Generally, where terms are not defined in the Determination, they have the meaning given by Section 5 of the Act.

The following terms used in the Determination are particularly important because they help specify the project requirements in Parts 2 and 3 and Schedules 1 to 4.

***National Plantation Inventory*** is defined to mean the inventory of plantations established primarily for timber production in Australia that is managed by the Department of Agriculture, Water and Environment, as in force on the day this Determination commences. In 2021, the National Plantation Inventory could be viewed at <http://www.agriculture.gov.au>.

***National plantation inventory region*** is a region defined in the National Plantation Inventory. The effect of the National Plantation Inventory definition is that national plantation inventory regions as defined in the National Plantation Inventory on the day this Determination

commences are applicable for the purposes of determining project eligibility and calculating abatement.

**permanent planting** means a planting that is not harvested other than for ecological, fire management, personal (such as for firewood), or traditional indigenous or native title rights purposes. The term ‘permanent planting’ has the same meaning as it has under the *Carbon Credits (Carbon Farming Initiative) Regulations 2011*.

A permanent planting is not restrictive in terms of the species that may be planted, provided it is not a known weed species and forest cover can be reached (in the absence of a natural disturbance). This is explained in the note to the definition of permanent planting.

**plantation forest** means a plantation established by planting or seeding for the harvest of forest products. A forest product can include but is not limited to:

- sawn products;
- paper-based products;
- biomass for bioenergy production; and
- essential oils.

A plantation forest excludes horticultural plantings where the harvest does not involve removal of wood-based biomass, such as an orchard.

A plantation forest must be managed with the purpose of harvest involving removal of biomass, where harvesting means periodic clearfelling of the forest. To help ensure projects meet the requirement in the offsets integrity standards for providing carbon abatement that contributes to Australia’s climate change targets, plantation forests must be expected, in the absence of a natural disturbance, to reach forest cover before clearfelling. Management actions involving planting, re-seeding or coppicing can only occur after a harvest. A plantation forest can comprise a short rotation or long rotation plantation.

**rotation** means a phase that lasts from planting, seeding or coppicing to the subsequent clearfelling. The term is defined in this way to allow proponents flexibility in choosing a silvicultural technique to begin the rotation.

The following documents and models are defined in the Determination as in force from time to time consistent with subsection 106(8) of the Act:

- **CFI mapping guidelines** available at <http://www.cleanenergyregulator.gov.au>
- **FullCAM** (the Full Carbon Accounting Model) available at <http://www.industry.gov.au>
- **FullCAM guidelines** available at <http://www.cleanenergyregulator.gov.au>
- **NGER Regulations** (*National Greenhouse and Energy Reporting Regulations 2008*) available at <http://www.legislation.gov.au>

## 6 Meaning of pre-existing project and former determination

Section 6 sets out the meaning of a pre-existing project and former determination.

A plantation forest project is a **pre-existing project** if the Determination applies to it because of an approval under Section 130 of the Act, and the determination that first applied to the project was not an earlier version of the Determination. This section of the Act provides for

approval by the Regulator of the application of a methodology determination to a project during a project's reporting period; that is, the eligible offsets project is already established. This will have required a request under Section 128 of the Act. This section of the Act provides for a request by a project proponent for the Regulator to approve the application of a specified methodology determination to the project with effect from the start of the reporting period.

If the project had been part of more than one determination since it was newly established, then the *former determination* is defined to be the most recent past determination applied to the project.

#### 7 Factors and parameters from external sources

Under the Determination, certain factors or parameters used in calculating the net abatement must be obtained through a specified external source. Section 7 provides that where this is the case, the proponent must use the instrument or writing in force at the end of the reporting period for which the calculation is made. Subsection 106(8) of the Act provides that a methodology determination may refer to a matter contained in an instrument or writing as in force at a particular time, or as in force from time to time.

For example, Section 7 applies to the version of FullCAM used to model the carbon stocks under the project, meaning that a proponent must use the version of FullCAM that is available at the end of the reporting period. Section 7 also means that the proponent must use the version of the FullCAM guidelines available at the end of the reporting period.

### **Part 2—Plantation forest projects**

#### 8 Plantation forest projects and permanent planting projects

The effect of paragraphs 27(4)(b) and 106(1)(a) of the Act is that a project must be covered by a methodology determination, and that the methodology determination must specify the kind of offsets project to which it applies.

Subsection 8(1) provides that the Determination applies to sequestration offsets projects that sequester carbon through establishing new plantation forests, converting short-rotation plantation forests to long-rotation plantation forests, continuing existing plantation forests, or transitioning existing plantation forests to permanent plantings. Each of these forms the basis of a project activity and a project can have more than one project activity. The projects must be expected to result in eligible carbon abatement.

Subsection 8(2) provides that a project which involves establishing a new plantation forest, converting a short rotation plantation forest to a long rotation plantation forest, or continuing existing plantation forestry activities is known as a 'plantation forest project'.

Subsection 8(3) provides that a project which involves transitioning an existing plantation forest to a permanent planting is known as a 'permanent planting project'.

As a project can have more than one project activity (provided they are undertaken on separate CEAs), a project can be both a plantation forest project and a permanent planting project.

## **Part 3—Project requirements**

### **Division 3.1—General**

#### 9 Operation of this Part

Section 9 indicates that Part 3 of the Determination specifies requirements that must be met in order for a plantation forest project or a permanent planting project to be an eligible offsets project.

The effect of paragraph 106(1)(b) of the Act is that a methodology determination must set out requirements that must be met for a project to be an eligible offsets project. Under paragraph 27(4)(c) of the Act, the Regulator must not declare that an offsets project is an eligible offsets project unless the Regulator is satisfied that the project meets these requirements. The effect of Section 35 of the Act is that the Regulator may, if an appropriate regulation or legislative rule is made, revoke the declaration that a project is an eligible offsets project if eligibility requirements have not been met. s 32 of the CFI Rule provides the requirements which must be met for the Regulator to revoke a declaration that a project is an eligible offsets project.

### **Division 3.2—Information required in application**

#### 10 Information required in application

Section 10 provides that the project proponent must provide the Regulator with evidence that the project area includes eligible land, to help demonstrate that the project meets the additionality requirements of the Act. Section 10 also provides that for certain CEAs, a forest management plan must also be provided.

Subsection 10(1) provides that this section applies when applying for declaration as an eligible offsets project under Section 22 of the Act, or applying to vary the project area (as provided for under Section 29 of the Act) or approval to transition from one method to another (as provided for under Section 128 of the Act).

Subsections 10(2) and 10(3) require applications to allocate and specify one or more areas of land and the project activity to be undertaken on each area of land. Applications must provide evidence that each area of land is eligible for the specified project activity. The requirements for land to be eligible land for a particular project activity are set out in the Schedule dealing with that project activity.

Subsection 10(4) specifies that only one project activity may be allocated to an area of land. Different project areas or different parts of a project area may be allocated to different project activities; however a CEA can be established only on land allocated to a single project activity.

Subsection 10(5) defines the relevant application as the one for the land which has been allocated to a project activity.

Subsection 10(6) provides that the application must include remotely sensed imagery covering the period of seven years before the eligibility date for the land. Any remotely sensed imagery must be date-stamped and geo-referenced. If the land is eligible for a new

plantation, the remotely sensed imagery should show that there has been no plantation forest (or any other forest) at any time over the seven-year period. If the land is eligible for conversion, the remotely sensed imagery should show that the land has been used for a plantation forest for either all or part of the seven-year period before the eligibility date. If the land is eligible for continuing plantation forestry or permanent plantings, the remote sensed imagery should show that the land has been used for a plantation forest for all or part of the seven-year period. The frequency of imagery should be sufficient to demonstrate that these requirements are met across the entire seven-year period.

Subsection 10(7) provides that if a proponent proposes to establish certain types of CEAs, the application must specify the proposed CEA and the project activity to be conducted, and include a forest management plan as it relates to the proposed CEA. The requirements for the forest management plan to be included in the application are specified in subsequent Sections 23, 29, 30, 33 and 34. If the project proponent does not propose to establish certain types of CEAs, then the proposed CEA can be specified and forest management plan included in the first offsets report.

### **Division 3.3—Eligibility requirements**

#### **11 Certain forestry managed investment schemes excluded**

Section 11 includes an ongoing eligibility requirement that no plantation in a project is managed as part of a forestry managed investment scheme which is designed in such a way that payments made by participants under the scheme could be deductible under Section 394-10 of the *Income Tax Assessment Act 1997*.

However, the requirement does not prevent a project from including a plantation that was once managed as part of such a forestry management investment scheme, but which ceased to be so managed before becoming part of the project.

This complements the general restriction in the list of excluded offsets projects for the establishment of a forest under a forestry managed investment scheme for Division 394 of Part 3-45 of the *Income Tax Assessment Act 1997* (see paragraph 27(4)(m) and Section 56 of the Act and regulation 3.36 of the *Carbon Credits (Carbon Farming Initiative) Regulations 2011*). While the focus of excluded offsets projects is at the initial declaration of a project, the eligibility requirement in Section 11 will apply throughout the crediting period. In particular, the effect of Section 35 of the Act and Section 32 of the *Carbon Credits (Carbon Farming Initiative) Rule 2015* is that the Regulator may revoke the declaration that a project is an eligible offsets project if the plantation becomes a forestry managed investment scheme and this eligibility requirement is no longer met. Under Section 89 of the CFI Act, this may result in the project being required to relinquish ACCUs. Non-compliance with this requirement could be identified in an audit report or compliance investigations by the Regulator.

If a project proponent changed their mind and wanted to support a plantation through taking advantage of tax deductions available under Section 394-10 of the *Income Tax Assessment Act 1997* rather than under the Act (or if a proponent wanted to withdraw an eligible project for another reason), they could apply for voluntary revocation of their declaration under Sections 29 and 30 of the *Carbon Credits (Carbon Farming Initiative) Rule 2015*. This may

require relinquishment of credits equivalent to those issued for the project. It would also be possible to move part of the project area with such a forest to another sequestration offsets project under Section 23 of the *Carbon Credits (Carbon Farming Initiative) Rule 2015* and then apply for revocation under Sections 29 or 30 (with relinquishment of credits related to that forest).

#### 12 Project must include project activity on eligible land

A project must be one in which a project activity set out in the Determination is conducted on the appropriate kind of eligible land. The eligible land requirements for each project type are given in Schedules 1, 2, 3 and 4.

Schedules 2 and 3 requires that for the conversion and continuing plantation project activities, no part of the land is further than 100 and 50 kilometres from the nearest national plantation inventory region, respectively, as defined in the national plantation inventory. In 2021, spatial files delineating the national plantation regions could be downloaded at:

<https://www.awe.gov.au/abares/forestsaustralia/forest-data-maps-and-tools/spatial-data/australias-plantations>.

### **Division 3.4—Stratification**

#### 13 CEAs must be defined

Section 13 provides that the project proponent must stratify the land on which the project is carried out into CEAs. A CEA is as an area for which abatement will be calculated under the Determination.

The number of CEAs into which the project area can be stratified is not limited, and a project may consist of a single CEA.

The date that a CEA is taken to be in existence varies according to the project activity and are given in Schedules 1, 2, 3 and 4.

CEAs are defined at the date when the project activity commences, to ensure that crediting only commences after there is a deviation from the baseline scenario. For example, if the project activity is the conversion of an existing short-rotation plantation to a long-rotation plantation, then the CEA must be defined for the first offsets report, in accordance with clause 7 of Schedule 2. The forest management plan, which must be provided with the offsets report, must set out how the project activity has deviated from the baseline scenario. Ending the current rotation and establishing a long rotation with the same species is permitted under the Determination provided that the species is not listed in Schedule 6 Part 1.

The effect of subsection 13(3) is that certain CEAs may not be defined unless it is in accordance with the details specified in the application, including the forest management plan that has been provided with the application. Additionally, certain CEAs must be included in the first offsets report after approval or declaration is given in relation to the application.

#### 14 Requirements for CEAs

Subsection 14(1) provides that each CEA must consist only of land that is within an area allocated to a project activity in accordance with Section 10 (information that is provided with the application), on which that project activity will be undertaken, and that has the same

responsible landholders. The effect of subsection 14(1) is that each CEA is a subset of the project area in which there is the same responsible landholder and the proponent undertakes the allocated project activity. Areas in which the project cannot be carried out, for example a dam or forest that has never been cleared, cannot be included in a CEA.

Subsection 14(2) provides that a CEA on which the permanent planting project activity will be undertaken must either contain no remnant plantation forest (i.e. be fallow), or contain only remnant plantation forest. The purpose of subsection 14(2) is to ensure that each permanent planting CEA has a single forest start date and has been under the same management regime at all times.

Subsection 14(3) provides that CEAs are classified according to the relevant project activity to be undertaken in that CEA.

Subsections 14(4) to (6) provide that an ex-plantation CEA (on which a permanent planting project activity is undertaken) is classified as follows:

- A permanent planting CEA — if it contains no remnant plantation forest (that is, if new permanent plantings will be established on that CEA) — which is:
  - A permanent planting (environmental) CEA only if it is an environmental planting (that is, all the species used are native to the local area and the forest is representative of a local native vegetation community), or
  - A permanent planting (ex-commercial CEA), otherwise.
- A remnant plantation CEA — if it contains only remnant plantation forest (that is, if the plantation forest that was present on the land on the application date will be retained as the permanent forest on that CEA) — which is either:
  - A remnant plantation A CEA for permanent planting project activity A, which involves retaining the remnant plantation as a permanent forest, or
  - A remnant plantation B CEA for the permanent planting project activity B, which involves maintaining the plantation up to a clearfell and subsequently undertaking an environmental planting, after which it will become a permanent planting (environmental) CEA.

There is a potential permanence risk in situations where participants choose to retain or establish a forest that is not an environmental planting and elect a 25-year permanence period. An additional discount is therefore imposed on abatement from remnant plantation CEAs and permanent planting (ex-commercial) CEAs when a 25-year permanence period is selected to manage these risks. This helps meet the offsets integrity standard requirement for estimates, assumptions or projections used in a methodology determination to be conservative.

Subsection 14(7) provides that a CEA must be more than 0.2 hectares because this is the minimum area of land required to meet Australia's international greenhouse gas reporting requirements.

Subsection 14(8) provides that the same management regime must be applied uniformly across the whole area of a new plantation CEA, a conversion CEA or a continuing plantation CEA. This is to ensure consistency for modelling purposes.

Subsection 14(9) provides that an ex-plantation CEA must be stratified on the basis of uniform biophysical characteristics, including soil type, aspect, slope and species, or mix of species. This is to ensure consistency for modelling purposes.

Stratification on the basis of biophysical characteristics is not required for new plantation, conversion or continuing plantation CEAs, based on the assumption that in plantation forests the timing and extent of management actions will vary with biophysical conditions in order to maximise the timber value. As such, homogeneous management actions will reflect relatively homogeneous biophysical conditions. As each separate management action will be modelled in FullCAM, it is important that the modelled management actions match those that have actually occurred, or are planned to occur, within the CEA. In contrast to a plantation forest, management actions are less likely to vary with biophysical conditions in a permanent forest because the forest is not being prepared for harvest. Thus ex-plantation CEAs must be stratified based on biophysical characteristics rather than management actions.

Subsection 14(10) provides that a remnant plantation CEA must consist of remnant plantation forest that has a single forest start date, and has been under the same management regime at all times since that date. This is to ensure consistency for modelling purposes.

Subsection 14(11) provides that a permanent planting CEA must consist of a permanent planting that has a single forest start date, and has been under the same management regime at all times since that date. This is to ensure consistency for modelling purposes.

Subsection 14(12) specifies that a CEA must be a single area of land, or be comprised of multiple areas of land that are not separated by more than 250 metres. That is, it does not matter that a CEA is 'split' by an area whose carbon stock is not modelled, as long as the distance between the separate parts of the CEA do not exceed 250 metres.

Section 14 requires each CEA to contain a model point location. A model point location is a location, identified in latitude and longitude, for use in FullCAM to model carbon stocks for a CEA. Subsections 14(13), (14) and (15) set out requirements for determining the model point location so modelling in FullCAM accurately represents the whole CEA. The requirements are that the model point location must be within the CEA, at the approximate centre of the CEA and representative of the CEA. The 250 metre limit in paragraph 14(12)(b) also supports this purpose where a CEA comprises multiple areas of land.

In determining whether a model point location is representative of a CEA, consideration should be given to characteristics affecting spatial variation in forest productivity, such as soil type and fertility, aspect and slope.

Figure 3 shows an example of a CEA comprising multiple areas of land not separated by more than 250 metres, with a model point location within the CEA and at the approximate centre of the CEA. Figure 4 shows an example of CEAs with model point locations.



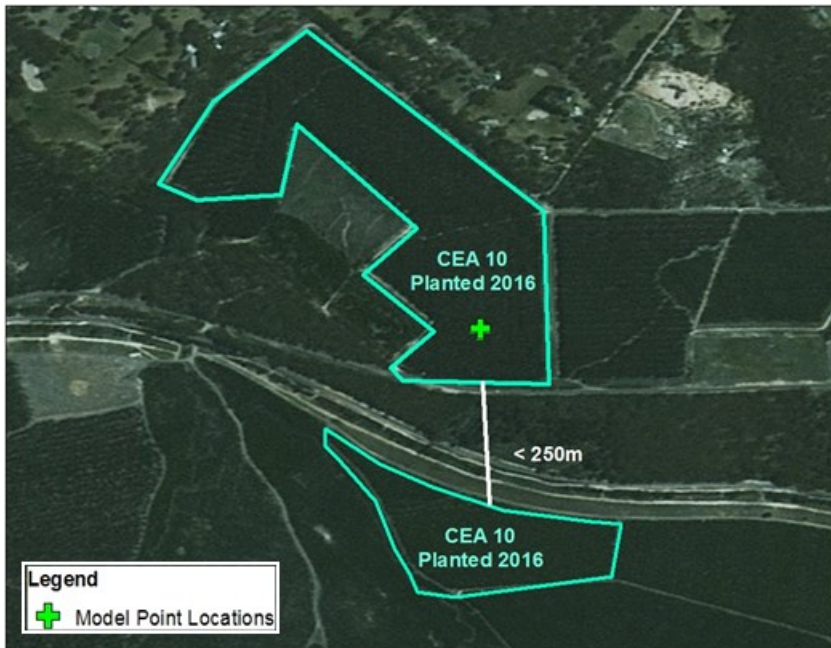


Figure 3. A single CEA split by a road, where the distance between the two parts of the CEA is less than 250 m.

