



Department of  
**Primary Industries and  
Regional Development**

# WA Carbon Farming and Land Restoration Program

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Manager - Low Carbon Futures**

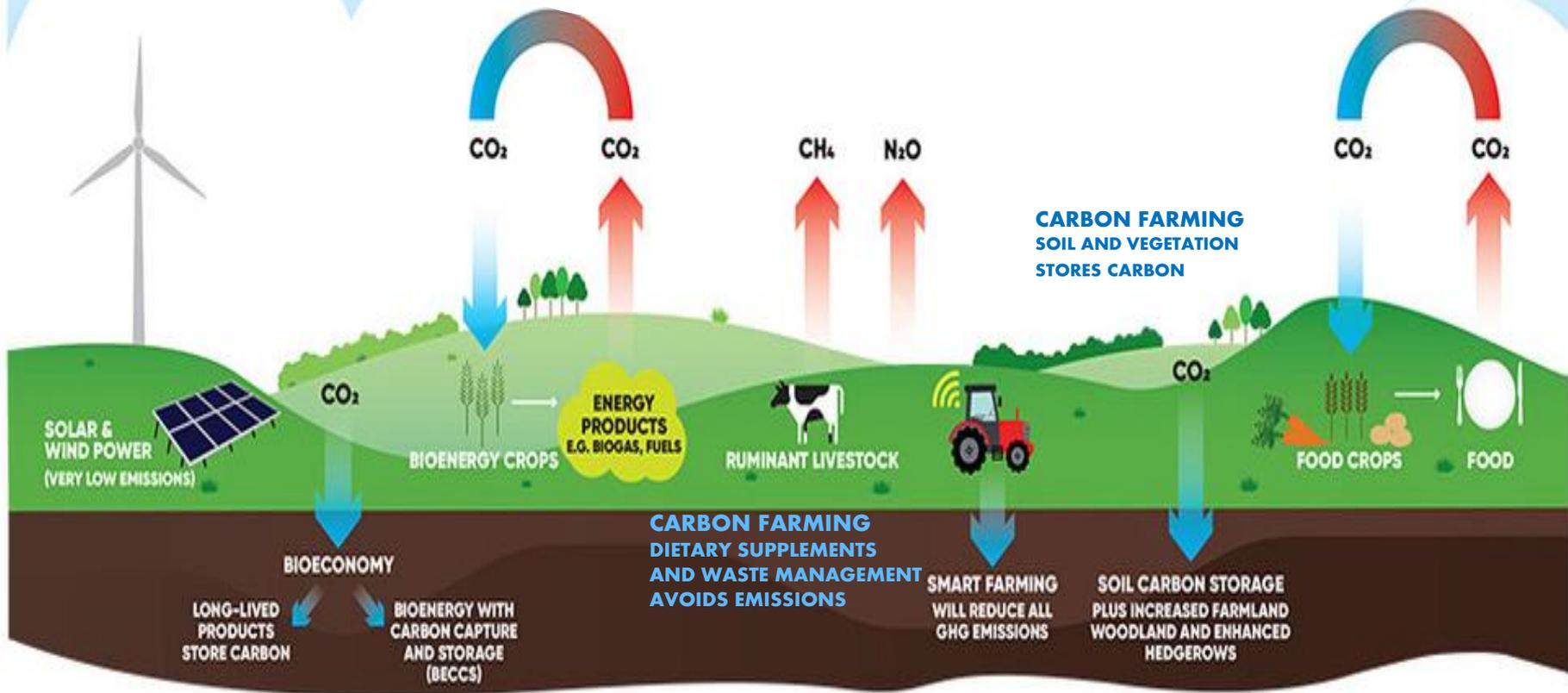


# Opportunities for farmers

## AGRICULTURE

Opportunity to reduce and offset emissions

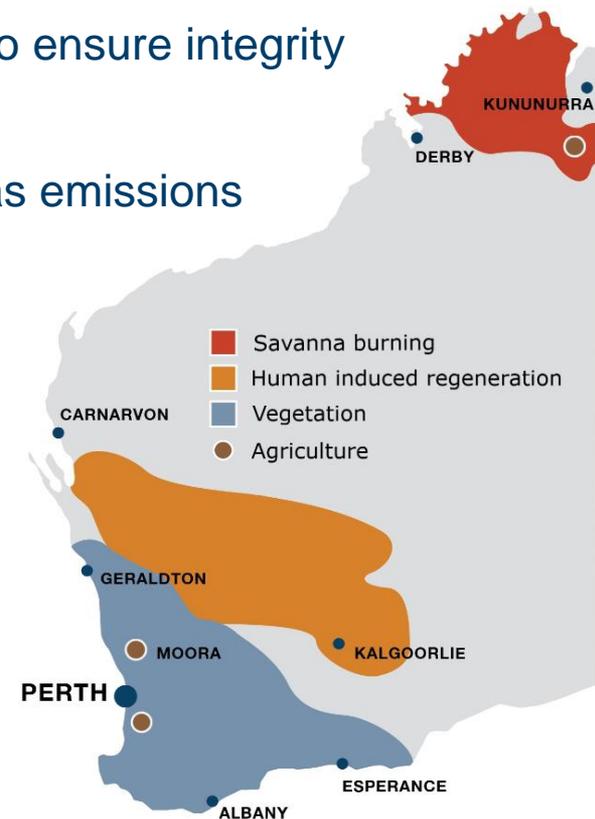
Investment and business opportunity





# What is carbon farming?

- Activities which store (sequester) carbon in vegetation and soil. Registered projects can generate **carbon credits**.
- Clean Energy Regulator (CER) approves Emissions Reduction Fund (ERF) methods and issues Australian carbon credit units (ACCUs)
- 1 tonne of emissions stored or avoided = 1 ACCU (spot price \$23.50)
- ACCUs are a tradeable financial product – regulated to ensure integrity
- ACCUs can be
  - sold to Australian entities to offset greenhouse gas emissions
  - held as an asset
  - used to offset your emissions



# WA Carbon Farming and Land Restoration Program



Designed to:

- overcome barriers to the uptake of carbon farming projects
- provide access to capital through upfront purchase of carbon credits
- deliver public environmental, social and economic co-benefits
- build capacity, increase understanding about carbon – mature the market
- increase the uptake of innovative sequestration activities that improve soil carbon and sustainability

Key principles:

- Maintain the integrity of farming communities and the WA agricultural industry
- Show carbon farming is a complementary activity, not a competitive one
- Realise the potential of the WA agriculture sector to sequester carbon in the landscape
- Enhance the long-term productivity and sustainability of agriculture



# Carbon Farming and Land Restoration Program



## ACCU Plus A

Emissions Reduction Fund  
*Vegetation or Soil* projects  
ACCU delivery  
Co-benefits

## ACCU Plus B

ERF soil carbon projects  
Low rainfall <350mm  
Data, “proof of concept”  
ACCU delivery  
Co-benefits

## Future Carbon

Pilots and trials  
Innovative ag practices  
New ERF methods  
Knowledge  
Co-benefits

### ERF Vegetation methods

*Environmental or Mallee plantings*  
*Reforestation and Afforestation*  
*New Farm Forestry Plantations*

### ERF Soil carbon methods

*Measurement of Soil Carbon Sequestration in Agricultural Systems 2018*  
*New - Soil Organic Carbon Method 2021*

### Future Carbon

- Potential to become new ERF methods or sequester significant levels of SOC
- Soil testing/analysis, effective activities that increase carbon, identify prospective areas

