



Carbon Markets 101

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Agenda

- Key carbon market principles & the ACCU Scheme
- Carbon credit integrity
- Quantifying Carbon Abatement



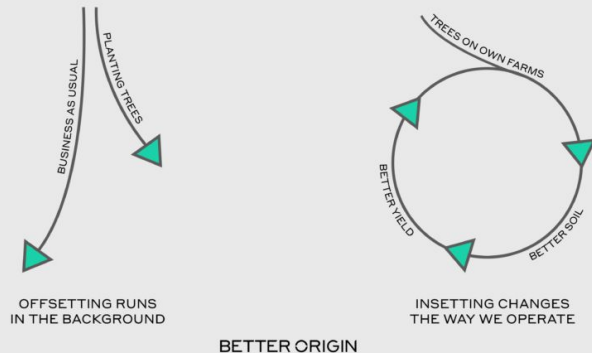
Does money grow on trees?



The Foundation of Carbon Credits

- Carbon credits represent 1 tonne of CO₂-equivalent avoided or removed
 - Methane (CH₄) and Nitrous Oxide (N₂O) are converted to an equivalent of CO₂ based on 'Global Warming Potential'
- 1 Carbon Credit is worth ~\$35
- Used to meet voluntary or compliance emissions reduction goals
 - Insetting vs Offsetting
- Integrity depends on rigorous quantification, monitoring, and verification

CARBON OFFSETTING VS. INSETTING



Source

<https://betterorigin.co.uk/2021/09/why-insetting-not-offsetting-will-help-us-reach-net-zero/>



ACCU Scheme

- ACCU Scheme (formally the Emissions Reduction Fund, and the Carbon Farming Initiative) is Australia's legislated carbon market
- Entities covered by the Safeguard Mechanism that exceed their emissions cap need to purchase 'offsets'
- Organisations can use the offsets to voluntarily offset their emissions
- Only permitted activities can receive credits based on 'Methods'
 - Methods are legislative instruments that define the specifics of eligibility and accounting rules

Vegetation Methods

[Plantation forestry method](#)

[Reforestation and afforestation method](#)

[Savanna fire management methods](#)

[Tidal restoration of blue carbon ecosystems method](#)

[Reforestation by environmental or mallee plantings FullCAM method 2024](#)



ACCU Scheme

- **Carbon Credits (Carbon Farming Initiative) Act 2011**
 - Carbon Credits (Carbon Farming Initiative) Regulations 2011
 - Carbon Credits (Carbon Farming Initiative) Rule 2015
 - Methodologies (Carbon Farming Initiative Methodology Determinations)
 - i. Method Guidelines and Guidance Documents (CER-produced explanatory material)

8 Plantation forest projects and permanent planting projects

- (1) For paragraph 106(1)(a) of the Act, this determination applies to an offsets project if the project involves one or more of the following:
 - (a) establishing new plantation forests; or
 - (b) converting short-rotation plantation forests to long-rotation plantation forests; or
 - (c) continuing existing plantation forests; or
 - (d) the transition of existing plantation forests to permanent plantings;each of which can reasonably be expected to result in eligible carbon abatement.
 - (2) A project covered by paragraph (1)(a), (b) or (c) is a *plantation forest project*.
 - (3) A project covered by subsection (1)(d) is a *permanent planting project*.
- Note 1: Each of paragraphs (1)(a) to (d) is the basis of a project activity. A project can have more than one project activity, provided they are undertaken on separate CEAs. A project can therefore be both a plantation forest and a permanent planting project.
- Note 2: Where a project has multiple project activities, the permanence period discount number that will apply to the project is the greatest permanence period discount number that applies to any of the project activities.



Offsets Integrity Standard

- All Methods are assessed against the Offsets Integrity Standards by an independent statutory committee
 - Emissions Reduction Assurance Committee

1. **Additionality:** The carbon abatement must be unlikely to occur in the ordinary course of events without the incentive provided by the ACCU Scheme.
2. **Measurable and Verifiable:** The emissions reductions or sequestrations must be quantifiable and capable of being independently verified.
3. **Eligible Carbon Abatement:** The abatement must be applicable for use in meeting Australia's emissions reduction targets.
4. **Evidence-Based:** The methods used must be supported by clear and convincing evidence demonstrating genuine carbon abatement.
5. **Accounting for Project Emissions:** Any significant greenhouse gas emissions resulting directly from the project activities must be accounted for and deducted from the total abatement claimed.
6. **Conservativeness:** Where estimates, projections, or assumptions are used, they should be conservative to avoid overestimation of abatement.



Additionality

If a tree doesn't fall in the woods, can you get paid?