Satellite image source: ESRI World Imagery.



Figure 4. Example showing location of a model point location in each CEA.

Satellite image source: ESRI World Imagery.

## 15 Boundaries and mapping

Section 15 provides that the geographic boundaries of each CEA must be defined in accordance with the CFI mapping guidelines. In 2021, the CFI mapping guidelines could be viewed on the Clean Energy Regulator's website: <http://www.cleanenergyregulator.gov.au>.

The boundaries of each CEA must be identified before the submission of the first offsets report for the project, and for certain CEAs, with the application under Sections 22, 29 or 128 of the CFI Act. This is because stratification into CEAs is an essential part of determining the project's eligibility.

#### 16 No re-stratification unless permitted by this Division

Section 16 provides that a CEA must not be re-stratified except in accordance with this Division and the appropriate Schedule for the project activity. That is, the boundaries of a CEA must not be changed except in the case of a natural disturbance, change in management regime, or removal of an area that is no longer suitable for plantation growth as described in Sections 18, 19 and 20, respectively.

#### 17 Conversion of a remnant plantation B CEA to a permanent planting (environmental) CEA

Section 17 provides that a remnant plantation B CEA becomes a permanent planting (environmental) CEA at the conclusion of the clearfell and any resulting harvesting that is in accordance with the management plan for the CEA. That is, the conversion of a remnant plantation B CEA to a permanent planting (environmental) CEA will have been planned and documented in the forest management plan provided with the application, and when this occurs in accordance with the forest management plan, the remnant plantation B CEA is reclassified as a permanent planting (environmental) CEA.

#### 18 Re-stratification following disturbance event

The intent of Section 18 is that if a natural disturbance has affected part of a CEA, and the proponent proposes to undertake a new set of management actions in the affected part of the CEA, then the affected CEA must be split into at least two CEAs, and the new CEAs must meet the requirements of Section 14. The result is that the newly created natural disturbance-affected CEA must be allocated a new model point location, and the natural disturbance and subsequent management actions must be modelled in FullCAM. The newly created CEA that was unaffected by natural disturbance must also be allocated a new model point location but only the management actions which are applied to that CEA are to be modelled. This change must be documented in the next offsets report.

The procedures for modelling a natural disturbance affecting only part of a CEA, where no separate management actions are proposed in the affected part, are described in the FullCAM guidelines.

However, if a natural disturbance affects part of a CEA, but no separate management actions are proposed in the affected part, then re-stratification is not required, and the natural disturbance must be modelled as occurring across the affected part of the CEA. This is achieved by estimating the proportion of the CEA affected and entering this data into FullCAM when the disturbance event is created.

#### 19 Re-stratification due to change in management regime

Under Section 19, if the proponent proposes a new set of management actions in part of the CEA that are not a consequence of a natural disturbance, then this should trigger re-stratification of the CEA followed by re-modelling of each new CEA in FullCAM. However, when new management activities are proposed that were not modelled in the previous

reporting period (that is, they were not incorporated into the long-term project scenario), there is a risk that the change could result in negative abatement. Negative abatement is particularly a risk when:

- the proposed management action results in a reduction of carbon stocks (for instance thinning, reducing the rotation age), which reduce the long-term project scenario carbon stock; or
- the project scenario carbon stocks are close to or have exceeded the long-term project scenario carbon stocks.

In such cases, the project carbon stocks reported in a previous period may exceed the new long-term average project carbon stocks, and an over-issuance of credits may occur. To prevent this outcome, Section 19 requires a project proponent to perform the test of negative abatement set out in Section 28, before the proponent can proceed with the re-stratification due to change in management regime.

Section 19 provides that re-stratification is required if part of a CEA is managed differently from the remainder of the CEA. The affected CEA must be split into at least two new CEAs if the following conditions are met:

- the proponent proposes to treat part of a CEA with management actions that differ from those proposed for the remainder of the CEA;
- those management actions were not described in the management schedule as it stood in the previous reporting period; and
- either the CEA has not been affected by a natural disturbance such as a fire, or those management actions were not taken due to natural disturbance.

The new CEAs must meet the requirements of Section 14. The result is that each newly created CEA must be allocated a new model point location, and the management actions specific to each CEA must be modelled in FullCAM. This change must be documented in the next offsets report.

## 20 Re-stratification to remove area that is no longer suitable for plantation growth

Section 20 describes the circumstances under which a CEA other than an ex-plantation CEA can be re-stratified to remove an area of land from the project area. For instance, this could include removing an area of trees from a CEA, or removing a whole CEA, where tree growth is deemed to be not commercially viable following a natural disturbance.

Subsection 20(1) specifies that evidence will be required to demonstrate that maintaining the affected area in a CEA is insufficient for those trees to become commercially viable. Evidence of whether the growth of the trees is commercially viable may be informed by the records kept for Section 61. If evidence to satisfy subsection 20(1) is provided, subsection 20(2) permits the affected area to be re-stratified to remove it from the project area. Subsection 56(4) contains the evidence requirements to support the decision to re-stratify under subsection 20(1).

A consequence of re-stratifying under Section 20 will be a loss of net carbon stock during the current reporting period. This affects the change in carbon stock calculations in Section 48.

## **Division 3.5—Management regimes**

### **Subdivision 3.5.1—General**

Management regime is defined in Section 5. Management regimes for a rotation include tree species, rotation period and management actions or disturbance events.

#### 21 Management actions and when they occur

Section 21 sets out when a management action that affects the project carbon stocks is taken to occur for modelling purposes. Actions undertaken by the project proponent as part of plantation management are referred to in the Determination as management actions.

Subsection 21(1) lists the management actions applicable to the Determination. Instructions on how to model each of these management actions are contained in the FullCAM guidelines.

Subsection 21(2) specifies when a management action that occurs over more than one day can be treated as a single management action. Planting, seeding or coppicing may be treated as a single management action provided the time over which the actions occur is no longer than the period required to establish a rotation or permanent planting. The start date for planting, seeding and coppicing are specified in subsections 21(7) and 21(8). Other management actions which occur, continuously or intermittently, over a period of up to 12 months can be treated as a single management action.

Subsection 21(3) specifies that terms used in subsection (1) have the meaning given in the FullCAM guidelines. This is to differentiate the meaning of these management actions from other sections where a definition only applies to a specific section, such as the use of ‘pruned’ and ‘thinned’ in Schedule 2.

Subsection 21(4) defines the management actions whose names do not correspond directly to management actions in FullCAM. Thinning and clearfelling occur with harvest if there is any significant recovery of forest product following the thin or clearfell. Clearfelling is differentiated from thinning in that a clearfell involves the removal of all trees in the area. A controlled burn is a human-induced fire which kills no trees. If any trees are killed, there is deemed to be no controlled burn and this management action needs to be replaced by a fire that is a disturbance event. Salvage harvesting means that the area is clearfelled and forest products are recovered following a disturbance event.

Subsection 21(5) provides that salvage harvesting may be undertaken in a CEA only following a fire or natural disturbance that affects the whole of the CEA. A requirement of salvage harvesting is that it must be applied to the entire CEA. If necessary, the CEA may need to be re-stratified before a salvage harvest can be modelled in FullCAM. The baseline scenario excludes salvage harvesting because this scenario assumes timber/forest products can only be harvested according to the default management regime.

Subsection 21(6) provides that if the rotation was begun by planting or seeding, the starting date is the date given by subsection 21(7). If the rotation was begun by coppicing, the starting date is the date given by subsection 21(8).

Subsection 21(7) sets out time restrictions that define the planting date and initial planting. The choice of planting date is conditional on the success of the initial planting. An initial planting requires all the area to be planted or seeded with trees within a period of up to

6 months. If at least 80 per cent of trees survive the initial planting for at least 12 months, the proponent can claim the start date to occur at the time the initial planting is completed. In this instance, this date is retained even if some further planting occurs after this date. If either of these conditions are not met, then the planting date must be taken to be the date that all planting or seeding is completed.

Subsection 21(8) has the effect that, for the purpose of FullCAM modelling, beginning a rotation by coppice occurs 6 months after the previous clearfelling. This is a conservative assumption in line with the existing timeframes between rotations for modelling purposes.

Subsection 21(9) affects the event date for modelling salvage harvesting in FullCAM. Following a fire, salvage harvesting is specified to follow 30 days after the date the fire occurred. Following any other type of disturbance event, salvage harvesting is specified to occur on the same date that the natural disturbance occurred.

Subsection 21(10) affects the FullCAM event date for management actions other than planting, seeding, coppicing or salvage harvesting. The FullCAM ‘event queue’ requires that such management events be modelled on a single date, even where the management action might be spread over a number of days. If the management action occurs on a single day, the FullCAM management event should be modelled as occurring on that day. If the management activity occurs over a number of days (for example, thinning or pruning), then the FullCAM management event should be modelled as occurring on the first day of the management action.

## 22 Disturbance events and when they occur

Section 22 specifies when certain events (disturbance events) are required to be recorded as occurring. Subsection 22(1) sets out the criteria for defining disturbance events applicable to CEAs. The FullCAM guidelines provide instructions on how to model disturbance events in FullCAM. Fires, other than controlled burns, and other natural disturbances which affect less than 5 per cent of the CEA need not be modelled. However, if there are consequent management actions following the disturbance event, then the affected area may need to be re-stratified in accordance with Section 20. Paragraph 22(1)(c) provides that a failure of the CEA to satisfy the forest development condition is also a disturbance event.

Subsection 22(2) defines the forest development condition. The forest development condition specifies the criteria which determines that the forest is sequestering carbon. At least one of the criteria outlined in subsections (a) (e) must be met. Failure to meet the forest development condition implies that a growth interruption must be modelled in FullCAM.

Paragraph 22(3)(a) specifies that fires or natural disturbances are taken to occur on the day they began. But if the date they began is unknown, they are taken to occur on the day they were first observed.

Paragraph 22(3)(b) specifies when a failure to satisfy the forest development condition in a reporting period is taken to occur. In effect, the growth interruption is taken to occur on the date from which growth is expected to recover.

## 23 Requirements for a forest management plan

The Determination requires the proponent to develop a forest management plan. A forest management plan is a document that sets out the management actions, management activities (for ex-plantation CEAs), disturbance events and other relevant information for a project under the 2022 plantation forestry method. The Determination distinguishes between management actions (which are the types listed in the FullCAM guidelines and modelled in FullCAM) and other management activities such as monitoring and controlling pests and disease, which are required to be detailed for specific project activities.

Subsection 23(1) provides that each project must create and maintain a forest management plan.

Subsection 23(2) details the required content of a forest management plan for each CEA at a specified date.

Paragraph 23(2)(a) provides that the management record must detail all the management actions undertaken and disturbance events within the CEA since the forest start date.

Paragraph 23(2)(b) provides that the forest management plan must include explanations with supporting evidence of how each management action was undertaken.

Paragraph 23(2)(c) provides that the forest management plan must set out the current management regime for the CEA. Details of the content of the current management regime are set out in Section 27.

Note that the activities covered by paragraph 23(2)(a) may also be listed under paragraph 23(2)(c). There is no requirement to duplicate these, and they should be recorded under the current management regime rather than listed separately.

Paragraph 23(2)(d) provides that the forest management plan must set out the default management regime for the CEA. Details of the content of the default management regime are set out in Section 26. This will be the same as the current management regime unless there has been a disturbance event during the rotation.

Paragraph 23(2)(e) provides that if the default management regime differs from what was listed as the default management regime in the previous reporting period, then the forest management plan must set out the reason for the change. For example, during the previous reporting period the proponent sets out a management regime with a commercial thinning at age 13 years. In preparing the forest management plan for the current reporting period, the proponent now intends to undertake the commercial thinning at age 12 years to secure an earlier stream of income. The forest management plan must include this information as the reason for the change in the proposed regime.

Paragraph 23(2)(f) applies when a CEA is for a conversion from a short rotation to a long rotation. In this situation, the management schedule must include the default baseline management regime as provided for in clause 8 of Schedule 2.

Paragraph 23(2)(g) provides that the forest management plan must record the management actions and disturbance events that occur and include the specifications for how they were modelled in FullCAM. Subparagraph 23(2)(g)(i) provides that the time of the action or event

in relation to the starting date for the rotation is to be recorded, which is the time used to model the action or event in FullCAM. Subparagraph 23(2)(g)(ii) provides that the FullCAM event type and FullCAM standard event corresponding to the management action or disturbance event must be recorded. Subparagraph 23(2)(g)(iii) provides that the forest management plan must set out the parameter values entered, or expected to be entered, into FullCAM, where these are not the defaults. This includes both the products at the end of the current regime and under the proposed management regime. It applies to both the final harvest of the plantation and any commercial thinning undertaken during the rotation. This includes a breakdown of sawlog grades and the proportion of pulplogs.

Paragraph 23(2)(h) specifies that a description must be included for any natural disturbance or growth interruption included in the forest management plan.

Paragraph 23(2)(i) specifies that an explanation of how records are made and kept for Sections 62 and 63 must be included in the forest management plan.

Subsection 23(3) specifies when the first forest management plan must be prepared. The first plan must be created before the scenario simulation for the first offsets report is created under Section 39.

Subsection 23(4) sets out upper limits on rotation lengths under the current management regime and default regime if the CEA is not an ex-plantation CEA. Subparagraph 23(4)(a) specifies that for an LR (long rotation) species for the land, this must not be greater than the maximum clearfell age listed for the species in the FullCAM guidelines. Subparagraph 23(4)(b) specifies that for any other species, this must not be greater than 60 years. The upper limits helps avoid unrealistically optimistic modelling of the long-term feasibility of the proposed management regime. The maximum rotation length specified is to ensure that the modelled carbon sequestration does not exceed a realistic management scenario for the species.

## 24 Updating a forest management plan

Section 24 provides that the forest management plan must be either prepared (that is, created from scratch) or updated before modelling is undertaken as part of an offsets report.

Subsection 24(2) provides that if at any point a project proponent proposes to undertake an action inconsistently with the current management regime set out in a forest management plan, then the proponent must update the forest management plan before the inconsistent action is taken.

Subsection 24(3) provides that if a management action is applied or a disturbance event occurs in a CEA, then the management record must be updated as soon as practical. This record is essential as it will be used in modelling for future offset reports.

Subsection 24(4) specifies what is considered to be an action for subsection (2).

Subsection 24(5) specifies that if a project proponent proposes to undertake or has undertaken an activity that is inconsistent with the forest management plan in relation to the requirements in Section 33, the plan must be updated. This record is important for reporting in future offsets reports. Subsection 24(6) lists what is considered to be an activity for subsection 24(5), including undertaking a planned activity at a different time to the one scheduled,

undertaking an activity not set out in the forest management plan, and not undertaking an activity that is set out in the forest management plan.

#### 25 Requirement to provide a forest management plan to the Regulator

Section 25 only applies to conversion CEAs where the default baseline management regime or the current management regime includes a UR species, and to permanent planting CEAs. Subsection 25(2) provides that when a forest management plan is updated to undertake an action that is inconsistent with the current management regime or an activity that is inconsistent with the forest management plan, a copy of the updated management plan must be provided to the Regulator within 15 months. This requirement has been applied to these CEAs due to the elevated integrity and adverse impact risks.

Subsection 25(3) applies a materiality threshold whereby subsection (2) does not apply if the action or activity occurs as planned within 3 months of the scheduled date.

#### 26 The *current management regime* and the *default management regime*

Under the Determination, the set of management actions applied to a single rotation forms a management regime. For a rotation in progress, this is the *current management regime*. For the purpose of modelling subsequent rotations, this is the *default management regime*.

Subsection 26(1) specifies that for permanent planting CEAs, which are not-for-harvest and therefore do not have rotations, this section applies as though a rotation consists of the period between the forest start date or the eligibility date for the CEA, whichever is earlier, and the end of the permanence period for the project.

Subsection 26(2) defines the current management regime, which forms part of the forest management plan, and provides that it must consist of:

- the choice of species grown in the CEA for the current rotation;
- the management actions that have already been applied within the CEA during the current rotation (including those applied because of natural disturbance) and disturbance events that have already occurred; and
- the management actions that will be applied to the CEA for the remainder of the current rotation.

The current management regime must also set out the times at which each management action is intended to occur or has occurred, in accordance with Section 22.

Subsection 26(3) defines the default management regime, which forms part of the forest management plan. The basis for the default management regime (used to model subsequent rotations) is always the current management regime (used to model the current rotation), due to the assumption for modelling purposes that an existing rotation would be replicated in the subsequent rotation. The default management regime will differ from the current management regime only when a natural disturbance has occurred in the CEA during the current management regime. The natural disturbance must be recorded in the current management regime, but this is not replicated in the default management regime, which is the same as the current management regime as it stood immediately before the disturbance. As a result, when a CEA is between rotations, the current management regime and default management regime



are the same as the default management regime at the end of the previous rotation, as specified in subsection 26(4).

#### 27 Forest management plan for a re-stratified CEA

Section 27 details what must occur if a CEA is re-stratified in accordance with Section 18, 19 or 20. Subsection 27(1) provides that the forest management plan must be updated in relation to each new CEA as soon as practicable in accordance with Division 3.

Subsection 27(2) provides that for each new CEA, the revised forest management plan must set out the same details of all management actions undertaken and disturbance events that have occurred up to the date of creation of the new CEA.