# ACCU Plus – Soil

For illustrative purposes only

## Proponent offered a Funding Agreement

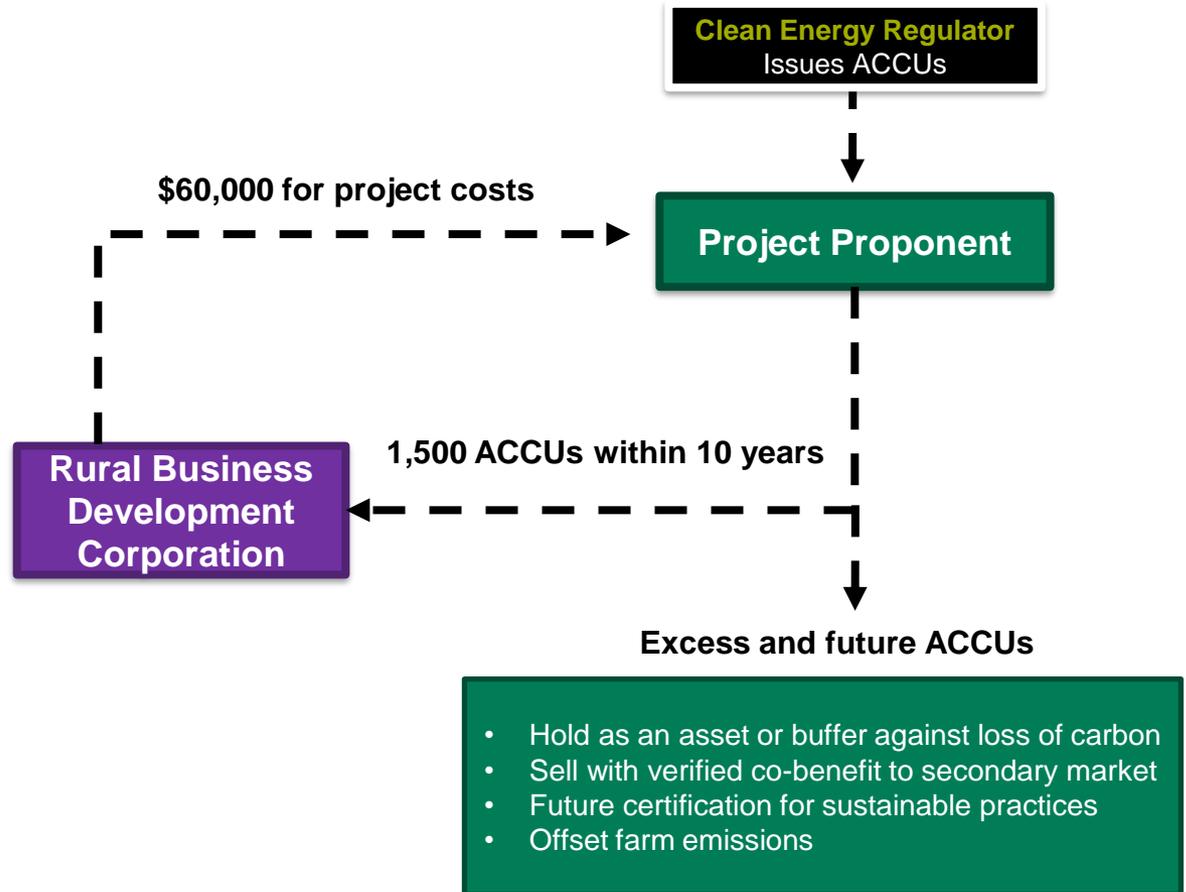
Project costs in return for a portion of ACCUs created

Funding Agreement with RBDC for agreed  
# ACCUs      \$ Funding

Co-benefits – reduced wind erosion,  