- Only provide credits for not doing something you were going to do, or doing something you were not going to do
- Hard to prove but critical for offsetting
- If non-additional abatement is credited, it is worse than no credit being issued

Demonstrating Additionality

- Managed at the Method and Project level
 - Regulatory additionality
 - Not required by state or commonwealth law
 - Financial additionality
 - The Plantation Forestry method has additional measures for demonstrating
 - Common practice test
 - What's 'common' practice for the sector?
 - Greenfield plantations are not common, so minimal additional tests



Permanence

- Offsets are used to counter real emissions that occur (i.e. from fossil fuels).
- For sequestration based projects, this means the carbon must be sequestered for long enough to functionally counter the real emission
- Under the ACCU scheme the default is 100 years
 - A policy construct for a complex problem
- Shorter permanence options are available (i.e. 25 years), but this comes with a discount on credits as an adjustment

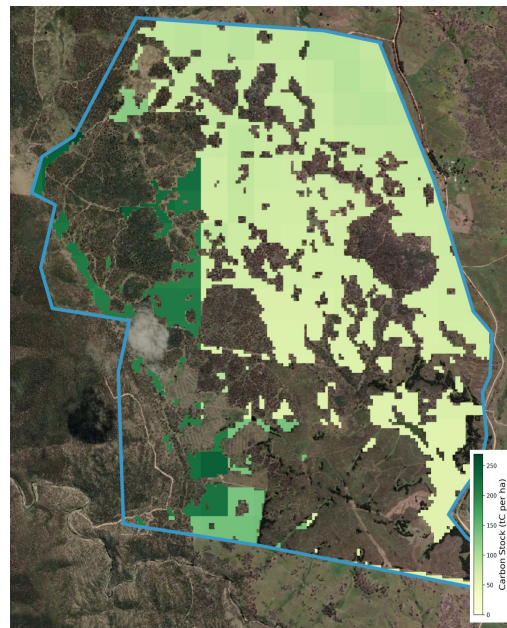
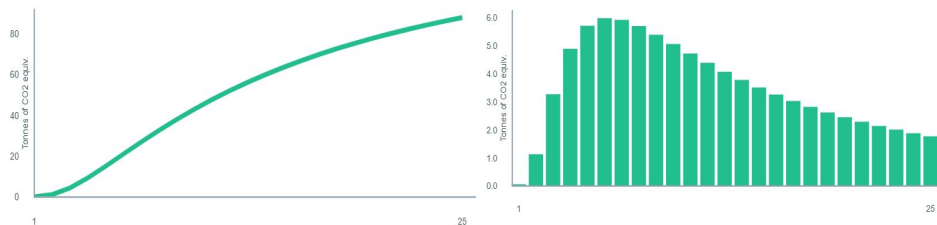
Natural Disturbances

- When there is a natural disturbance across a carbon project, this is referred to as a 'reversal'.
- There is a 'risk of reversal buffer' (5%) under the ACCU scheme to act like a scheme wide insurance policy
- If there is a reversal, project proponents must take reasonable action in a reasonable timeframe to restore the lost carbon, and crediting stops until it has recovered.

Calculating Abatement

- Credits are issued for the Abatement generated over a 25 year crediting period, and claimed in **Audited** Reporting Periods (6 months - 5 yrs).
- For Forest projects, abatement is increases in Aboveground Biomass, Belowground Biomass, and Dead Organic Matter.
- Forest methods - model for Environmental Plantings and Plantation Forestry
 - FullCAM 2020 Calibrations for Environmental Plantings
 - FullCAM 2016 for Plantation Forestry
 - **No guarantee that the version of FullCAM you start with will be the version you have to use**
- Measurement option also available for environmental plantings

Environmental Plantings



Outputs replicate FullCAM models in FLINTpro

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Plantation Forestry

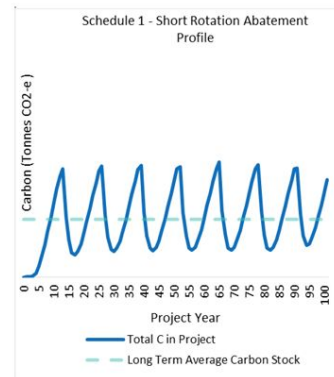


Figure 9: Project carbon and long-term average carbon stock for a new 13-year rotation plantation of *Eucalyptus globulus*.

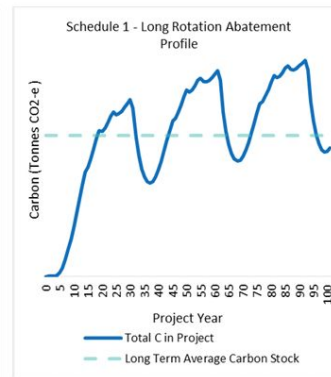


Figure 10: Project carbon and long-term average carbon stock for a new 30-year rotation plantation of *Pinus radiata*.

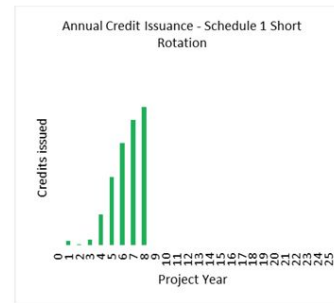


Figure 11: Annual credit issuances for the plantation presented in figure 9. Credit issuances cease after year 8, as credits issued equal long-term average carbon stock at this point.

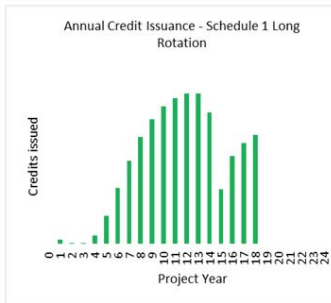


Figure 12: Annual credit issuances for the plantation presented in figure 10. Credit issuances cease after year 15, as credits issued equal long-term average carbon stock at this point. Note that the drop in issuances in year 15 of the project corresponds with a thinning event at year 15 of the project scenario.



Thank You

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