Subsection 27(3) provides that the default management regime that is applied to the new CEA will be the same as the default management regime that existed for the original CEA immediately before the creation of the new CEA. The default baseline management regime for the new CEA will be the same as it stood at the eligibility date. If the project proponent wishes to change the default management regime, the proponent must first update the forest management plan in accordance with this section, and then vary it in accordance with Section 25.

Subsection 27(4) provides that in applying 23(2)(e) — which requires the forest management plan to set out the reasons for the change if the default management regime is different to the one at the end of the previous reporting period — the comparison is to be made with the default management regime in relation to the original CEA for the end of the previous reporting period.

#### 28 Assessing a proposed change to a management regime

Section 28 requires project proponents to perform a ‘test’ of negative abatement to determine whether a proposed change in the management regime can proceed in certain scenarios. The Determinations credits on the basis of long term average carbon stocks for all CEAs (except ex-plantation CEAs). If there is a change that results in a decrease in the long term average carbon stocks after credits have been issued on the assumption of greater long term average carbon stocks, this may result in an over-issuance. Note that this test is applied at the project rather than CEA level, which means that a change that leads to a decrease in the long term average carbon stocks for one CEA is permitted where a change leads to a corresponding increase in long term average carbon stocks for another CEA. All proposed changes to the management regime must be modelled together, rather than individually, to ensure that the cumulative effect on the net abatement amount is calculated. Subsection 28(1) specifies that this section applies to a permanent planting CEA, which is not-for-harvest and therefore does not have rotations, as though a rotation consists of the period between the forest start date or the eligibility date for the CEA, whichever is earlier, and the end of the permanence period for the project.

Subsection 28(2) specifies that this applies if a project proponent proposes during a rotation in a CEA to undertake an action that is inconsistent with the current management regime for that CEA in the forest management plan and the CEA has been reported on in an offsets report, that is, the actions were not modelled in the previous reporting period and the actions were not incorporated into the long-term project scenario. Subsection 28(3) specifies what is considered to be an action for subsection (2).

Paragraph 28(5) requires that, if actions are proposed to be undertaken in only part of CEA, the CEA must be divided accordingly, with each new CEA meeting the requirements of Section 14.

Subsection 28(6) provides that if more than one action to which Section 28 applies is taken during a reporting period, those actions can be treated as a single action for the purposes of subsection 28(7) and (8).

Before taking an action, or set of actions, subsection 28(7)(a) requires an assessment of the net abatement for the project for the current reporting period that would be produced as calculated under Part 4 (the proposed abatement). If the proposed abatement is less than zero, subsection 28(b) requires an assessment of the net abatement amount for the project for the current reporting period that would be produced if the action, or set of actions, were not taken, as calculated under Part 4 (the default abatement).

Subsection 28(8) provides that the action, or set of actions, can only be taken if the proposed abatement is greater than, or equal to, zero or the default abatement, or if the long-term average net carbon stock as calculated when calculating the proposed abatement is greater than, or equal to, the long-term average net carbon stock as calculated when calculating the default abatement. The long-term average net carbon stock is the amount given by equation 13 in Section 46.

Notably, Section 28 only restricts changes to the proposed management regime of a CEA if the changes result in reducing the carbon stock over the long term. It is not intended to stop proponents from adding a CEA through re-stratification where the addition results in negative abatement. For example, if a CEA is added to the project whose carbon stock is significantly below the baseline for that CEA, then it could generate a negative abatement amount. In this situation, it can reasonably be assumed that through time, the CEA will generate positive abatement.

In addition, the intention of Section 28 is not to disadvantage proponents with projects affected by natural disturbances. Subsection 28(4) provides that if the CEA is affected by a natural disturbance, then Section 28 does not apply for the rest of the rotation. This is to be applied in conjunction with Section 18, where a natural disturbance that leads the proponent to change management actions across different parts of the CEA triggers a requirement to re-stratify the CEA. Section 28 ensures that proponents can update management regimes in CEAs not affected by natural disturbances in the event that one or more CEAs have brought the project into negative abatement due to natural disturbance.

Section 49 interacts with Section 28 by allowing a net carbon stock amount less than the maximum abatement that can be claimed to be reported. Project proponents may choose to do this if they are uncertain about what their proposed management regime may be in future reporting periods, and would prefer to not risk restricting future management options by reaching the long-term average project carbon stock before it suits their long-term management intentions to do so.

### **Subdivision 3.5.3—Conversion CEAs**

#### 29 Additional requirements for a forest management plan for a conversion CEA

Section 29 applies additional requirements for a forest management plan for a conversion CEA.

Subsection 29(2) details the requirements for the forest management plan if either the default baseline management regime or the current management regime includes an UR species. Paragraph 29(2)(a) specifies that the forest management plan must outline how the management of the plantation forest will change or has changed since its establishment as a conversion CEA. Paragraph 29(2)(b) specifies that the forest management plan must provide evidence that demonstrates management actions in the CEA are consistent with the management regime which includes the UR species. Paragraph 29(2)(c) specifies that the forest management plan must include a statement from a qualified independent person certifying their opinion that the management actions and activities undertaken in relation to the CEA are consistent with paragraph (b). The intent of these provisions is to provide assurance that the stated rotation length in the default baseline management regime or current management regime is consistent with how the plantation forest has been or will be managed. UR species are those species where the data shows that these can be grown in that region as either short or long rotations, so independently verified evidence is required to provide assurance that the plantation forest has been or will be managed in a manner that is consistent with the stated rotation length in the default baseline management regime (as a short rotation) or current management regime (as a long rotation).

Subsection 29(3) details the requirements for a forest management plan if thinning or pruning was undertaken within the CEA, to which subparagraph 3(c)(ii) and clause 5(2) of Schedule 2 applied (that is, the thinning or pruning was necessary for ecological or drought resilience purposes). In this scenario, the forest management plan must include a statement by a qualified independent person that certifies that the person is of the opinion that the thinning or pruning conducted was necessary for ecological purposes or drought resilience purposes. These provisions enables thinning or pruning, which would have otherwise made the land ineligible for the conversion activity, to be conducted for the health of the plantation.

Subsection 29(4) specifies that if subparagraph 3(c)(iii) of Schedule 2 applied (if the species was a UR species), the forest management plan must include the evidence and statements detailed in clause 6 of Schedule 2.

Subsection 29(5) specifies that a qualified independent person is a person who holds qualifications, determined by the Regulator to be necessary to hold, to provide an opinion for Section 30 and has no financial interest in the project.

The concept of a qualified independent person is used throughout the method. Subsection 106(9A) of the Act enables a methodology determination to make provision in relation to a matter by conferring a power to make a decision of an administrative character on the Regulator.

### **Subdivision 3.5.3—Continuing plantation CEAs**

#### 30 Additional requirements for a forest management plan for a continuing plantation CEA

Section 30 applies additional requirements for a forest management plan for a continuing plantation CEA.

Subsection 30(2) specifies that the forest management plan must demonstrate and include a statement from a qualified independent person that the management actions undertaken in relation to the CEA are consistent with that of a viable plantation forest over the permanence period, be reviewed every 10 years and updated if necessary over the permanence period, and include a statement signed by the project proponent and responsible landholders agreeing to take reasonable steps to implement the plan for the permanence period. This provision intends to ensure that the plantation forest is appropriately managed and maintained for the permanence period, to manage the risk of supporting sub-optimal plantations.

Subsection 30(3) applies if there was a rotation in progress in the CEA on the eligibility date of a species to which subclause 3(3) of Schedule 3 applies (where eligibility relies on a species in the table in Part 3 of Schedule 6 where both a short-rotation and long-rotation default clearfell age is listed). In this scenario, the forest management plan must also include a statement from a qualified independent person that they are of the opinion that the rotation was a short or a long rotation, as the case may be. This provision intends to provide assurance that the appropriate age restriction has been applied to the rotation.

Subsection 30(4) specifies that a qualified independent person is a person who holds qualifications, determined by the Regulator to be necessary to hold, to provide an opinion for subsection 30(3) and has no financial interest in the project.

### **Subdivision 3.5.4—Ex-plantation CEAs**

#### 31 Restrictions on management actions in ex-plantation CEAs—general

Section 31 sets out the restrictions on management actions in ex-plantation CEAs. The restrictions intend to ensure that the management of ex-plantation CEAs is consistent with that of establishing and maintaining a permanent planting, rather than a for-harvest plantation. These restrictions apply to all ex-plantation CEAs other than remnant plantation B CEAs.

Subsection 31(2) sets out the management actions that may be applied to an ex-plantation CEA provided they are for the purpose of establishing and maintaining a permanent planting.

Subsection 31(3) specifies that the other management actions (that is, management actions listed in subsection 22(1) but not in subsection 31(2)) must not be applied unless they fulfil one of the listed purposes. For example, thinning must not be undertaken in an ex-plantation CEA unless it is for one of the purposes listed in 31(3).

Subsection 31(4) specifies that where a management action taken in accordance with subsection (3) produces biomass that can be removed from the CEA, it must not be removed from a remnant plantation CEA other than as required for the relevant purpose. No more than 5% can be removed from a permanent planting CEA, unless it is required for the relevant purpose. This restriction applies as removing biomass for another purpose not listed in

subsection 31(3), i.e. for commercial purposes, would indicate that the forest is not being managed for the purpose of maintaining a permanent planting.

Subsection 31(5) specifies that when a remnant plantation B CEA has become a permanent planting (environmental) CEA under Section 17, the cleared area must be replanted with only an environmental planting.

### 32 Management action in remnant plantation CEAs

Section 32 specifies that a management action must not be undertaken in a remnant plantation B CEA unless it is consistent with the purpose of maintaining the remnant plantation without harvest for a period and then conducting a clearfell subsequent to creating an environmental planting. Section 34 requires these management actions to be set out in the forest management plan.

### 33 Additional requirements for a forest management plan for an ex-plantation CEA—general

Section 33 applies additional requirements for a forest management plan for an ex-plantation CEA, other than a remnant plantation B CEA. These requirements intend to ensure that the forest is being managed in accordance with Section 31, and to minimise permanence risks and the risk of adverse impacts from establishing a permanent forest.

Subsection 33(1) sets out the requirements for a forest management plan. Paragraph 33(1)(a) specifies that the forest management plan must also provide evidence that the management actions and other management activities undertaken in relation to the ex-plantation CEA will achieve the listed objectives in paragraph 33(1)(a). The object in subparagraph 33(1)(a)(i) is that it will minimise the risk of adverse impacts from a permanent planting. The object in subparagraph 33(1)(a)(ii) is that it will ensure the health and viability of the permanent planting over the nominated permanence period. This requirement intends to minimise the risk of supporting permanent plantings that are not ecologically viable. The object in subparagraph 33(1)(a)(iii) is that it will be consistent with the management of a permanent planting. This requirement intends to minimise the risk that the permanent forest will be harvested at the end of the permanence period. Paragraphs 33(1)(b) and (c) specify that the forest management plan must identify and assess the risk of adverse impacts arising from the permanent planting, including (but not limited to) the risks of weeds, pests, disease, fire and trees invading adjacent land, and outline the management actions and other management activities to be (or that have been) undertaken to mitigate those risks. Paragraph 33(1)(d) specifies that the forest management plan must outline with evidence how management actions undertaken are in accordance with Section 31. Information provided to meet the requirements of s 33(1)(b), (c) and (d) may also address the requirements of 33(1)(a). Where this is the case, there is no requirement to duplicate these. Where the CEA is a permanent planting (environmental) CEA that relies on subparagraph 14(5)(a)(ii), paragraph 33(1)(e) requires a forest management plan to provide evidence that the CEA satisfies that provision. Paragraph 33(1)(f) specifies that the forest management plan must provide evidence that the CEA is an environmental planting where a CEA became a permanent planting (environmental) CEA under section 17 after being a remnant plantation B CEA. Subsection 33(1)(g) specifies that the forest management plan must include a statement by a qualified independent person that certifies that the person is of the opinion that the management actions

and other activities to be undertaken will achieve the outcomes in paragraph (a) and the risk assessment undertaken for paragraph (b) considers all the relevant risk factors in assessing the risks of adverse impacts. Paragraph 33(1)(h) requires 10 yearly reviews and updates where necessary of the forest management plan for the duration of the permanence period.

Paragraph 33(1)(i) requires the forest management plan to include a statement signed by the project proponent and each relevant landholder agreeing to take reasonable steps to implement the forest management plan until the end of the permanence period.

Subsection 33(2) specifies that a qualified independent person is a person who holds qualifications, determined by the Regulator to be necessary to hold, to provide an opinion for paragraph (1)(g) and has no financial interest in the project.

#### 34 Additional requirements for a forest management plan for remnant plantation B CEAs

Section 34 applies additional requirements for a forest management plan for remnant plantation B CEAs. This allows the intended management actions throughout the crediting period to be modelled and long-term project scenario net carbon stock to be calculated at project registration. For each remnant plantation B CEA, the forest management plan must set out the management actions to maintain the plantation, specify when that period will end, set out the management actions for conducting a clearfell at the end of the period (this may be a clearfell with or without harvest) and the management actions that will be or have been undertaken after conversion to a permanent planting (environmental) CEA under Section 17, and provide evidence that the planting is an environmental planting.

### **Division 3.6—Newness and additionality**

#### 35 Newness requirement

A key requirement of the Act is that credits are issued for emissions reductions that are ‘additional’—that is, emissions reductions would not likely have occurred under normal business conditions, in the absence of the Act.

Section 35 sets out requirements in lieu of the newness requirement provided for by subparagraph 27(4A)(a)(ii) of the Act for plantation forest projects. It interacts with Section 10 to set project eligibility requirements. This section intends to ensure that the assessment of newness disregards certain activities to provide participants with flexibility to commence certain aspects of implementing projects prior to project registration, in recognition that it can otherwise be challenging to meet optimal planting windows.

Subsection 35(2) specifies that the assessment of newness disregards the preparation of any forest management plan before a management action commences.

Subsections 35(3) to 35(6) specifies that the assessment of newness disregards the specified activities in relation to the relevant project activity under Section 10 when it is undertaken after the date of the Section 22 or Section 29 application, but before the project is declared an eligible offsets project by the Regulator.

Subsection 35(7) clarifies that the leasing or purchase of land before the date of the Section 22 or Section 29 application that allocates it to a particular plantation project activity in the application is also to be disregarded.

Projects under the Determination must meet the other additionality requirements of the Act. These are the regulatory additionality requirement and the government program requirement. The regulatory additionality requirement in subparagraph 27(4A)(b)(i) of the Act applies without any modification through the Determination.

#### **Part 4—Net abatement amount**

Part 4 provides the procedures for calculating the project's net abatement amount for a reporting period. Abatement is modelled using FullCAM, which is the model that is also used to construct Australia's National Greenhouse Gas Inventory for the land sector. Note that this Determination requires FullCAM to be used in accordance with the FullCAM guidelines. For example, only the carbon pools in FullCAM which are included in the net abatement calculations can be accounted for by projects.

The calculations in Part 4 are conducted using FullCAM results as inputs. A project proponent must use FullCAM to model the three types of scenario. These are:

- the baseline scenario, estimating abatement that would have occurred if the project had not occurred,
- the project scenario, estimating abatement up to the end of the reporting period; and
- the long-term project scenario, estimating abatement over a long-term modelling period.

Modelling is conducted separately for each CEA. CEAs in Schedules 1-3 are stratified according to management activities only, while CEAs in Schedule 4 are stratified according to management activities and biophysical characteristics.

Proponents must model the baseline scenario for all project activities except the new plantation project activity. This is because the baseline scenario is assumed to be continued non-forested land use for the new plantation activity, and the sequestration associated with this is immaterial. For the conversion project activity, the baseline scenario models the ongoing short-rotation regime. For the continuing plantation and permanent planting project activities, the baseline scenario models the growth of the plantation forest in the period leading up to the project's commencement, followed by the final harvest and conversion to non-forested land use.

Both the project and long-term project scenarios must be modelled, regardless of which project activity the CEA utilises. In both project scenarios the proponent must account for the emissions associated with harvesting and the temporary loss of carbon stock on the land as a result of a harvest, and carbon sequestration associated with the subsequent regrowth. To prevent over-crediting due to carbon stock fluctuations in the management cycle, proponents are not permitted to report project scenario carbon stocks that exceed those of the long-term project scenario. For Schedules 1, 2 and 3, the long-term project scenario models the carbon dynamics over a 100-year timeline. For Schedule 4, the long-term project scenario models carbon dynamics from the forest start date until the end of the crediting period. This will be a minimum of 25 years, but could be longer, depending on whether the forest start date is prior to the commencement of the crediting period.

The Determination sets out requirements for using FullCAM, while more detailed requirements and instructions are provided in FullCAM guidelines. The FullCAM guidelines are published on the Regulator's website.



The Determination requires accounting for carbon stock changes in trees, debris, and harvested forest products, taking into account forest growth, disturbances and harvesting. It accounts for carbon stock changes and emissions due to the following activities:

- forest growth;
- natural disturbance (including fire);
- harvesting;
- other silvicultural activities such as thinning, pruning and fertilising; and
- fossil fuel emissions due to plantation management, including forest product harvesting.

The quantity of carbon stored in harvested forest products depends on the lifespan of the products. For example, forest products used in construction generally have a longer lifespan than paper. Forest products decay over time, and may be placed in landfill, recycled, or burnt. The Determination requires proponents to specify the types of forest products and the proportions going to end uses such as paper, packaging, furniture and construction in FullCAM using the information in the FullCAM guidelines. Carbon stock estimates in FullCAM use parameters for each national plantation inventory region (including parameters for areas outside the NPI regions), species, log class and end use. The Determination does not include wood products in landfill, both because FullCAM does not have a built-in decay curve analogous to timber stored in landfills and to avoid potential double counting of abatement under ERF waste projects.

The general approach to abatement calculations differs between the Schedules. However, a similar approach is used in Schedules 2 and 3.