improved soil health and ag productivity

Project chosen as it is in a low rainfall  
priority region, provides important data,  
influences on-ground change

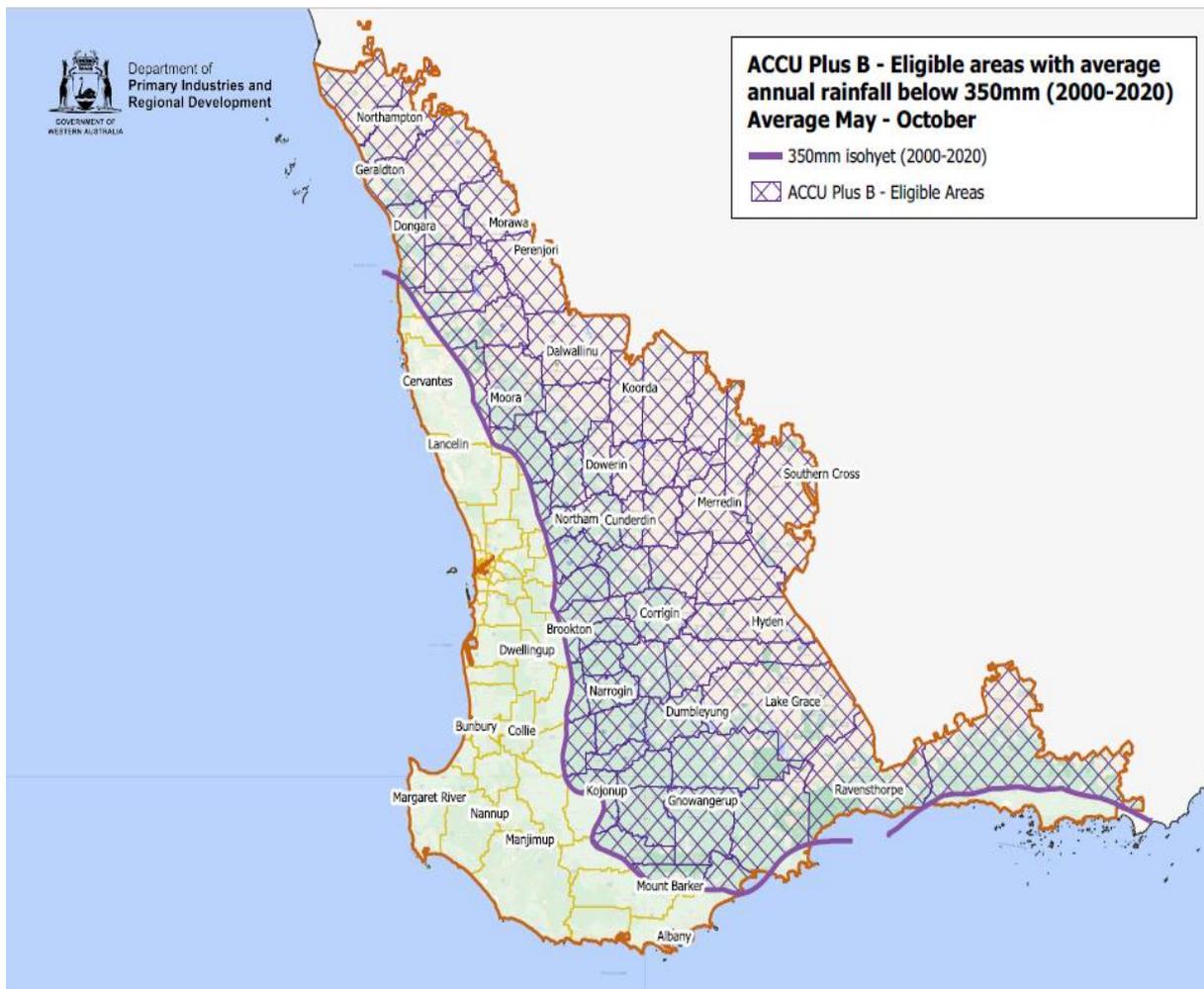
Can be revoked if project not able to  
produce ACCUs