In Schedule 1, abatement is calculated by subtracting any project emissions from the project carbon stock, with a cap on maximum abatement represented by the long-term average project carbon stock. Credits are issued based on the abatement achieved in each reporting period. Figure 5 gives an illustrative example of a new long-rotation plantation, which reaches the long-term average in project year 18. No further credits would be issued beyond this point.

In Schedules 2 and 3, abatement is calculated by subtracting the long-term average baseline carbon stock and any project emissions from the long-term average project carbon stock. This number is then split into even apportionments, which are linearly apportioned over the first 15 years of the crediting period of the project. Figure 6 gives an illustrative example of a conversion (Schedule 2) project, which converts a 13-year rotation pulplog regime to a 30-year rotation sawlog regime. Figure 7 displays annual credit issuances for this project. Note that the credit profile displayed in Figure 7 would be applicable for Schedules 2, 3 and 4, as these Schedules all adopt the 15-year linear apportionment of credits. Figure 8 gives an illustrative example of a continuation (Schedule 3) project which continues a 30-year rotation sawlog regime.

In Schedule 4, abatement is calculated by subtracting the baseline carbon stock at the end of the crediting period and any project emissions from the long-term project scenario carbon stock (which represents the carbon stock in the project at the end of the crediting period). This number is then split into even apportionments, which are linearly apportioned over the first 15

years of the crediting period of the project. Figure 9 gives an illustrative example of a Schedule 4 project that retains a 13-year rotation pulplog plantation as a remnant plantation CEA. In this example, the proponent conducts an initial thin at project registration to ensure the permanence and health of the plantation.

Note that in Schedules 2, 3 and 4, while the majority of the credits are apportioned in the first 15 years, the calculations are re-done each reporting period. This can result in small issuances after the 15 year period has passed, due to changes in management practice or changes in the FullCAM modelling framework. Note that any changes in management practice would need to be assessed against the ‘test of negative abatement’ in Section 28, and would not be able to be undertaken unless the change in net abatement as a result of the management change was zero or greater.

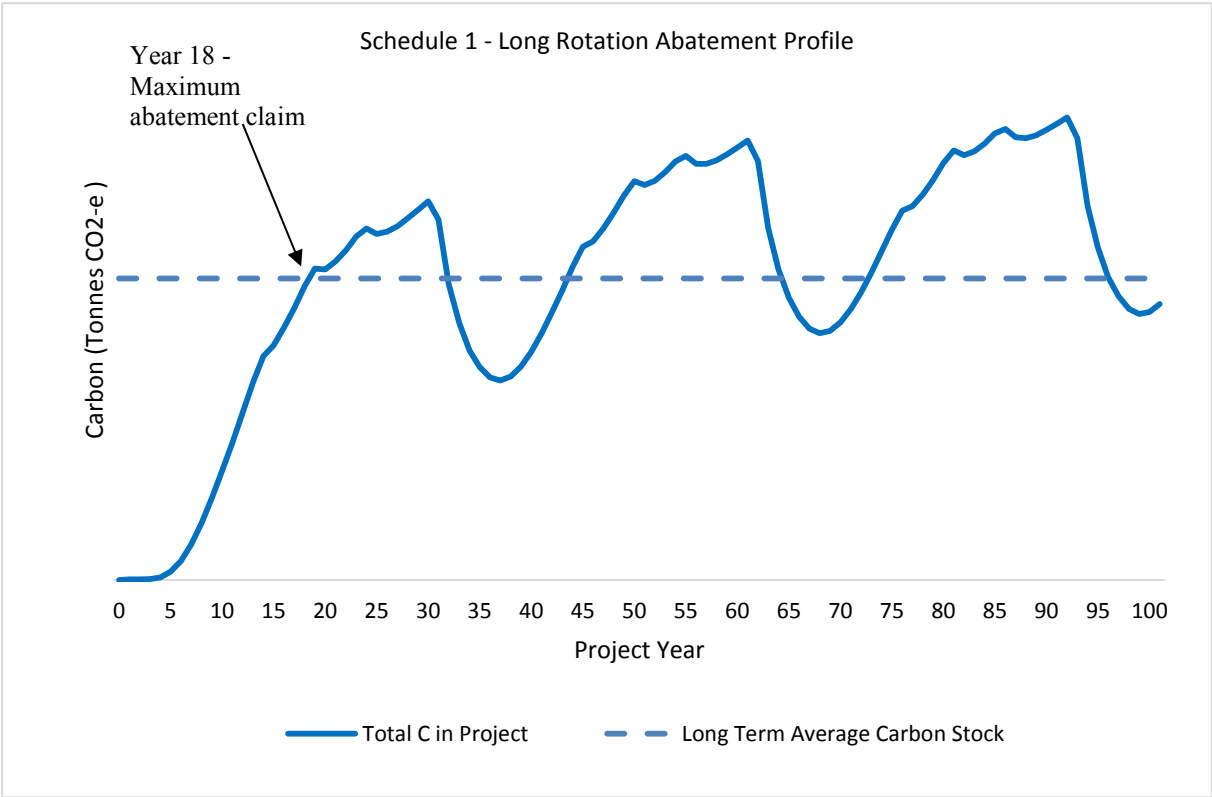


Figure 5: Example showing calculation of abatement for a plantation established on an area that is eligible for a new plantation. Note that in this example the project has a zero baseline.

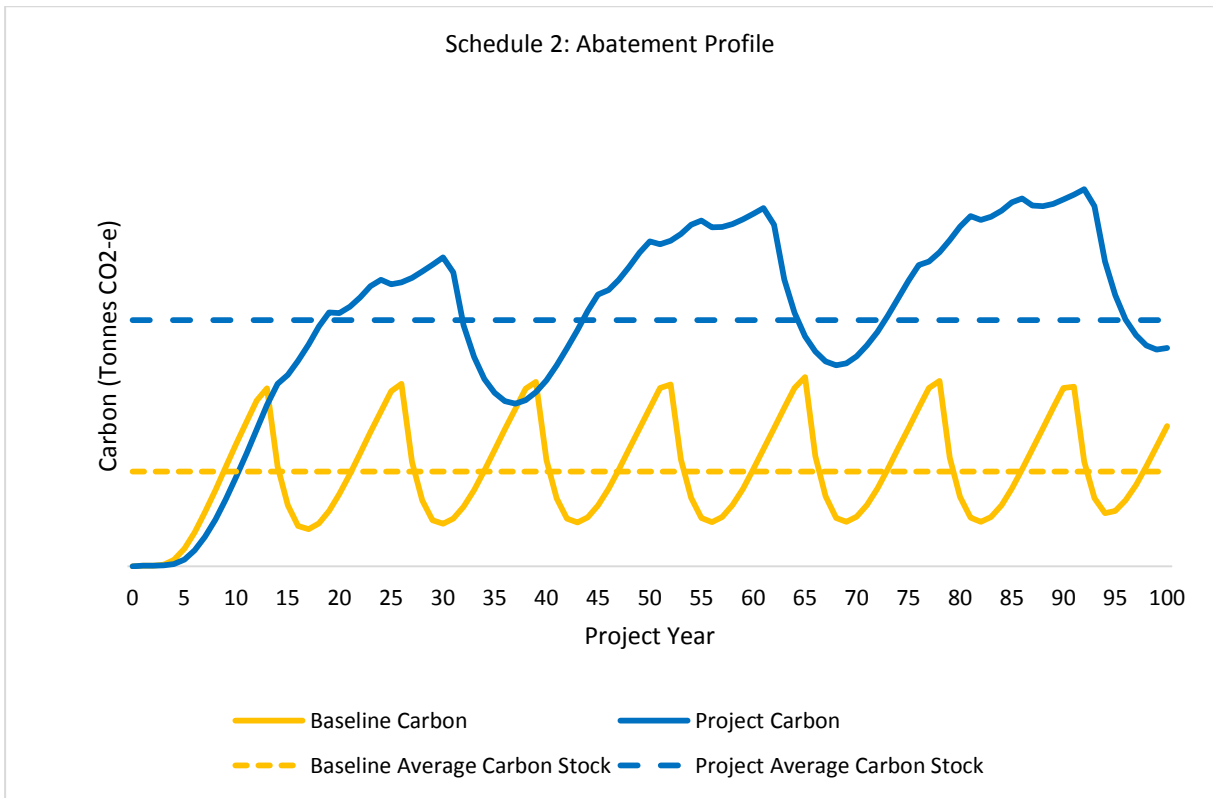


Figure 6: Example showing calculation of baseline and project carbon stocks for a project that converts a plantation from short rotation to long rotation. This example shows a conversion from a 13-year rotation pulplog regime to a 30-year rotation sawlog regime.

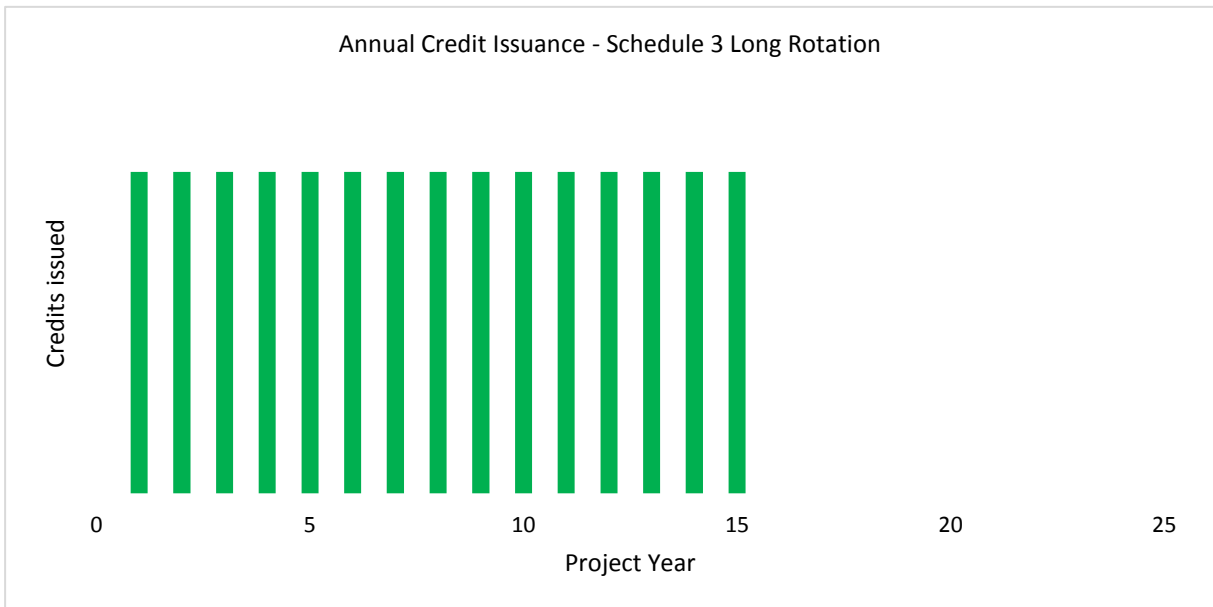


Figure 7: Annual credit issuances for the conversion example shown in Figure 6. Credits are issued linearly in annual increments for 15-years, up to the maximum of the long-term average net carbon stock less the baseline carbon stock. Note that the calculations in Part 4 are conducted at a monthly time-scale, to facilitate reporting more frequently than annually.

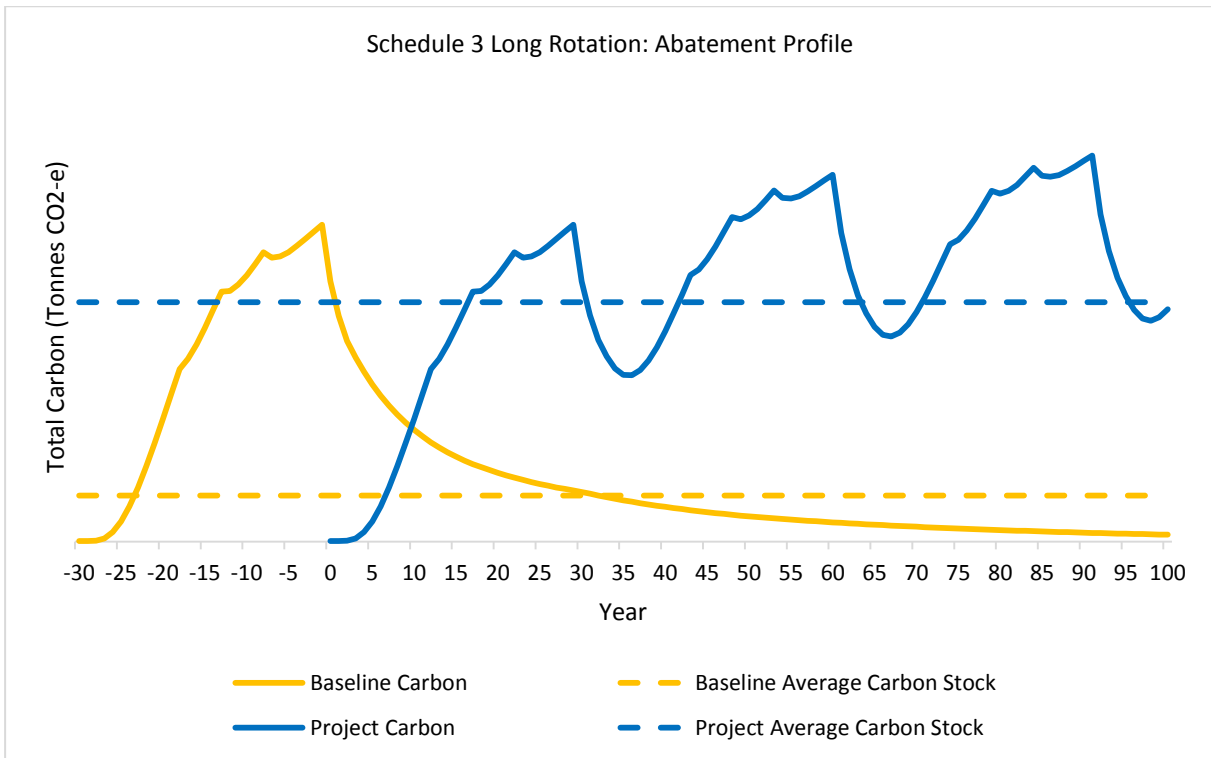


Figure 8: Example showing calculation of baseline and project carbon stocks for a project that continues an eligible 30-year rotation sawlog regime.

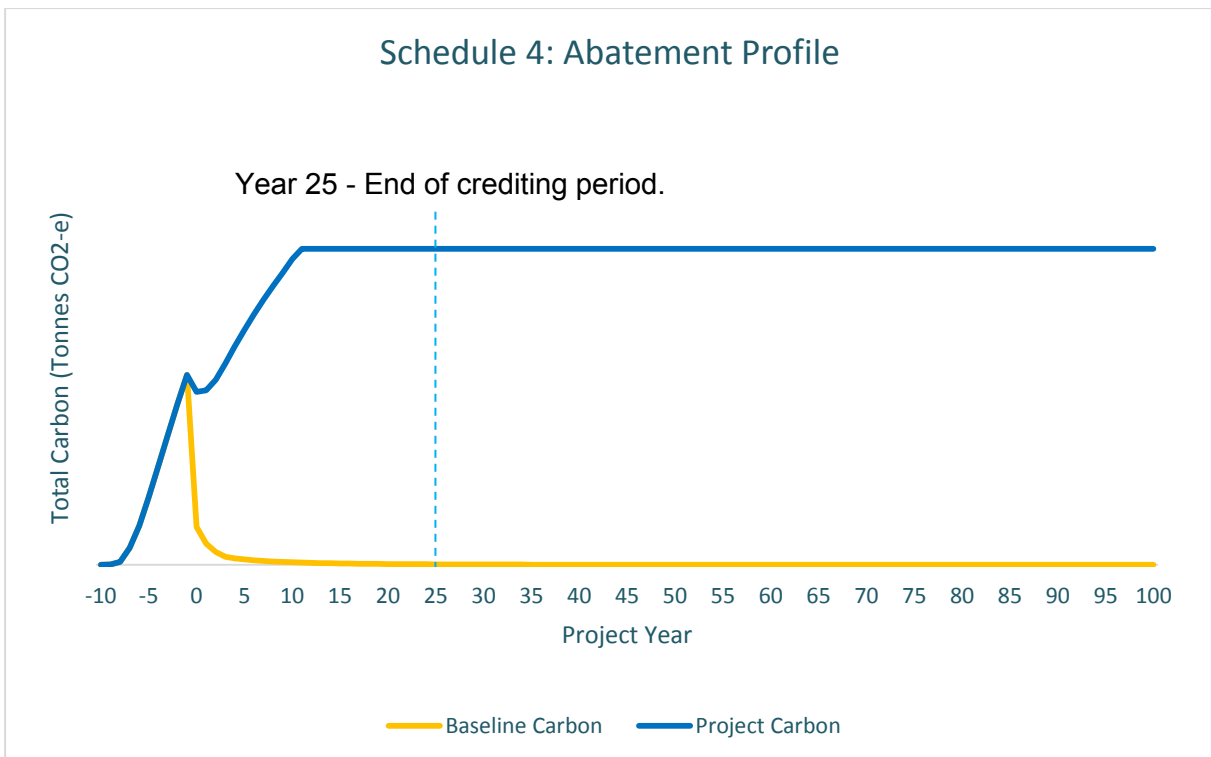


Figure 9: Example showing a permanent planting project that retains an existing short-rotation plantation as a remnant plantation CEA. Note the modelled abatement reaches a cap and no further abatement is modelled to occur beyond this, as specified in the FullCAM guidelines.

## **Division 1—Preliminary**

### **36 Operation of this Part**

Section 36 provides that the carbon dioxide equivalent net abatement amount in relation to a reporting period for the project is taken to be equal to the amount ascertained using the method specified in Part 4.

### **37 Overview of gases accounted for in abatement calculations**

Section 37 describes the greenhouse gas sources and relevant carbon pools that are assessed in order to determine the net abatement amount. The greenhouse gas assessment boundary includes the tree, debris and harvested forest product carbon pools and greenhouse gas emissions from fuel use. The harvested forest product carbon pool includes products in service but not in landfill. The greenhouse gas assessment boundary also includes emissions from fires (controlled burns and natural disturbances), non-fire disturbances (for instance windthrow, insect attack), application of fertiliser, and other management actions (for instance thinning, clearfell, weed control).

A number of emissions sources are excluded from the abatement calculations, for the following reasons:

- emissions from soils are excluded as these are not a net source of emissions over the life of the project;
- ongoing emissions from dead plant material remaining after past clearing events are excluded as they will not be materially affected by the project;
- emissions from fuel use associated with harvesting are excluded where the project activity is conversion from short-rotation to long-rotation plantations, as it is assumed that the fuel use will be similar between the baseline and project scenarios, and thus be immaterial;
- baseline emissions for new plantations, where the baseline scenario is agriculture (exclusion of agricultural emissions in the baseline is a conservative assumption); and
- agricultural baseline emissions for continuing plantations and permanent plantings after the harvest event (exclusion of agricultural emissions in the baseline is a conservative assumption).

## **Division 2—FullCAM Modelling**

### **Subdivision 1—General**

#### **38 Modelling scenarios in FullCAM**

Section 38 provides that the proponent must use FullCAM to model the project scenario and long-term project scenario for each CEA existing at the end of the reporting period. The project scenario is simulated from the day before the forest start date up to the end of a reporting period (see Section 39). The long-term project scenario is simulated from the day before the forest start date to the end of the modelling period (see Section 40). The length of the modelling period will vary depending on the project activity being undertaken in the CEA.

For all CEAs except new plantation CEAs, the baseline will be non-zero and the proponent must use FullCAM to model a baseline scenario (see Section 41).

FullCAM outputs are used when calculating abatement in accordance with Division 3.

Modelling of the baseline and project scenarios must be conducted in accordance with the FullCAM guidelines as published on the Regulator's website. To ensure that the most recent version of FullCAM and associated input data is used, FullCAM modelling must be conducted within 90-days before the offsets report is submitted, using the version of FullCAM that is in force at the end of the reporting period (as specified in Section 7). This requirement addresses the fact that the default values in FullCAM are updated from time to time, for example to reflect updated climate data. These updates may affect the model outputs.

### 39 Modelling project scenario

The 'project scenario' is the suite of management actions that have actually been applied (that is, in 'real life') to the plantation forest project. The project scenario is updated every reporting period, based on what actually occurred over the reporting period.

Section 39 sets out the rules for specifying the timing of project scenario management actions and disturbance events to be modelled in FullCAM, which is known as the 'project scenario simulation'. Section 39 provides that the simulation must begin on the day before the forest start date.

The forest start date is defined according to the type of project activity (see Section 5).

For CEAs that contain a rotation at the eligibility date, the modelling period commences on the day before that rotation was planted, seeded or coppiced. For CEAs that do not contain a rotation at the eligibility date, the modelling period commences on the day before the first planting, seeding or coppicing event after the eligibility date.

For example, a short-rotation *Eucalyptus globulus* plantation may be harvested two years before the project's eligibility date (the date when the project's application for declaration was made under Section 22 of the Act). In a scenario where a year after the project commenced a long-rotation *Pinus radiata* plantation is established (so the project involves conversion of short-rotation to long-rotation plantations by planting a new species), the modelling period would start the day before the *Pinus radiata* trees were planted.

If there was an eight year old *Eucalyptus globulus* on the land at the eligibility date, then the modelling period would commence on the day before the planting of the *Eucalyptus globulus*.

Section 39 also provides that the project scenario simulation ends on the last day of the reporting period, and that all relevant management actions and disturbance events occurring in the CEA up to that day must be simulated.

### 40 Modelling long-term project scenario

Section 40 provides the rules for the 'long-term project scenario simulation'. The long-term project scenario simulation is used to prevent over-crediting due to carbon stock fluctuations caused by management actions. In accordance with the requirements in Section 49, proponents are not permitted to report project scenario carbon stocks that exceed those of the long-term project scenario.

The long-term project scenario simulation for Schedules 1, 2 and 3 uses a 100-year modelling period. A 100-year period for modelling the long-term carbon stocks will normally ensure

there are multiple rotations reflected in the simulation, and will adequately account for harvest events. The long-term project scenario simulation must commence on the day before the forest start date, as defined in Section 5. For these Schedules, it ends on the last day of the modelling period, which is the forest start date plus 100-years.

The long-term project scenario simulation for Schedule 4 projects will vary in start time, dependent on the specifics of the project it is modelling. For remnant plantation CEAs, the long-term project scenario simulation begins on the day before the planting, seeding or coppicing of the remnant plantation. For permanent planting CEAs, the long-term project scenario simulation begins on the day before the first planting, seeding or coppicing of forest after the eligibility date. For all ex-plantation CEAs, the long-term project scenario ends on the last day of the modelling period, which is at the end of the crediting period.

The long-term project scenario simulation must account for the emissions associated with harvesting and the temporary loss of carbon stock on the land as a result of a harvest, and carbon sequestration associated with the subsequent regrowth.

Subparagraph 40(1)(c)(i) requires that the long-term project scenario simulation must include all management actions and disturbance events in the management record that occurred in the period between the forest start date and the end of the reporting period

Subparagraph 40(1)(c)(ii) requires simulations to cover the period from the end of the reporting period to the end of the modelling period. It is assumed that the management of the current rotation is representative of future management. If a rotation is not under way at the end of the reporting period, the simulation uses the default management actions, which are the management actions of the default management regime (see Section 26). If a rotation is under way at the end of the reporting period, the management actions of the current management regime (see Section 26) must be simulated for the remainder of the rotation, followed by the default management actions.

The note to Section 40 explains that the simulation does not include natural disturbance events, nor management actions occurring between rotations, beyond the current reporting period.

Subsection 40(2) requires simulations to assume a period of 12 months between rotations, as this is considered to represent the average planting regime.

#### 41 Modelling baseline scenario

Section 41 sets out the rules for the 'baseline scenario simulation'. This is required for all CEAs except new plantation CEAs, as the baseline emissions will be non-zero. The baseline represents the carbon stocks on the land and in harvested wood products had the project not been carried out. The results of the baseline scenario simulation are used to prevent crediting of business as usual abatement. That is, the average baseline carbon stock is deducted from the project carbon stock to calculate the carbon stock change for the project for each reporting period.

For CEAs where new plantations are established on land that has been non-forest in the seven years prior to a project application, the baseline is assumed to be zero and Section 41 need not be considered.

The baseline scenario simulations in the Determination are based on the following assumptions and rationale on what would have otherwise occurred in the absence of the projects:

- New plantation project activity: Land where there has been no forest for seven years before the eligibility date is likely to continue to be managed in a non-forested land use. The establishment of new plantations on previously non-forested land in Australia is not a business-as-usual activity in 2021 based on current market conditions and trends, and this is not expected to change in the foreseeable future. Therefore it is reasonable to assume a zero carbon stock baseline for such projects.
- Conversion project activity: Land that has been managed as a short-rotation plantation at any time over the seven years prior to the eligibility date is likely to continue to be managed as a short-rotation plantation. Alternatively, where land is not viable for short-rotation plantations, the assumption of continual use as a plantation is likely to be conservative as the land would likely be converted to a non-forest land use.
- Continuing plantation and permanent planting project activities: There is a growing trend for Australia's plantation estate to convert to non-forest land (ABARES, 2021). Where evidence can be provided that land with an existing plantation forest (or that had a plantation forest in the last seven years) would have otherwise been converted to a viable and more financially attractive non-forested land use, there would be one final harvest event followed by conversion to the non-forested land use under the business as usual scenario. As such, the baseline carbon stock is comprised of carbon stored in the debris and harvested wood products from the final harvest.

Subsection 41(1) provides the requirements for the baseline scenario simulation for a conversion CEA, including that the baseline scenario simulation is run at the forest start date (if the forest start date is after the project's commencement) and at the end of each reporting period.

Paragraph 41(1)(a) provides that for a conversion CEA, the baseline scenario simulation date must commence on the day before the forest start date, as defined in Section 5. That is, the same day on which the simulation of the long-term project scenario commences.

Paragraph 41(1)(b) provides that for a conversion CEA, the baseline scenario simulation must end on the last day of the modelling period, which is the forest start date plus 100-years.

Paragraph 41(1)(c) provides that the management actions of the default baseline management regime planned according to Schedule 2 Part 3 are to be simulated on a recurring basis, with a 12-month gap between each harvest and plantation re-establishment. Any natural disturbance that has occurred prior to the time of the simulation is also to be included.

The first note to subsection 41(1) explains that, as with the long-term project scenario simulation, management actions between rotations are not included in the baseline scenario simulation. The second note explains that natural disturbances are only simulated to occur at the times they actually occurred, and are not simulated as recurring in future rotations. This allows for the baseline scenario to continue to represent a combination of actual management



and disturbances and the future management actions that would have occurred in the absence of a project to convert a short-rotation plantation to a long-rotation plantation.

Subsection 41(2) provides the requirements for the baseline scenario simulation for a continuing plantation CEA, including that the baseline scenario simulation is run at the forest start date (if the forest start date is after the project's commencement) and at the end of each reporting period.

Paragraph 41(2)(a) provides that for a continuing plantation CEA, the baseline scenario simulation date must commence on the day before the baseline rotation start date, as defined in paragraph 41(6). The baseline rotation start date is the starting date for the rotation that was in-progress during the baseline period. This is to ensure that the baseline scenario simulation includes the baseline rotation, for the purposes of calculating the carbon that would have been stored by the final harvest event prior to the conversion to non-forested land.

Paragraph 41(2)(b) provides that for a continuing plantation CEA, the baseline scenario simulation must end 100-years after the harvest event described in subparagraph 42(2)(c)(ii). That is, the baseline scenario must model the growth of the plantation forest that grew immediately before the project's commencement, followed by the harvest of this plantation and then the decay of the forest products and forest debris for the subsequent 100-years.

Paragraph 41(2)(c) provides that for a continuing plantation CEA, the baseline scenario simulation should simulate the activities undertaken between the baseline rotation start date and the eligibility date, a single harvest event and then no subsequent seeding, planting or coppicing. This is because, for Schedule 3, the baseline scenario is conversion to a non-forested land use. Paragraph 41(2)(c) ensures this situation is correctly modelled.

Subsection 41(3) provides the requirements for the baseline scenario simulation for an ex-plantation CEA, including that the baseline scenario simulation is run at the forest start date (if the forest start date is after the project's commencement) and at the end of each reporting period.

Paragraph 41(3)(a) provides that for an ex-plantation CEA, the baseline scenario simulation must commence on the day before the baseline rotation start date, as defined in paragraph 41(6). The baseline rotation start date is the starting date for the rotation that was in-progress during the baseline period. This is to ensure that the baseline scenario simulation includes the baseline rotation, for the purposes of calculating the carbon that would have been stored by the final harvest event prior to the conversion to non-forested land.

Paragraph 41(3)(b) provides that for an ex-plantation CEA, the baseline scenario simulation must end on the last day of the modelling period. That is, the baseline scenario must model the growth of the plantation forest that grew immediately before the project's commencement, followed by the harvest of this plantation and then the decay of the forest products and forest debris for the subsequent years until the end of the modelling period (which is the end of the crediting period).

Paragraph 41(3)(c) provides that for a continuing plantation CEA, the baseline scenario simulation should simulate the activities undertaken between the baseline rotation start date and the eligibility date, a single harvest event and then no subsequent seeding, planting or coppicing. This is because, for Schedule 3, the baseline scenario is conversion to a non-forested land use. Paragraph 41(2)(c) ensures this situation is correctly modelled.

There may be circumstances where a rotation would end early as a consequence of a natural disturbance. Subsection 42(4) provides for the simulation to include that early end. As explained in subsection 42(5), the simulation to end a rotation in these circumstances can only include a thinning without harvest, and not a salvage harvest.

Subsection 42(6) provides a definition of baseline rotation start date, which is relevant to the baseline scenario simulation for a continuing plantation CEA or an ex-plantation CEA.

## **Division 3—Calculations**

### **Subdivision 1—Preliminary**

#### **42 Operation of Division**

Division 3 details the procedure to calculate the net abatement amount in a reporting period for a project.

### **Subdivision 2—Baseline net carbon stock**

#### **43 Baseline carbon stock and baseline emissions in a CEA**

Section 43 is used to calculate the baseline carbon stock and emissions for a CEA. There are six equations that are used to do this. Conversion CEAs and continuing plantation CEAs use Equations 1, 2 and 3. Ex-plantation CEAs use equations 4, 5 and 6. This is because the baseline net carbon stock for conversion and continuing plantation CEAs is calculated on the basis of the long-term (100-year) average, while for ex-plantation CEAs it is conducted on the basis of total carbon present at the end of the crediting period. For new plantation projects, the baseline carbon stock and emissions are assumed to be zero.

For conversion projects and continuing plantation projects, Equations 1 and 2 are used to calculate the long-term average baseline carbon stock and emissions from biomass burning for a CEA. These calculations are conducted separately for each CEA. They are re-calculated for each offsets report, and can change to reflect the effects of any disturbance events occurring between simulations. Equation 3 is used to calculate the net baseline carbon stock for each CEA (the difference between the long-term average baseline carbon stocks and emissions from biomass burning).

Equation 1 calculates the long-term average baseline carbon stock for a conversion or continuing plantation CEA. The expression  $44/12$  is representative of the ratio of the molecular weight of carbon dioxide to that of carbon, and converts the mass of carbon sequestered in tonnes as calculated in FullCAM into tonnes of carbon dioxide equivalent.

For the C mass in forest debris ( $C_{BD,i,k}$ ), the FullCAM output is: ‘Whole / Debris / C Mass of Forest Debris’.

For the C mass in trees, ( $C_{BT,i,k}$ ) the FullCAM output is: ‘Whole / Plant / C mass of trees’.

For the C mass in forest products ( $C_{FP,B,i,k}$ ) the FullCAM output for is: ‘Whole / Plant / C mass of forest products’.

For the relevant carbon pools and CEAs, this is the C mass (in tonnes C per-hectare) —from the baseline scenario simulation.

Because the outputs of all plot-based modelling in FullCAM are expressed on a per-hectare basis, the FullCAM outputs must be multiplied by the area of the CEA ( $S_i$ ) to calculate the values for the whole CEA.

In order to calculate the 100-year long-term average of the baseline carbon, Equation 1 calculates the total sequestration achieved in the baseline scenario over 100-years (1200 months) of the modelling period, then divides that value by 1200. Because for continuing plantation CEAs the baseline carbon only considers the carbon that would have been stored after the conversion to non-forested land use (as this is the point at which the baseline land use differs from the project land use), the terms  $C_{BD,i,k}$ ,  $C_{BT,i,k}$  and  $C_{BFP,i,k}$  are all summed for the 1200 months after the conversion to non-forested land use. Conversion CEAs calculate the baseline carbon over the first 1200 months of the modelling period, which will include the rotation present on the land at project registration, if there is one.

Equation 2 calculates methane and nitrous oxide emissions from fire. Fire emissions are calculated on a per-hectare basis; note that only the area affected by fire need be included, which may not be the entire CEA. The global warming potentials for each gas account for the fact that single methane and nitrous oxide molecules have a larger greenhouse gas effect than a carbon dioxide molecule.

Equation 3 calculates the net baseline carbon stock in the CEA. This is calculated as the baseline carbon stock (from Equation 1) minus the baseline emissions from biomass burning (from Equation 2).

Equation 4 calculates the baseline carbon stock for an ex-plantation CEA. The expression 44/12 is representative of the ratio of the molecular weight of carbon dioxide to that of carbon, and converts the mass of carbon sequestered in tonnes as calculated in FullCAM into tonnes of carbon dioxide equivalent.

For the C mass in forest debris ( $C_{BD,i,k_{mp}}$ ) the FullCAM output is: ‘Whole / Debris / C Mass of Forest Debris’.

For the C mass in forest products ( $C_{BFP,i,k_{mp}}$ ) the FullCAM output for is: ‘Whole / Plant / C mass of forest products’.

For the relevant carbon pools and CEAs, this is the C mass in the final month of the modelling period (which is the last month of the crediting period)—from the baseline scenario simulation.

Note that the baseline scenario for permanent plantings projects is clearfell harvest, followed by no further planting. As such, there will be no carbon stored in trees at the end of the modelling period for these CEAs. Because of this, the C mass of trees is not included in Equation 4.

Equation 5 calculates methane and nitrous oxide emissions from fire. Fire emissions are calculated on a per-hectare basis; note that only the area affected by fire need be included, which may not be the entire CEA. The global warming potentials for each gas account for the fact that single methane and nitrous oxide molecules have a larger greenhouse gas effect than a carbon dioxide molecule.

Equation 6 calculates the net baseline carbon stock in the CEA. This is calculated as the baseline carbon stock (from Equation 1) minus the baseline emissions from biomass burning (from Equation 2).

Because the outputs of all plot-based modelling in FullCAM are expressed on a per-hectare basis, the FullCAM outputs must be multiplied by the area of the CEA ( $S_i$ ) to calculate the values for the whole CEA.

#### 44 Baseline net carbon stock for a project area

Section 44 provides that the baseline net carbon stock for a project area (Equation 7) is calculated by summing the baseline carbon stocks ( $\bar{C}_{net,B,i}$ ) for each CEA contained in the project area.