# ACCU Plus B for the eastern Wheatbelt



- CF-LRP encourages farmers to participate, cover some of the costs, reduce the risk
- Data and co-benefits are the focus - Soil health, Agricultural productivity
- Long term practice change to show the benefits and what works
- Gives scale – low sequestration rate over a large area
- What other benefits could be uncovered? Frost resistance?





# Why start a soil carbon farming project?

- Not just about ACCUs
- Soil sampling measures changes in SOC and provides information about soil nutrition and health
- Increasing soil carbon benefits agricultural productivity and profitability



## Diversified revenue

Carbon credits provide another income stream for your property.



## Farm benefits

Improved soil health, enhanced water retention and drought resilience, and better crop and pasture yields.



## Ecosystem health

Helps regenerate degraded land and unlock it for more productive use.



## Understand your soil

Manage your land more efficiently using your soil's nutrient data.

## Benefits:

- Reduced erosion and soil loss
- Better soil structure
- Increased soil biodiversity
- Buffering against drought
- Improved nutrient cycling

# New method - end of 2021

Current soil carbon method: *Measurement of Soil Carbon Sequestration in Agricultural Systems 2018*

New *Soil Organic Carbon Method 2021* being finalised

- Dubbed the 'Measure-Model-Measure' method (hybrid)
  - Broadens eligible activities
  - Reduces sampling costs by using new models
  - Evidence of past land management activities reduced from 10 to 5 years
- Lowers the cost of running soil carbon projects
- Potential to sequester soil carbon on a broad scale and improve farm productivity and climate resilience
- You can convert to the new method if the project is already registered

# Eligible activities



- Managing your land differently can increase soil carbon levels
- Carbon farming can range from a single change in land management to a whole of farm integrated plan which maximises carbon capture and emissions reduction
- Adopt at least one new eligible activity (can be combinations):
  - Maximum groundcover / cover cropping
  - Re-establishing or rejuvenating a pasture by seeding
  - Establishing and maintaining a pasture where there was previously no pasture
  - Altering stocking rate, duration or intensity of grazing
  - No-till cropping
  - Natural Sequence Farming - modifying landscape features to remediate soils
  - Mechanically adding or redistributing soil through the soil profile
  - Applying biochar, activated clays, nutrients, lime or gypsum, green manure
  - Use soil inoculants and stimulants
  - Stubble retention
- Activities described in the Land Management Strategy can change over time

# Participating in the Emissions Reduction Fund (ERF)



To generate ACCUs you need to be involved with the ERF

Steps involved in running a carbon farming project:

1. Plan the project - feasibility, eligibility, your capability, eligible interest holders. Seek advice – legal, financial, tax, agronomists, carbon advisor
2. Register your project with the Clean Energy Regulator (do this first!)
3. Start the project activities and deliver on the project activities
4. Report to the CER to claim ACCUs
5. Maintain carbon levels for 25 years (permanence period)



# What do you need to do?

- Understand your soil's carbon – now and potential
- Develop a Land Management Strategy – what activities will increase SOC?
- Identify the Carbon Estimation Areas