### **Subdivision 3—Long-term net carbon stock**

#### 45 Predicted long-term carbon stock and project emissions in a CEA

Section 45 is used to calculate the long-term carbon stock and project emissions for a CEA, the difference of which is effectively the maximum abatement that can be claimed by the proponent. For Schedule 1, 2 and 3 projects, this is done on the basis of the long-term (100-year or 1200-month) average carbon stocks, and for Schedule 4 projects this is done on the basis of the carbon stock at the end of the crediting period (also referred to as the long-term project scenario carbon stock). Projects under schedules 1, 2 and 3 use equation 8 to calculate this, while Schedule 4 projects use equation 9. Equation 8 calculates the predicted long-term average carbon stocks, while Equation 9 calculates the predicted long-term project scenario carbon stocks. The long-term average carbon stock or long-term project scenario carbon stock is also re-calculated for each offsets report and can change over time to reflect the effect of actual events.

Equation 8 is similar to Equation 1, however it calculates the sequestration associated with the project scenario actions rather than the baseline scenario actions. These are calculated over a 100-year timeframe, and then averaged by dividing by the 1,200 months present in the 100-year timeframe.

The expression 44/12 converts the mass of carbon sequestered in tonnes calculated in FullCAM into tonnes of carbon dioxide.

For the C mass in debris pools ( $C_{D,i,k}$ ) the FullCAM output is: ‘Whole / Debris / C mass of forest debris’.

For the C mass in trees ( $C_{T,i,k}$ ) the FullCAM output is: ‘Whole / Plant / C mass of trees’.

For the C mass in forest products ( $C_{FP,i,k}$ ) the FullCAM output is: ‘Whole / Plant / C mass of forest products’.

For every carbon pool and every CEA, this is the C mass for the sum of months since the modelling start date—from the long-term project scenario simulation. This value is then divided by the number of months in the long-term project scenario (1,200) to give the long-term average carbon stock.

Equation 9 is similar to Equation 4, however it calculates the sequestration that will occur throughout the life of the project, rather than the sequestration that would have occurred in the baseline scenario. Similarly to Equation 4, this calculation is not averaged. Instead, this is calculated as the carbon that is modelled to have been sequestered at the end of the crediting period of the project.

The expression 44/12 converts the mass of carbon sequestered in tonnes calculated in FullCAM into tonnes of carbon dioxide.

For the C mass in forest debris ( $C_{D,i,k_{mp}}$ ) the FullCAM output is: ‘Whole / Debris / C mass of forest debris’.

For the C mass in trees ( $C_{T,i,k_{mp}}$ ) the FullCAM output is: ‘Whole / Plant / C mass of trees’.

For the C mass in forest products ( $C_{FP,i,k_{mp}}$ ) the FullCAM output is: ‘Whole / Plant / C mass of forest products’.

For the relevant carbon pools and CEAs, this is the C mass at the end of the modelling period—from the long-term project scenario simulation.

Equation 10 is used to calculate the long-term project emissions from biomass burning for a CEA. These calculations are repeated separately for each CEA. Equation 10 is used for all CEA types, however the amount of months the calculation is conducted over varies (either 1,200 months for Schedules 1, 2 and 3; or 300 months for Schedule 4).

The emissions for biomass burning for a given gas are equal to the sum of the mass of the gas emitted over the relevant period, multiplied by the global warming potential of the gas and multiplied by the area of the CEA. This calculation is replicated for the gases methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), and the emissions from both gases are summed to give the total emissions from biomass burning in the long-term project scenario.

**$GWP_g$**  is representative of the global warming potential of the greenhouse gas  $g$  (either methane or nitrous oxide), and is specified in the NGER Regulations as in force from time to time. The global warming potentials for each gas account for the fact that a single methane and nitrous oxide molecule has a larger greenhouse gas effect than a carbon dioxide molecule.

**$E_{g,i,k}$**  represents the mass of the greenhouse gas  $g$  (either methane or nitrous oxide) that is emitted in a given month.

Whereas the FullCAM outputs for carbon pools are cumulative (i.e. the outputs represent the total carbon stored in that pool at a given time), the outputs for emissions are representative of the amount of gas that is emitted in a given time period (in this case monthly). As such, total emissions can be calculated by summing the emissions in every month, as is done in Equation 10.

Equation 11 is used to calculate the predicted emissions from fuel used to harvest in the long-term project scenario. Where the project involves conversion from short-rotation to long-rotation plantations, it is assumed that the fuel use will be similar between the baseline and project scenarios, and thus any change in emissions will be immaterial. Therefore emissions from fuel use are assumed to be zero for such projects.

For all other CEA types, the fuel emissions from forest product harvesting associated with the long-term project scenario are calculated using Equation 11. This equation needs to include all harvest events occurring over the modelling period.

In recognition of the difficulty of predicting fuel emissions from future harvest events, and taking into consideration the relatively minor nature of these emissions, the Determination adopts simplified requirements for reporting fuel emissions. The predicted fuel emissions in carbon dioxide equivalent are calculated by applying an emissions factor of 0.035 (that is, 3.5 per cent) relative to the mass of forest products harvested from all CEAs in the project area over the entire modelling period (from Equation 12). The factor  $C_{FP,i,k}$  in equation 12 is the same as used in Equations 8 and 9 but only the values from the periods immediately before and after the harvesting events are used. The emissions factor is based on figures published by May et al. (2012), which studied the fuel-based emissions and fertiliser emissions associated with forest establishment, management, harvest and haulage, relative to the total harvested volume.

#### 46 Predicted long-term average net carbon stock or long-term project scenario net carbon stock for project area

The predicted long-term average net carbon stock or predicted long-term project scenario net carbon stock for a project area is calculated using Equation 13. Note that Equation 13 is used for all CEAs in a project area, and as such it may combine the predicted long-term project scenario net carbon stock from an ex-plantation CEA and the long-term average net carbon stock from another CEA. Equation 13 involves addition of the long-term average carbon stock or long-term project scenario carbon stock (from Equation 8 or 9, respectively) minus emissions over the modelling period from fire and fuel use (Equations 10 and 11), of all CEAs in the project area.

This value is also added to the value for  $\frac{RC}{D}$ . RC is the total number of Australian carbon credit units (ACCUs) issued, before the end of the reporting period, in relation to each CEA that was removed from the project area before that time and relinquished in relation to each CEA in the project area before the end of the reporting period. RC is included to balance the equation in the case that ACCUs have been relinquished or CEAs were removed. As the equations reference the baseline and current carbon stocks and then deduct previous abatement, the absence of RC would have the effect of double-penalising projects for CEA removals, the relinquishment of ACCUs or reversals of sequestration.

D is the aggregate of the permanence period discount number and the risk of reversal buffer number under Section 16 of the Act that was applied to determine the ACCUs included in RC. The value for  $\frac{RC}{D}$  must be worked out separately for each issue or relinquishment of ACCUs included in RC, and all such values must be aggregated to work out the value for  $\frac{RC}{D}$  in equation 13.

## **Subdivision 4—Net carbon stock change in a reporting period**

### 47 Calculating net carbon stock in CEA at the end of reporting period

Section 47 provides instructions for calculating the carbon stock and project emissions in a CEA for a reporting period. The carbon stock change calculations differentiate between new plantation CEAs (in Equation 14), conversion, permanent planting (environmental) or continuing plantation CEAs (in Equation 15) and remnant plantation or permanent planting (ex-commercial) CEAs (in Equation 16).

Equation 14 is used to calculate carbon stock in each new plantation CEA at the end of each reporting period. The expression 44/12 converts the mass of carbon sequestered in tonnes calculated in FullCAM into tonnes of carbon dioxide.

For C mass in forest debris ( $C_{D,i}$ ), the FullCAM output is: ‘Whole / Debris / C mass of debris’.

For C mass in trees ( $C_{T,i}$ ), the FullCAM output is: ‘Whole / Plant / C mass of trees’.

Because the outputs of all plot-based modelling in FullCAM are expressed on a per-hectare basis, the FullCAM outputs must be multiplied by the area of the CEA to calculate the values for the whole CEA.

Equation 15 is used to calculate the carbon stock present at the end of the reporting period in a conversion CEA, a permanent planting (environmental) CEA or a continuing plantation CEA. Equation 15 has the effect of taking the difference between the baseline carbon stock from Equation 3 or 6 and the predicted long-term average project carbon stock or long-term project scenario carbon stock from Equation 8 or 9, and apportioning this amount as accumulating carbon stock in the given CEA over 15-years.

To provide for consistency in crediting across projects where a rotation was in progress on the eligibility date and those where no rotation was in progress, the carbon stock calculation yields a linear annual increase over 15-years from the start of the crediting period. This approach also provides the flexibility to projects undertaking the permanent planting project activity B to conduct the transitional harvest event during the crediting period without needing to revoke credits. The 15-year period aligns with the period of time for which projects would be expected to receive credits in most circumstances if the issuance was not averaged. The equation provides that changes to the predicted long-term average project carbon stock or predicted long-term project scenario carbon stock from Equation 8 or 9, or the baseline carbon stock from Equation 3 or 6, that occur after the first 15-years of the crediting period are also accounted for.

The note under subsection 47(2) explains that the amounts calculated are likely to vary slightly from one reporting period to the next, because the baseline carbon stock and long-term average project carbon stock are re-calculated for each reporting period, taking into account events occurring during the reporting period. Because of these recalculations, there may be some adjustments to carbon stock calculations after the 15-year period.

Equation 16 is used to calculate the carbon stock present at the end of the reporting period in a remnant plantation CEA or a permanent planting (ex-commercial) CEA. This equation functions identically to Equation 15, however Equation 16 also multiplies the carbon stock by 0.75 for these CEA types in a 25-year permanence period project. This 25% discount is to

address the risk that participants may retain or establish a forest that is very similar in structure and composition to a commercial plantation forest and elect a 25-year permanence period. To address the additional permanence risk associated with this project type, the 25 per cent discount is to more closely align crediting outcomes between these forest types and forests established for harvest in Schedule 3. The additional discount does not apply for projects electing a 100-year permanence period.

The net carbon stock in a CEA at the end of the reporting period is calculated separately for each CEA, each reporting period, using Equation 14, 15 or 16, as necessary.

Equation 17 calculates the emissions from biomass burning in each CEA at the end of the reporting period. The emissions for biomass burning for a given gas are equal to the sum of the mass of the gas emitted over the relevant period, multiplied by the global warming potential of the gas and multiplied by the area of the CEA. This calculation is replicated for the gases methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), and the emissions from both gases are summed to give the total emissions from biomass burning at the end of the reporting period.

$K$  is representative of the number of months between the modelling start date and the end of the reporting period.

$GWP_g$  is representative of the global warming potential of the greenhouse gas  $g$  (either methane or nitrous oxide), and is specified in the NGER Regulations as in force from time to time. The global warming potentials for each gas account for the fact that a single methane and nitrous oxide molecule has a larger greenhouse gas effect than a carbon dioxide molecule.

$E_{g,i,k}$  represents the mass of the greenhouse gas  $g$  (either methane or nitrous oxide) that is emitted in a given month. Where the project involves conversion from short-rotation to long-rotation plantations, it is assumed that the fuel use will be similar between the baseline and project scenarios, so any change in emissions will be immaterial. Emissions from fuel use are assumed to be zero for such projects.

$S_i$  is equal to the area of the CEA (in hectares).

Whereas the FullCAM outputs for carbon pools are cumulative (i.e. the outputs represent the total carbon stored in that pool at a given time), the outputs for emissions are representative of the amount of gas that is emitted in a given time period (in this case monthly). As such, total emissions can be calculated by summing the emissions in every month, as is done in Equation 17.

Equation 18 calculates the fuel emissions associated with harvest events at the end of the reporting period. For simplicity, the fuel emissions are calculated by applying an emissions factor of 0.035 (that is, 3.5 per cent) relative to the mass of forest products harvested from the CEA prior to the end of the reporting period.

For all other CEAs, the fuel emissions from forest product harvesting at the end of the reporting period are calculated using Equations 18 and 19. Equation 19 calculates the predicted mass of forest products harvested in a given harvest event ( $C_{Harv,i,h}$ ) as the C mass of forest products in the month the harvest event occurred minus the C mass of forest products in the month immediately before the harvest event occurred. This value is then used in Equation 18 to calculate the fuel use associated with that harvest event. Equation 18 is repeated for all harvest events that occurred prior to the end of the reporting period.



#### 48 Net carbon stock at the end of the reporting period for the project area

The net carbon stock at the end of the reporting period for a project area is calculated using Equation 20. This involves addition of the carbon dioxide equivalent carbon stock at the end of the reporting period (from Equation 14, 15 or 16), minus emissions over the modelling period from fire and fuel use (from Equations 17 and 18), of all CEAs. This value is also added to the value for  $\frac{RC}{D}$ . RC is the total number of Australian carbon credit units (ACCUs) issued, before the end of the reporting period, in relation to each CEA that was removed from the project area before that time and relinquished in relation to each CEA in the project area before the end of the reporting period. RC is included to balance the equation in the case that ACCUs have been relinquished or CEAs were removed. As the equations reference the baseline and current carbon stocks and then deduct previous abatement, the absence of RC would have the effect of double-penalising projects for CEA removals, the relinquishment of ACCUs or reversals of sequestration.

D is the aggregate of the permanence period discount number and the risk of reversal buffer number under Section 16 of the Act that was applied to determine the ACCUs included in RC. The value for  $\frac{RC}{D}$  must be worked out separately for each issue or relinquishment of ACCUs included in RC, and all such values must be aggregated to work out the value for  $\frac{RC}{D}$  in Equation 20.

#### 49 Deemed net carbon stock for project at end of reporting period

Section 49 provides guidance on the appropriate net emissions data to use when reporting the carbon stock in the project area at the end of the reporting period. The reported data may differ, depending on circumstances set out in the section.

Paragraph 49(a) specifies that the maximum net carbon stock permitted is the smaller of:

- The predicted long-term average net carbon stock or long-term project scenario net carbon stock for the project area (Equation 13), or
- the net carbon stock in the project area at the end of the reporting period in the project scenario (Equation 20).

This means that the long-term average net carbon stock or long-term project scenario net carbon stock for the project area acts as a cap for abatement claimed by the proponent. When the net carbon stock at the end of the reporting period in the project scenario has not yet reached the long-term average or long-term project scenario, a project proponent may wish to report the project net carbon stock at the end of the reporting period in order to maximise the abatement claim.

Subparagraph 49(b)(i) permits reporting of a net carbon stock less than the maximum. Proponents might do this if they are uncertain about what their proposed management regime may be in future reporting periods, and don't want to risk restricting future management options by reaching the long-term average project carbon stock before it suits their long-term management intentions to do so.

Subparagraph 49(b)(ii) states that a value reported as less than the net carbon stock cannot be less than a value previously reported for the project. This ensures that proponents report their

project's abatement as either increasing, remaining at its previously reported level, or at the maximum abatement that can be claimed, as determined by the long-term average.

#### 50 Net carbon stock change for a project area in first reporting period under this Determination

Section 50 provides instructions for projects that are calculating their net carbon stock change in the first reporting period under this Determination. Paragraph 50(1) provides the calculation for a project that is not a pre-existing project. For these projects, the net carbon stock change in the project area is calculated as the deemed net carbon stock for the project area (as worked out in Section 49), minus the baseline net carbon stock for the project area (from Equation 7).

For a project that is a pre-existing project, the net carbon stock change in the project area for the first reporting period under this Determination is calculated as the deemed net carbon stock for the project area (as worked out in Section 49), minus the sum of the carbon stocks for each CEA reported in the most recent offsets report under the former determination. Note that where no application has been submitted under the former determination,  $C_{FD}$  will be equal to zero.

The net carbon stock change can be zero or less than zero, because it is a change relative to either the baseline carbon stock or the carbon stock at the end of the last reporting period under the former determination.

#### 51 Net carbon stock change for a project area in later reporting periods

Calculation of the net carbon stock change in a project area at the end of the second and subsequent reporting periods is calculated via application of Equation 23. There are two main components to Equation 23:

- the project net carbon stock change since the last reporting period; and
- the baseline net carbon stock change since the last reporting period.

Calculation of the project net carbon stock change since the last reporting period involves deducting net carbon stock reported in the previous reporting period (in accordance with Section 49), from the carbon stock reported at the end of the current reporting period. This is done so that only sequestration occurring since the last reporting period is claimed.

Calculation of any changes in baseline net carbon stock since the last reporting period (the second component of the equation) involves deducting the long-term baseline net carbon stock (as calculated in the previous reporting period) from the long-term baseline net carbon stock (as calculated in the current reporting period). This means that any changes in the baseline values due to fire events, changes in FullCAM, or addition of CEAs can be adequately reflected in the abatement calculations.

As noted for Section 50, the net carbon stock change may be zero or less than zero. If this is the case, no abatement has occurred.

#### 52 Net abatement amount for a project area

Section 52 provides that the net abatement amount for a project area ( $A_{PA}$ ) is equal to the net carbon stock change in that project area for that reporting period ( $\Delta C_{RP,PA}$ ), calculated using Equation 21, 22 or 23 as necessary.

## **Subdivision 5—Calculation of the net abatement amount**

### 53 Net abatement amount—general rule

Section 53 provides that Equation 25 must be used when calculating the carbon dioxide equivalent net abatement amount for the project if one of the following conditions is met:

- the reporting period is the first reporting period; or
- the net abatement amount for the previous reporting period was zero or greater than zero.

If one of these conditions is met, Equation 25 provides that the net abatement amount for the project ( $A$ ) is equal to the sum of the net abatement for each project area in the project ( $A_{PA}$ ) – as calculated using Equation 24.

### 54 Net abatement amount—where previous net abatement amount negative

Section 54 provides that Equation 26 must be used to calculate the carbon dioxide equivalent net abatement amount for the project in relation to a reporting period if the net abatement amount for the previous reporting period was less than zero. That is, if one of the conditions in Section 53 is not met, Section 54 must be used. The effect of this equation is that where a project reports a negative value in the previous offsets report, that negative value gets carried through subsequent reporting periods. This means that following a disturbance event, crediting will not commence or recommence until the emissions caused by the disturbance are accounted for. Note that in Equation 26,  $A_{RP-1}$  will be a negative number.