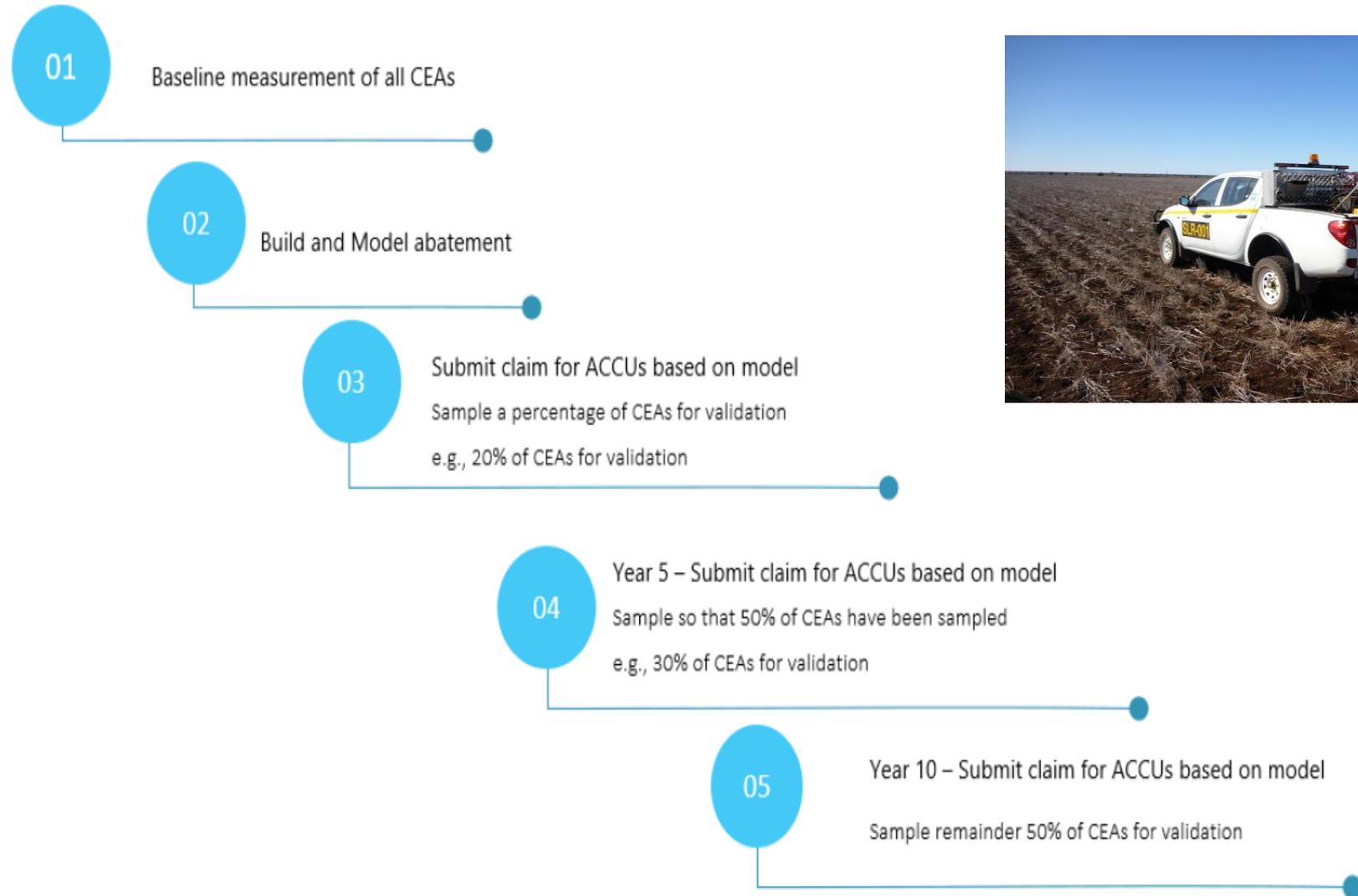


- Account for your emissions - stock, lime etc
- Create a sampling plan





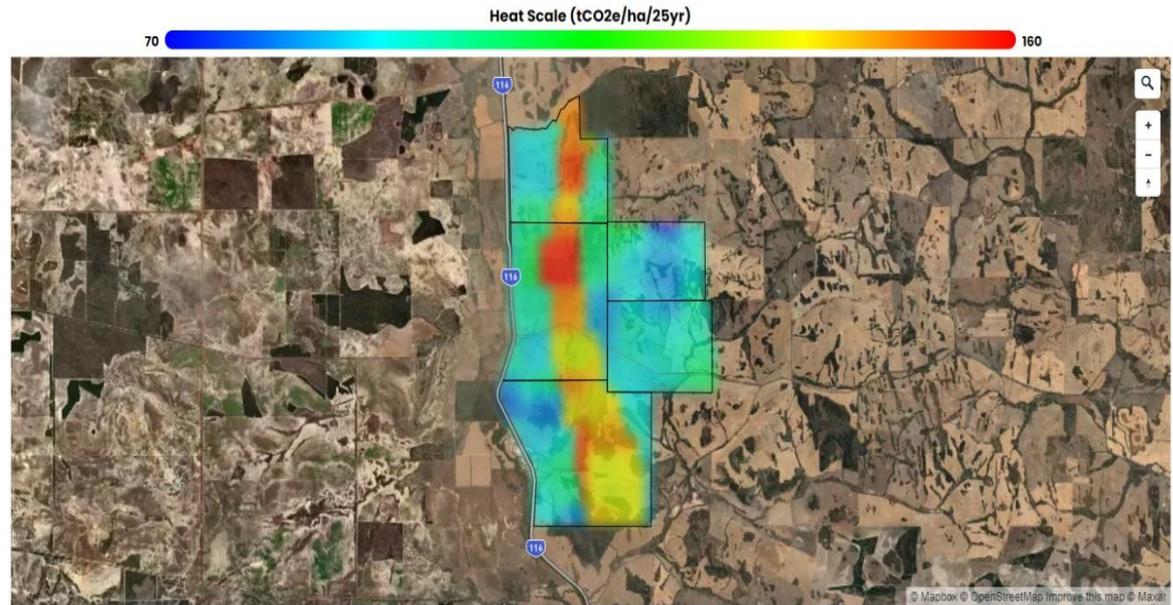
# New Method – example of the approach



If the model fails to validate, the project falls back to normal sample-based abatement estimates, and the model cannot be applied.

# Tools and Support

- Growing number of online tools that can be used to identify soil carbon levels, the opportunities and help you plan the project.
- Professional consultants can also help.