## **Part 5—Reporting, record-keeping and monitoring requirements**

### **Division 5.1—Reporting requirements**

#### 55 Operation of this Division

Paragraph 106(3)(a) of the Act provides that a methodology determination may require the project proponent of an eligible offsets project to comply with specified reporting requirements. Section 55 specifies that such requirements are set out in this Division.

Under Parts 17 and 21 of the Act, a failure to comply with these requirements may constitute a breach of a civil penalty provision, and a financial penalty may be payable.

The reporting and monitoring requirements specified in Part 5 of the Determination are in addition to any requirements specified in the rules made under the Act.

#### 56 Information required in offsets reports

Subsection 56(1) requires the proponent to include a map showing each CEA in the project area and the forest management plan as at the end of the reporting period in an offsets report. In addition, the first offsets report must include the forest management plan as at the beginning of the crediting period. For CEAs with a forest start date that was before the beginning of the crediting period, for example, CEAs in a conversion project involving an existing plantation, this will be the forest management plan at the beginning of the crediting period. For other CEAs, this will be the forest management plan as at the forest start date for the CEA.

Subsection 56(2) specifies that when reporting management actions and disturbance events affect part of a CEA, the offsets report must describe how the portion was estimated.

In addition to reporting the management actions and disturbance events, the equivalent FullCAM event must also be reported. The FullCAM guidelines list the management actions and disturbance events and their equivalent FullCAM events for this method.

Subsection 56(3) provides the reporting requirements when an offsets report's data does not refer to the most recently available parameter values, as provided in paragraph 7(2)(b).

Subsection 56(4) provides the reporting requirements for summarising the evidence for removing a CEA or part of a CEA from the project in accordance with Section 21.

### **Division 5.2—Record-keeping requirements**

#### 57 Operation of this Division

Paragraph 106(3)(c) of the Act provides that a methodology determination may require the project proponent of an eligible offsets project to comply with specified record-keeping requirements. Section 57 specifies that such requirements are set out in this Division.

#### 58 Records relating to salvage harvesting

If salvage harvesting was undertaken in a CEA during a reporting period, the project proponent must make and keep records that evidence the salvage harvesting and any ensuing product recovery.

Sufficient evidence could include mill receipts displaying the volume and quantity of logs recovered for commercial use.

#### 59 Records relating to monitoring of management actions, natural disturbances and forest development condition

Section 59 specifies that records of monitoring and evidence of management actions, natural disturbances and forest development must be kept. Subsections 59(2) and 59(3) specify the type of records required. Where ground-based photography is used, photographs should be date-stamped (either on the photo itself, or in the file properties or Exchangeable image file format (EXIF) data for the photograph) and geo-referenced by having spatial co-ordinates provided (usually in the EXIF data for smartphones and cameras with Global Positioning System capability).

#### 60 Records relating to monitoring of management activities

Section 60 requires the project proponent to make and keep records that result from the monitoring of risks and management activities identified in the forest management plan. Records that evidence the management activities that were undertaken in each CEA are also required to be made and kept.

### **Division 5.3—Monitoring requirements**

#### 61 Operation of this Division

Paragraph 106(3)(d) of the Act provides that a methodology determination may require the project proponent of an eligible offsets project to comply with specified monitoring requirements. Section 61 states that such requirements are set out in this Division.

#### 62 Monitoring management actions

Section 62 provides that a project proponent must monitor management actions that have been implemented under the project.

#### 63 Monitoring natural disturbances

Section 63 provides that the proponent must monitor the project area for natural disturbances. When a natural disturbance event occurs, the proponent must provide evidence that supports the estimation of the extent to which any CEA is affected (Section 59(1)(b)). Note that this includes all categories of natural disturbance, including fire.

#### 64 Monitoring forest development

Section 64 provides that a project proponent must monitor the forest development condition.

## **Part 6—Dividing a plantation forest project**

### 65 No division of carbon estimation area

Subsection 77A(2) of the Act allows a methodology determination to make provisions for division of the overall project. That is, the Act permits proponents to report abatement for only part of the project.

Section 65 provides that proponents are not permitted to split a current or former CEA across different parts of a project for reporting purposes.

It is not recommended that proponents undertake partial reporting as it may increase the chance that the abatement amount in a given reporting period will be negative as it takes into account all credits previously issued to the project.

## **Schedule 1—Establishing new plantation forests**

### **Part 1—New plantation project activity and additional eligibility requirements**

#### **1 The new plantation project activity**

Clause 1 of Schedule 1 sets out the eligibility requirements for a project to establish one or more new plantation forests. This clause provides that the project activity that applies to land eligible for a new plantation is planting or seeding to establish the land as a new plantation forest after the eligibility date for the land, maintaining the plantation forest, ensuring that no rotation is longer than 60 years duration and as far as reasonably practicable, the periods between rotations are not more than 24 months.

Other than the requirements of this clause and the maximum rotation length, the Determination does not prescribe or restrict the tree species or rotation lengths used for new plantations.

#### **2 Eligible land for new plantation project activity**

Clause 2 of Schedule 1 sets out the eligibility requirements for land relating to new plantation forests. Land is eligible for a new plantation where there have been no plantation forests, plantation forests which had ceased to satisfy paragraph (e) of the definition of plantation forest, or native forest on the land for seven years before the eligibility date. Paragraph (e) of the definition of plantation forest requires the land to be managed in a way consistent with an intention to maintain a plantation forest.

Regulation 3.36 of the *Carbon Credits (Carbon Farming Initiative) Regulations 2011 (the Regulations)* provides a list of excluded offsets projects, which among other exclusions, prohibits the establishment of vegetation on land that has been subject to clearing of a native forest in the seven years prior to the project application. The combined effect of the Regulations and the Determination means that subsection 13(2) should be taken to mean that there has been no forest on the land for seven years before the eligibility date.

### **Part 2—Additional stratification requirements**

#### **3 Additional requirements for defining new plantation CEAs**

Clause 3 of Schedule 1 specifies that a new plantation CEA, other than a CEA created by re-stratification of an existing CEA, comes into existence on the plantation start date.

## **Schedule 2—Converting an existing plantation forest from a short rotation to a long rotation**

### **Part 1—Conversion project activity and additional eligibility requirements**

#### **1 Definitions for this Schedule**

Clause 1 of Schedule 2 defines the management actions and features which distinguish a short rotation from a long rotation. The definitions apply only to Schedule 2 and instances referring to Schedule 2.

A **short rotation** is a plantation of a species listed in Schedule 6 Part 1 of the Determination that has a rotation length no longer than specified in Schedule 1 Part 1 of the Determination. The definition of inner tree is provided in order to explain the management actions ‘thinning’ and ‘pruning’. It is required so that management actions undertaken for regulatory reasons on trees on the edge of the plantation do not rule out a plantation from being a short-rotation plantation. Whether a plantation has been thinned or pruned in turn determines whether the plantation is a long rotation plantation. The definition of thinned permits the removal of some stems from coppiced trees without the tree being removed, which allows productive growth from the coppice without ruling out the plantation from being a short-rotation plantation.

A rotation is a **long rotation** if a plantation has been thinned or pruned after the starting date of the rotation (defined in Section 5) and the rotation period is at least 10 years longer than the baseline rotation period.

The **baseline rotation period** is used in specifying the default baseline management regime for a CEA (see clause 8 of Schedule 2). In the event that a rotation was in progress at the eligibility date, the baseline rotation period is the longer of the age of the rotation underway, the rotation period of the last rotation that was completed before the eligibility date, for a short rotation (SR) species for the land—the default rotation period listed for the species and region in Schedule 6 Part 1, and for any other species, 15 years.

In the event that no rotation was in progress on the eligibility date (where ‘no rotation’ means the CEA is between rotations), then at least one rotation must have been completed on the CEA, the most recent of which is used as the basis for the default baseline management regime. The rotation length modelled must be either the length of the previous rotation on that CEA, or for an SR species for the land—the default rotation period specified for the species and region in Schedule 6 Part 1, and for any other species, 15 years, whichever is longest.

These defaults in Schedule 6 Part 1 represent industry standard rotation lengths by region and species. The intent of requiring rotation lengths to be the longer of the current age, previous rotation period or an industry standard is to be conservative, as modelling baseline rotation lengths less than industry standards would increase the net abatement amount.

#### **2 The conversion project activity**

Clause 2 of Schedule 2 provides requirements for a conversion project activity under two scenarios:



- if no rotation was in progress on the eligibility date, then the conversion involves managing the first rotation that occurs after the eligibility date as a long-rotation plantation;
- if a short rotation was in progress on the eligibility date, then the conversion involves either:
  - completing that rotation as a short rotation, and managing the following rotation as a long rotation; or
  - managing the current rotation as a long rotation.

The chosen project activity is carried out throughout the crediting period. In addition, since the permanence obligations require the project proponent to maintain the degree of carbon sequestration for which credits were given, there will be in practice an obligation to continue long rotations throughout the permanence period where this is longer than the crediting period.

Subclause 2(c) also sets out further requirements applicable to either of the above scenarios, including ensuring that every subsequent rotation is a long rotation using a long rotation (LR) or undefined rotation (UR) species and ensuring that the periods between rotations are not more than 24 months, as far as reasonably practical.

### 3 Eligible land for conversion project activity

Clause 3 of Schedule 2 sets out the eligibility requirements for land relating to the conversion project activity. Paragraph 3(a) provides that land that is eligible for the conversion project activity cannot be part of the project area of an existing eligible offsets project. Paragraph 3(b) provides that land is eligible if it was either within a national plantation inventory (NPI) region, or no part of the land was further than 100km from the nearest NPI region. The requirement to be located within 100km from the nearest NPI region ensures that the species lists, which are based on NPI regions, can be appropriately applied to conversion projects located outside of an NPI region.

Paragraph 3(c) specifies that if a rotation was underway, it must be a short rotation as defined in clause 1, and the plantation must not have been thinned or pruned during the rotation unless subclause 5(1) or (2) applies. For example, a plantation established with *Eucalyptus nitens* in the Central Victoria NPI region would be eligible if management records or other evidence could demonstrate that no pruning or thinning had been undertaken. Additionally, if the species was a UR species for the land, the requirements in clause 6 must be met. The effect of paragraph 3(c) is that the principal eligibility requirement for conversion projects is to demonstrate that the plantation is of a species within a region that is usually managed as a short rotation, and that the current rotation has not been pruned or thinned. As pruning and thinning are management actions that have a financial cost that would only be offset by the production of clear timber in long-rotation plantations in suitable areas, it is assumed that growers of short-rotation plantations would have no incentive to undertake these actions.

Paragraph 3(d) provides that if no rotation was underway on the eligibility date, land is eligible for the conversion project activity if a short rotation was completed on the land during the seven years before the eligibility date.

Paragraphs 3(e) and (f) provide that during the seven years before the eligibility date, the land must not have been used other than as a plantation forest with a short rotation or as land with no plantation forest, and must not have been cleared of native forest. Additionally native forest must not need to be cleared for a project to be conducted.

#### 4 Evidence required in application

Clause 4 of Schedule 2 specifies evidence that must be presented to demonstrate that land is eligible for conversion from a short-rotation to a long-rotation plantation. In each case, this takes the form of management records or other evidence. As per paragraph 3(1)(c), a plantation must belong to a category listed in Schedule 6 Part 1 or be a UR species to be eligible for conversion from a short-rotation to a long-rotation plantation. In effect, this means it must be in or within 100km from a specified NPI region and is or has been planted with a species listed for that NPI region in Schedule 6 Part 1 or UR species. For example, a *Eucalyptus globulus* plantation in Western Australia would meet this requirement, provided sufficient management records are submitted to demonstrate the species type and location.

#### 5 Requirements for thinning or pruning

Clause 5 of Schedule 2 sets out the conditions under which thinning or pruning is permitted for subparagraph 3(1)(c)(ii). The effect of clause 5 is to not exclude plantations where thinning or pruning was undertaken during the rotation if it can be demonstrated that thinning or pruning was undertaken if the land was in a drought affected or low rainfall region, or for ecological or drought resilience purposes.

#### 6 Requirements for UR species

Clause 6 of Schedule 2 sets out the evidence requirements for undefined rotation (UR) species. UR species are those not listed in Parts 1 or 2 of Schedule 6, which are based on ABARES (2021) data which demonstrates that more than 97 per cent of plantations of that species are managed as short or long rotations, respectively. UR species are therefore subject to greater uncertainty. The effect of clause 6 is to provide a further test that in the baseline scenario, a plantation using a UR species would have been managed as a short rotation, and/or that in the project scenario, a plantation using a UR species will be managed as a long rotation.

To demonstrate that a UR species has been managed as a short-rotation species, one of the following requirements must be met:

- (i) There is evidence that at least one short rotation using the same species has been completed on the land within the previous 10 years
- (ii) It can be demonstrated that the same species has been harvested as a short rotation from another plantation within 100km of the land within the previous 10 years (this demonstrates that the a short rotation of that species is viable and likely for that region), or
- (iii) A qualified independent person certifies in a statement that the person is of the opinion that growing a long rotation of that species is not commercially viable in the baseline scenario (that is, without revenue from ACCUs).

If (ii) or (iii) applies, the chief executive officer (CEO) or chief financial officer (CFO) of the project proponent must also provide a signed declaration confirming that their intention was to grow the UR species as a short rotation in the baseline scenario, as modelled in the default baseline management regime.

If the project proponent proposes to utilise a UR species in a following rotation (that is, as a long-rotation species), one of the following requirements must be met:

- (i) It can be demonstrated that the same species has been harvested as a long rotation from another plantation within 100km of the land within the previous 10 years (this demonstrates that a long rotation of that species is viable and likely for that region), or
- (ii) A qualified independent person certifies in a statement that the person is of the opinion that growing a long rotation of that species is not commercially viable in the baseline scenario (that is, without revenue from ACCUs).

The CEO or CFO of the project proponent must also provide a signed declaration confirming their intended management regime for the current management regime which is using a UR species.

## **Part 2—Additional stratification requirements**

### 7 Additional requirements for defining conversion CEA

For a conversion project, the date the CEA is defined depends on whether the conversion involves establishing a long-rotation plantation following completion of a short rotation or managing the current short-rotation plantation as a long rotation:

- when the conversion involves establishing a long-rotation plantation following completion of a short rotation — the date a planting or seeding of a species in Schedule 6 Part 1 or a UR species is completed.
- when the conversion involves managing the current short-rotation plantation as a long rotation —for the first offsets report relating to the first reporting period.

## **Part 3—Management regimes**

### 8 The default baseline management regime (conversion CEA)

Clause 8 sets out the content required for the default baseline management regime.

The table in clause 8 sets out the elements which specify the default baseline management regime; that is, the management regime in the baseline scenario. The elements are the choice of species planted, length of the rotation period, management actions and disturbance events. The default baseline management regime depends on whether a rotation was in progress on the eligibility date.

In the event that no rotation was in progress on the eligibility date (where ‘no rotation’ means the CEA is between rotations), then at least one rotation must have been completed on the CEA, the most recent of which is used as the basis for the default baseline management regime. The rotation length modelled must be either the length of the previous rotation on that

CEA, or the default rotation period specified for the species and region in Schedule 1, whichever is longest. These defaults in Schedule 6 Part 1 represent industry standard rotation lengths by region and species. The intent of requiring rotation lengths to be at least as long as the default rotation period is to be conservative, as modelling baseline rotation lengths less than industry standards would increase the net abatement amount.

For example, a proponent has an eight year old *Eucalyptus globulus* plantation in Western Australia at the eligibility date, which is intended to be converted to a long-rotation plantation by pruning and thinning. In accordance with the management regime used for demonstrating that the plantation is a short-rotation plantation as described in Schedule 6 Part 1, the harvest age of that plantation has the default value of 13 years. The proponent would then include the harvest age of 13 years in the default baseline management regime.

In the event that a rotation was in progress on the eligibility date (where a plantation was converted by pruning and thinning), then the rotation period is modelled as the age of the rotation on the eligibility date, or the default rotation period specified in Schedule 1 for that region and species, whichever is longer. The default baseline management regime must also include the species, all management actions that were applied before the eligibility date, and any subsequent actions that would have been applied in the rotation had the conversion not taken place. The actions that establish a conversion are not included in the default baseline management regime.

Items 3(a) in the table provides that if there were no disturbance events in a rotation forming part of the default baseline management regime, then the regime should consist of the management actions that were applied or would have been applied in the rotation.

Items 3(b) in the table provides that if a rotation that forms part of the default baseline management regime was affected by a natural disturbance before the eligibility date, then the default baseline management regime should consist of the management actions that would have been undertaken had the disturbance event not occurred.

Subclause 8(2) provides that management actions that would have been applied in the normal course of a rotation for the purposes of clause 8 must be actions that can be demonstrated to have taken place at corresponding stages of the previous rotation, or to be commonly taken in similar plantations in the region at that stage of the rotation. This is to ensure the baseline regime is not modelled based on unrealistic scenarios that could result in a higher net abatement estimate.

## **Schedule 3— Avoiding conversion of a plantation to non-forested land by continuing plantation project activity**

### **Part 1—Eligibility requirements for project activity**

#### **1 The continuing plantation project activity**

Clause 1 of Schedule 3 sets out the eligibility requirements for a project to undertake the continuing plantation activity. This clause provides that the project activity that applies to land eligible for a continuing plantation is planting, seeding or coppicing to establish the land as a continuing plantation forest after the eligibility date for the land, or maintaining the plantation forest until harvest and subsequently planting, seeding or coppicing to manage the land as an ongoing plantation forest. Additionally the project activity involves ensuring that no rotation is longer than 60 years duration and as far as reasonably practicable, the periods between rotations are not more than 24 months.

Other than the requirements of this clause and the maximum rotation length, the Determination does not prescribe or restrict the tree species or rotation lengths used for continuing plantations.

#### **2 Eligible land for continuing plantation project activity**

Clause 2 of Schedule 3 sets out the eligibility requirements for land relating to the continuing plantation project activity. Land is eligible for a continuing plantation if it satisfies a plantation requirement in clause 3, a non-continuation requirement in clause 4, the native forest requirements in clause 5, and no part of the land is further than 50km from the nearest NPI region. The last requirement relating to NPI regions intends to reduce the risk of supporting sub-optimal plantations (which is elevated for this project activity), as those located in or close to NPI regions are more likely to be feasible based on biophysical and logistical constraints. A map of the national plantation inventory regions is published by the Department of Agriculture, Water and the Environment.

It is not possible to participate in the continuing plantation activity by varying a project that was registered under the *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2017* and for which the crediting period has commenced. Instead a new project will need to be registered.

#### **3 Plantation forest requirements**

Clause 3 of Schedule 3 sets out the plantation forest requirements, one of which must be met for the land to be eligible.

The first plantation forest requirement is that there is plantation forest on the land and within two years will be older than the relevant default clearfell age listed for that species and region in Schedule 6. If the relevant species and region is listed in Parts 1 or 2 of Schedule 6, the relevant default clearfell age from the relevant table should be used, otherwise the relevant species and region in Part 3 of Schedule 6 should be used.

The second plantation forest requirement is that there was a plantation forest on the land within the previous 7 years that was harvested before 26 October 2021, or if it was harvested after 26 October 2021, it was older than the relevant default clearfell age less two years (to

avoid incentivising the clearing of immature plantations). 26 October 2021 was the date on which public consultation on the draft determination commenced.

Subclause 3(3) specifies the relevant default age for subsection (2). If the relevant species is listed in Part 1 or 2 of Schedule 6, then the relevant clearfell age is taken from those parts (with the part to be used depending on the specified rotation type in the current management regime). Otherwise, the relevant default age is the clearfell age listed for the relevant species and region in Part 3 of Schedule 6.

Subclause 3(4) specifies that if the table in Part 3 of Schedule 6 lists both a short and long-rotation default clearfell age, the relevant age for the plantation should be used.

The age-based requirements serve as an additional integrity measure, to reduce the risk of crediting non-additional abatement from a plantation forest that would be on the land with or without being part of the project. The age requirements are based on an assumption that immature plantations are at lower risk of immediate conversion.

#### 4 Non-continuation requirement

Clause 4 of Schedule 3 sets out the non-continuation requirements, one of which must be met for the land to be eligible.

The first non-continuation requirement is that the land would be converted to a viable non-forest land use within 24 months if it were not part of the project, and applies if the land satisfies the first plantation forest requirement and if there has been no change in ownership in the previous 12 months.

The second non-continuation requirement is that forest would not be re-established on the land if it were not part of the project, and applies if the land satisfies the second plantation forest requirement and if there has been no change in ownership in the previous 12 months.

The third non-continuation requirement is that a new owner made the change with the intention of changing the land use of the project relative to the previous owners or tenants, and applies if the land satisfies the first or second plantation forest requirement and if there has been a change in ownership in the previous 12 months.

Subclause 4(4) clarifies that a change in ownership includes a change in tenancy where the new lease has a duration no less than the nominated permanence period.

#### 5 Native forest requirement

Clause 5 of Schedule 3 provides that the land must not have been cleared of native forest within the last seven years, and native forest must not need to be cleared for a project to be conducted.

#### 6 Evidence relating to non-continuation requirement

Clause 6 of Schedule 3 sets out the evidence requirements relating to the non-continuation requirement.

Paragraph 6(1)(a) specifies that for paragraph 10(3)(c), which requires evidence to be provided with the relevant application that it is eligible land for the project activity, the CEO or CFO must include a declaration that the land satisfies the relevant requirement. For example, if the first non-continuation requirement is relied on, the evidence provided must

include a declaration by the CEO or CFO confirming that the land meets the first plantation forest requirement, there has been no ownership change within the previous 12 months and that if the land were not part of the project, it would be converted to a viable non-forested land use within 24 months.

Paragraph 6(1)(b) specifies that if the first or second non-continuation requirement is relied on, the evidence to be provided must include a statement detailing how the requirement is satisfied. That is, the statement should articulate what would have otherwise occurred on the land if it was not part of the project. This must include an explanation of why the land will be converted to a viable non-forest land use within 24 months, or why the forest would not be re-established on the land, whichever is relevant, the land use that would apply to the land if it were not part of the project, how financial and other broader strategic considerations have influenced this (for example, if the plantation was owned by a forestry company with long-term supply contracts, the statement should explain why converting the land to a non-forest land use or not re-establishing the planting would not be counter to broader forestry company objectives, for example if the plantation supplied products under long-term contracts). Additionally if there was or is a plantation with a short rotation on the land, the statement should declare that the plantation would not have been converted to a long rotation under the conversion project activity, even if revenue from ACCUs from undertaking a conversion project is taken into account.

Paragraph 6(1)(c) specifies that if the third non-continuation requirement is relied on, the evidence to be provided must include an explanation of how the new owner intends to change the land use relative to what it would have been under the previous owner or tenant, and how financial and other broader strategic considerations have influenced this.

Subclause 6(2) provides that the statement and declaration must be informed by a financial assessment prepared or reviewed by a qualified independent person, which demonstrates that:

- in the absence of the scheme, the plantation forest is likely to convert to a feasible non-forest land use that is financially attractive relative to continuing the plantation, informed by a discounted cash flow analysis which extends for at least 25 years, and
- by participating in the scheme, the proponent expects to receive enough revenue to conduct the continuing plantation project activity for the entirety of the permanence period (the intent of this requirement is to ensure that the project activity can be maintained over the permanence period).

Additionally, if the:

- first or second non-continuation requirement is relied on (that is, if the ownership or tenancy has not changed within the last 12 months), the financial assessment must be informed by a land valuation made by a qualified independent valuer within 12 months of the relevant application, which is attached to the statement, or
- third non-continuation requirement is relied on (that is, if the ownership or tenancy has changed within the last 12 months), the financial assessment must be informed by the sale price or cost of lease, with evidence attached to the statement.

Subclauses 6(3) and (4) clarifies that a qualified independent person or valuer must hold qualifications, determined by the Regulator to be necessary to hold, to prepare the relevant assessment.

## **Part 2—Additional stratification requirements**

### 7 Additional requirements for defining continuing CEAs

Clause 7 provides that a continuing plantation CEA other than a CEA created by a re-stratification of an existing CEA, must be defined for the offsets report relating to the first reporting period after the eligibility date.



## **Schedule 4—Transitioning to a permanent planting**

### **Part 1—Eligibility requirements for project activity**

#### **1 The permanent planting project activity**

Subclause 1(1) of Schedule 4 sets out the eligibility requirements for a project to undertake a permanent planting project activity A. This clause provides that the project activity that applies to land eligible for a permanent planting project activity A is planting, seeding or coppicing to establish the land as a permanent planting with a stocking density of at least 200 stems per hectare, or maintaining the forest as a permanent planting. The stocking density requirement is important to ensure that on-ground forest conditions are consistent with FullCAM modelling of forests. There is no requirement for a minimum stocking density in the new plantation, conversion or continuing plantation project activities, as it is assumed that participants will be planting at the optimal density for commercial forest growth. As remnant plantation forest can become the permanent forest (by ceasing harvest), planting, seeding or coppicing may not be necessary if the remnant plantation forest achieves the required stocking density.

Subclause 2 of Schedule 4 sets out the eligibility requirements for a project to undertake a permanent planting project activity B. This clause provides that the project activity that applies to land eligible for a permanent planting project activity B follows the specified sequence of actions and events. These provisions facilitate a scenario where a remnant plantation forest is transitioned into a permanent environmental planting over the course of the crediting period.

#### **2 Eligible land for permanent planting project activity**

Clause 2 of Schedule 4 sets out the eligibility requirements for land relating to the permanent planting project activities A and B. Land is eligible for a permanent planting project activity A if it satisfies a plantation requirement in clause 3, a non-continuation requirement in clause 4 and the native forest requirements in clause 5. Land is eligible for a permanent planting project activity B if it satisfies the first plantation requirement in clause 3, a non-continuation requirement in clause 4 and the native forest requirements in clause 5.

#### **3 Plantation forest requirements**

Clause 3 of Schedule 4 sets out the plantation forest requirements, one of which must be met for the land to be eligible.

The first plantation forest requirement is that there is plantation forest on the land.

The second plantation forest requirement is that there was a plantation forest on the land within the previous 7 years.

The third plantation forest requirement is that there had been a plantation forest on the land within the previous 7 years which no longer satisfies paragraph (e) of the definition of plantation forest (that is, it is no longer being managed in a way consistent with an intention to maintain a plantation forest) and there had been no other use of the land since the plantation ceased to satisfy paragraph (e) of the definition of plantation forest. This enables plantation forests that were no longer being actively managed as such and are at risk of

conversion to participate in the permanent planting project activity, where it otherwise would not have been eligible due to the definition of plantation forest.

#### 4 Non-continuation requirement

Clause 4 of Schedule 4 sets out the non-continuation requirements, one of which must be met for the land to be eligible.

The first non-continuation requirement is that the land would be converted to a viable non-forest land use within 24 months if it were not part of the project, and applies if the land satisfies the first plantation forest requirement and if there has been no change in ownership in the previous 12 months.

The second non-continuation requirement is that forest would not be re-established on the land if it were not part of the project, and applies if the land satisfies the second or third plantation forest requirement and if there has been no change in ownership in the previous 12 months.

The third non-continuation requirement is that a new owner made the change with the intention of changing the land use of the project relative to the previous owners or tenants, and applies if the land satisfies the first or second plantation forest requirement and if there has been a change in ownership in the previous 12 months.

The fourth non-continuation requirement which may apply for any plantation forest requirement is that the land is unable to be continued, replanted or used as a plantation forest as a result of a Federal, State or Territory government regulation (for example, through changes to land use or water use policies which impact on that land), and is unlikely to regenerate to forest cover (to ensure a conservative baseline). An environmental planting must be permitted but not required on that land (to meet regulatory additionality requirements). This provision enables environmental planting projects to be undertaken on land that would otherwise be converted to a non-forest land use.

Subclause 4(5) clarifies that a change in ownership includes a change in tenancy where the new lease has a duration no less than the nominated permanence period.

#### 5 Native forest requirement

Clause 5 of Schedule 4 provides that the land has not been cleared of native forest within the last seven years, and native forest must not need to be cleared for a project to be conducted.

#### 6 Evidence relating to non-continuation requirement

Clause 6 of Schedule 4 sets out the evidence requirements relating to the non-continuation requirement.

Paragraph 6(1)(a) specifies that for paragraph 10(3)(c), which requires evidence to be provided with the relevant application that it is eligible land for the project activity, the CEO or CFO must include a declaration that the land satisfies the relevant requirement. For example, if the first non-continuation requirement is relied on, the evidence provided must include a declaration by the CEO or CFO confirming that the land meets the first plantation forest requirement, there has been no ownership change within the previous 12 months and

that if the land were not part of the project, it would be converted to a viable non-forested land use within 24 months.

Paragraph 6(1)(b) specifies that if the first or second non-continuation requirement is relied on, the evidence to be provided must include a statement detailing how the requirement is satisfied. That is, the statement should articulate what would have otherwise occurred on the land if it was not part of the project. This must include an explanation of why the land will be converted to a viable non-forest land use within 24 months, or why the forest would not be re-established on the land, whichever is relevant, the land use that would apply to the land if it were not part of the project, and how financial and other broader strategic considerations have influenced this (for example, if the plantation was owned by a forestry company with long-term supply contracts, the statement should explain why converting the land to a non-forest land use or not re-establishing the planting would not be counter to broader forestry company objectives).

Paragraph 6(1)(c) specifies that if the third non-continuation requirement is relied on, the evidence to be provided must include an explanation of how the new owner intends to change the land use relative to what it would have been under the previous owner or tenant, and how financial and other broader strategic considerations have influenced this.

Paragraph 6(1)(d) specifies that if the fourth non-continuation requirement is relied on, the evidence must include a letter from a state or territory government agency confirming the circumstances set out for the fourth non-continuation requirement. Additionally there must be evidence of why the land is unlikely to regenerate to forest cover.

Subclause 6(2) provides that the statement and declaration must be informed by a financial assessment prepared or reviewed by a qualified independent person, which demonstrates that:

- in the absence of the scheme, the plantation forest is likely to convert to a feasible non-forest land use that is financially attractive relative to continuing the plantation, informed by a discounted cash flow analysis that extends for at least 25 years, and
- by participating in the scheme, the proponent expects to receive enough revenue to continue the permanent planting activity for the entirety of the permanence period (the intent of this requirement is to ensure that the project activity can be maintained over the permanence period).

Additionally, if the:

- first or second non-continuation requirement is relied on (that is, if the ownership or tenancy has not changed within the last 12 months), the financial assessment must be informed by a land valuation made by a qualified independent valuer within 12 months of the relevant application, which is attached to the statement, or
- third non-continuation requirement is relied on (that is, if the ownership or tenancy has changed within the last 12 months), the financial assessment must be informed by the sale price or cost of lease, with evidence attached to the statement.

Subclauses 6(3) and (4) clarify that a qualified independent person or valuer must hold qualifications, determined by the Regulator to be necessary to hold, to prepare the relevant assessment.

## **Part 2—Additional stratification requirements**

### 7 Additional requirements for defining permanent planting CEAs

Clause 7 provides that a permanent planting CEA must be defined for the offsets report relating to the first reporting period after the eligibility date.

## **Schedule 5—CEAs transferring unchanged from former determination**

### **1 Application of Schedule**

Schedule 5 provides provisions for plantation forest projects that transition from the former determination in order to be registered under the Determination.

Subclause (1) provides that this Schedule applies in relation to a project that was registered under the former determination that has applied and been approved to have this Determination apply to it under Section 130 of the Act.

Subclause 1(2) provides definitions for this Schedule, including that the former determination is the *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2017* and that the declaration day for the project is the day on which the declaration of application of the new Determination took effect. Subparagraph (2)(c) of Clause 1 provides that an ‘existing CEA’ under the former determination must be a new plantation or conversion CEA which was in existence immediately before the declaration day.

### **2 Allocation of existing CEA to continue the previous project activity**

Clause 2 provides that an existing CEA may be allocated to the equivalent project activity under this Determination, by specifying that the project activity (either the new plantation project activity or the conversion project activity) will continue to apply to the CEA under this Determination.

### **3 Effect of allocation**

Clause 3 provides that where an existing CEA is allocated as a CEA under the new Determination under this Schedule, the eligibility date, baseline rotation period and management record that applied under the former determination continue to apply. Paragraph 2 of Clause 3 provides that where this Determination imposes a requirement by reference to Part 1 or Part 2 of Schedule 6, the proponent may instead choose to comply with the requirement as if it applied by reference to Part 1 of Schedule 1 or Schedule 2 of the former determination. The effect of this clause is that participants may continue to apply the species restrictions in the conversion activity that applied under the former determination, or they may choose to apply the species restrictions in the conversion activity that apply under this Determination.

## **Schedule 6—Species lists**

Schedule 6 contains three lists of species, which are relevant to different sections of the Determination. Note that a given species' absence from the lists in Schedule 6 is not necessarily an indication of the eligibility or ineligibility of that species. Rather, the species lists are relevant only to certain sections of the Determination (listed at the beginning of each Part of Schedule 6), and should be considered only in relation to the relevant section or sections.

### **Part 1 Species presumed to have a short rotation**

Part 1 of Schedule 6 provides a list of species in NPI regions where it can be concluded, based on industry research (ABARES 2021) that 97% or more of these plantations are managed as short-rotation plantations. This list is relevant to the definitions of 'short rotation' and 'SR species' in Schedule 2 and to the plantation forest requirements in Schedule 3. The maximum clearfell age is used to ensure that a given plantation is not eligible as a short rotation if it has been grown past the oldest point that a short rotation would be grown. The default clearfell age is used to ascertain the length of rotations that could have occurred in the baseline scenario, in the event that the plantation is converted to a long rotation in a project prior to reaching harvest age.

### **Part 2 Species presumed to have a long rotation**

Part 2 of Schedule 6 provides a list of species in NPI regions where it can be concluded, based on industry research (ABARES 2021) that 97% or more of these plantations are managed as long-rotation plantations. This list is relevant to the definition of 'LR species' in Schedule 2.

### **Part 3 Clearfell ages for plantation forestry requirements**

Part 3 of Schedule 6 contains a list of clearfell ages relevant to the plantation forest requirements in clause 3 of Schedule 3. These clearfell ages are generally applicable to all NPI regions, however where a given NPI region has a management regime or rotation length that is notably different to others, differentiated default clearfell ages are provided. For example, industry research (ABARES 2021) shows that *Corymbia maculata* in Western Australia is commonly grown as either a short or long rotation. As such, Western Australia has a separate row, with a default clearfell age for both short and long-rotation regimes.

## *References*

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## **Statement of Compatibility with Human Rights**

*Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011*

*The Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2022*

This Legislative Instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in Section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

### **Overview of the Legislative Instrument**

The *Carbon Credits (Carbon Farming Initiative—Plantation Forestry) Methodology Determination 2022* sets out the detailed rules for implementing and monitoring offsets projects that sequester carbon in plantation forests or permanent plantings.

Project proponents wishing to implement the Determination must apply to the Clean Energy Regulator (the Regulator) and meet the eligibility requirements set out under the *Carbon Credits (Carbon Farming Initiative) Act 2011*. Offsets projects undertaken in accordance with the Determination, and approved by the Regulator, can generate Australian Carbon Credit Units, sequestration from the project.

### **Human rights implications**

This Legislative Instrument does not engage any of the applicable rights or freedoms.

### **Conclusion**

This Legislative Instrument is compatible with human rights as it does not raise any human rights issues.

**Angus Taylor, Minister for Industry, Energy and Emissions Reductions**