## Your Results

X

The current organic carbon (OC) is estimated to be **0.56%** in the region. With a land area selected of **2,313 ha**, we expect a growth of **1.35x** possible over a 25 year project lifetime. This is equivalent to:

**75,202 ACCU**

(before discounts)

# Estimating the carbon levels: LOOC-C (CSIRO)



## LOOC-C

A landscape options and opportunities for carbon abatement calculator

[Introduction](#)

[Farm details](#)

[Method discovery](#)

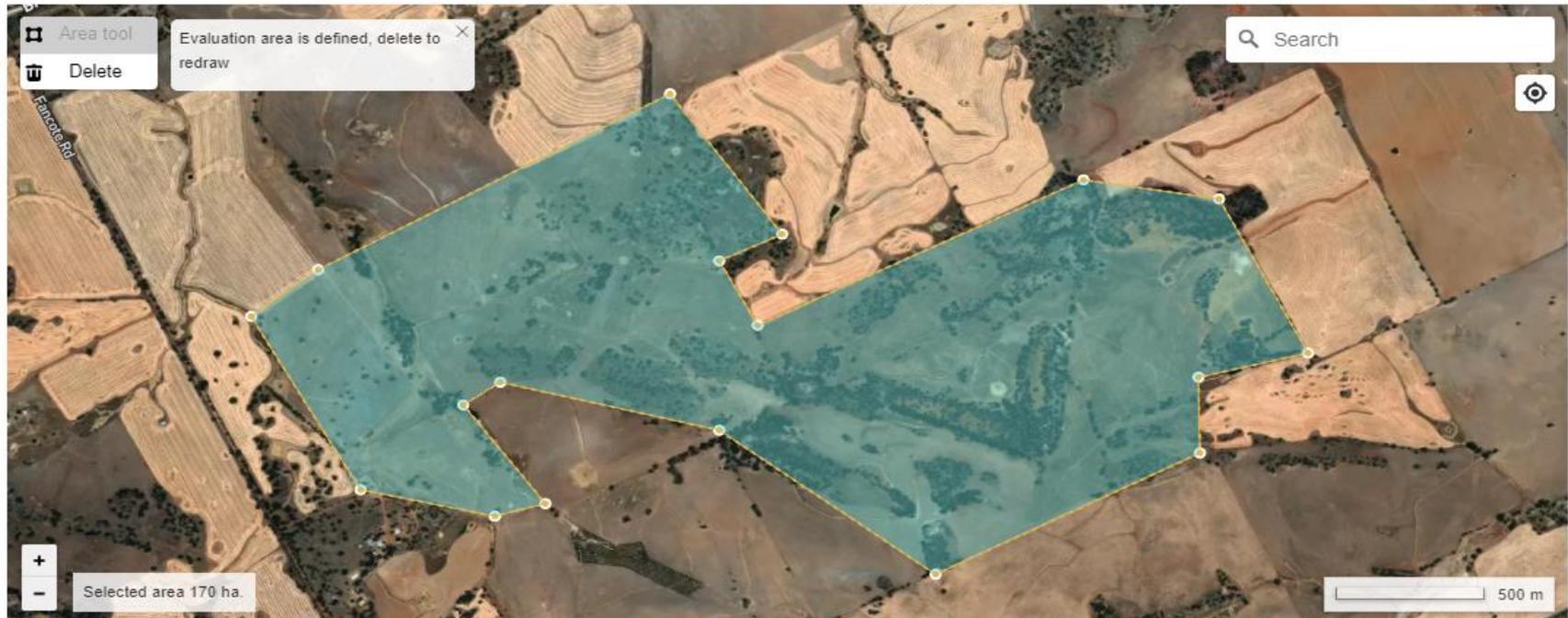
[Next Steps](#)

[About](#)

## Project Location

Select an area where land management activities (such as growing crops, managing re-vegetation or raising livestock) will be uniform over a 25 year duration.

To select the area on the map below, zoom to your region of interest, then click on the polygon tool. The area you wish to evaluate can be selected by progressively clicking around the outside boundaries of the area. Close off the area by double clicking or clicking on top of the starting point.



# LOOC-C (CSIRO)

## Method discovery

LOOC-C supports discovery of two types of methods that use a set of accepted emission factors to estimate potential sequestration of carbon. Broadly known as soil carbon or vegetation methods.

Based on the information provided, possible projects are shown on the cards below. Each card includes an estimate of total abatement (tCO<sub>2</sub>-e) the project may be able to receive over the 25 years of the project (bold black numbers). The annual rate of abatement (tCO<sub>2</sub>-e/ha/y) is provided in parentheses in units of tCO<sub>2</sub>-e/ha/y. The coloured boxes indicate possible co benefits that are associated with the carbon farming project. You can select the card for more information about the projects and their associated benefits. If you want a copy of this information, select 'save as PDF' to save or print the page.

### Farm details

- Prior production systems: Pasture
- Pasture renovation? No
- Prior use of irrigation? No
- Prior use of synthetic fertiliser? No
- Prior use of lime? No
- Source of irrigation water during the carbon project? Yes



NB: need to apply a 20% discount and 5% minimum buffer

Not all methods are applicable. This example looks at the two most relevant: reforestation and soil carbon.

### Available methods

<p><b>Estimating sequestration of carbon in soil using default values method</b></p> <p>Agricultural method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>Multiple activities are possible within this method, each with different estimates</p> <p><a href="#">View Estimates &gt;&gt;</a></p>	Benefit type	Rating	Farm co-benefits	██████	<p><b>Reforestation by environmental or mallee plantings</b></p> <p>Vegetation method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>25 year estimate over the whole project area (tCO<sub>2</sub>-e): <b>29,449</b></p> <p>Annual per ha estimate (tCO<sub>2</sub>-e/ha/y): <b>6.92</b></p>	Benefit type	Rating	Farm co-benefits	██████	<p><b>Human-induced regeneration of a permanent even-aged native forest</b></p> <p>Vegetation method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>25 year estimate over the whole project area (tCO<sub>2</sub>-e): <b>18,750</b></p> <p>Annual per ha estimate (tCO<sub>2</sub>-e/ha/y): <b>4.40</b></p>	Benefit type	Rating	Farm co-benefits	██████
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<p><b>Native forest from managed regrowth</b></p> <p>Vegetation method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>25 year estimate over the whole project area (tCO<sub>2</sub>-e): <b>21,683</b></p> <p>Annual per ha estimate (tCO<sub>2</sub>-e/ha/y): <b>5.09</b></p>	Benefit type	Rating	Farm co-benefits	██████	<p><b>Measurement of soil carbon sequestration</b></p> <p>Agricultural method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>Please provide more details to get an estimate and method viability evaluation</p> <p><a href="#">Estimate &gt;&gt;</a></p>	Benefit type	Rating	Farm co-benefits	██████	<p><b>Beef herd management</b></p> <p>Agricultural method</p> <table border="1"><thead><tr><th>Benefit type</th><th>Rating</th></tr></thead><tbody><tr><td>Farm co-benefits</td><td>██████</td></tr></tbody></table> <p>Please provide more details to get an estimate and method viability evaluation</p> <p><a href="#">Estimate &gt;&gt;</a></p>	Benefit type	Rating	Farm co-benefits	██████
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**NB: need to apply a 20% discount and 5% minimum buffer**

Agricultural method

Close

## Measurement of soil carbon sequestration

Method Details Farm Co-benefits Estimate

**Australian Carbon Credit Units: 14,161** tCO<sub>2</sub>-e over 25 years

### Estimated 0-30 cm soil carbon content for your polygon: 0.8%

This soil carbon value is based on data retrieved from the national soils grid.

### Actual 0-30 cm soil carbon content for your polygon: 0.8 %

If you have data available that more accurately reflects the soil carbon, enter the average across the polygon here. It is not necessary to provide your own soil carbon data, however providing a more accurate value will improve the accuracy of the Australian Carbon Credit Units estimate.

### Your target 0-30 cm soil carbon content 1.3 %

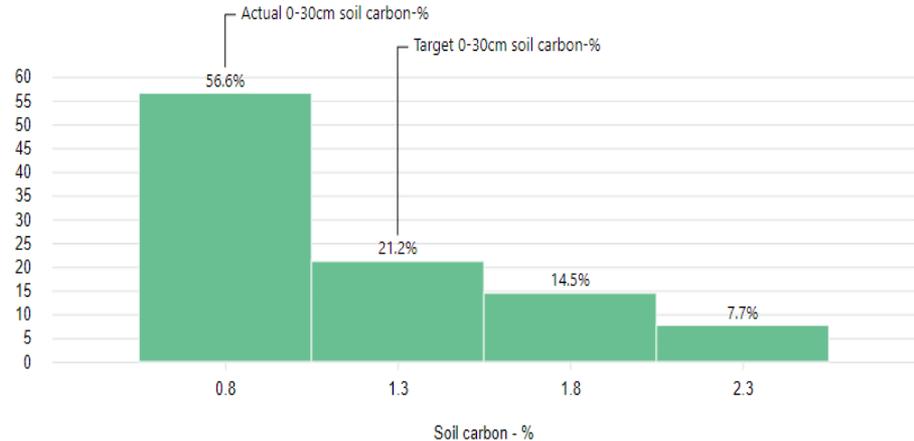
Please provide a soil carbon level that you would use as a target for an ERF project



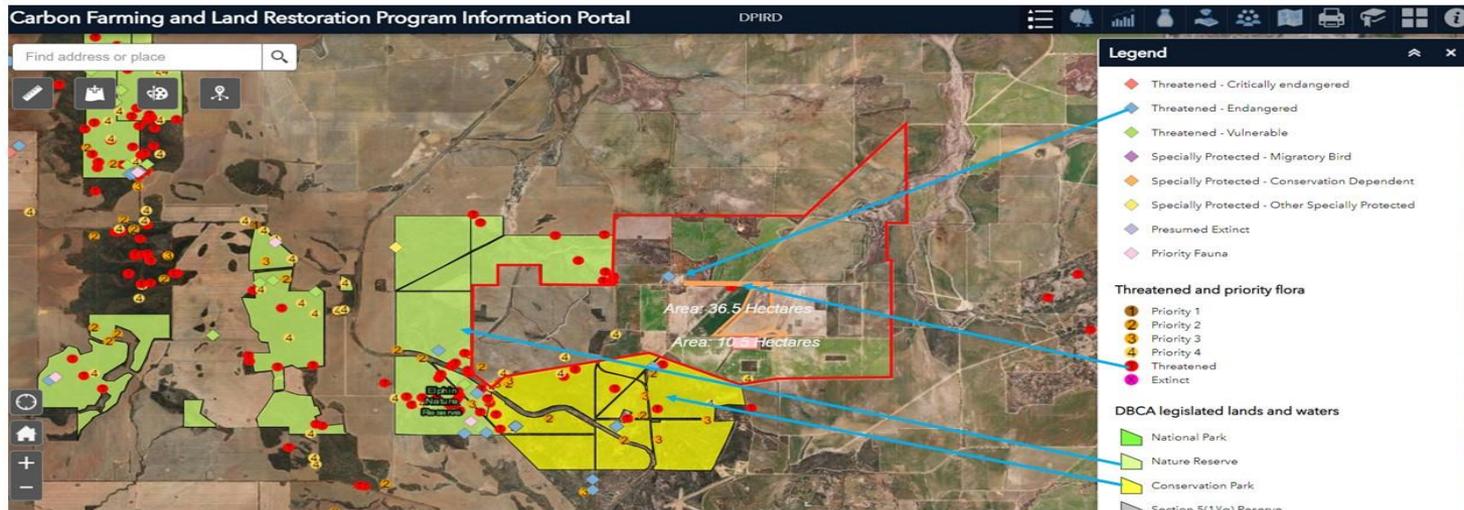
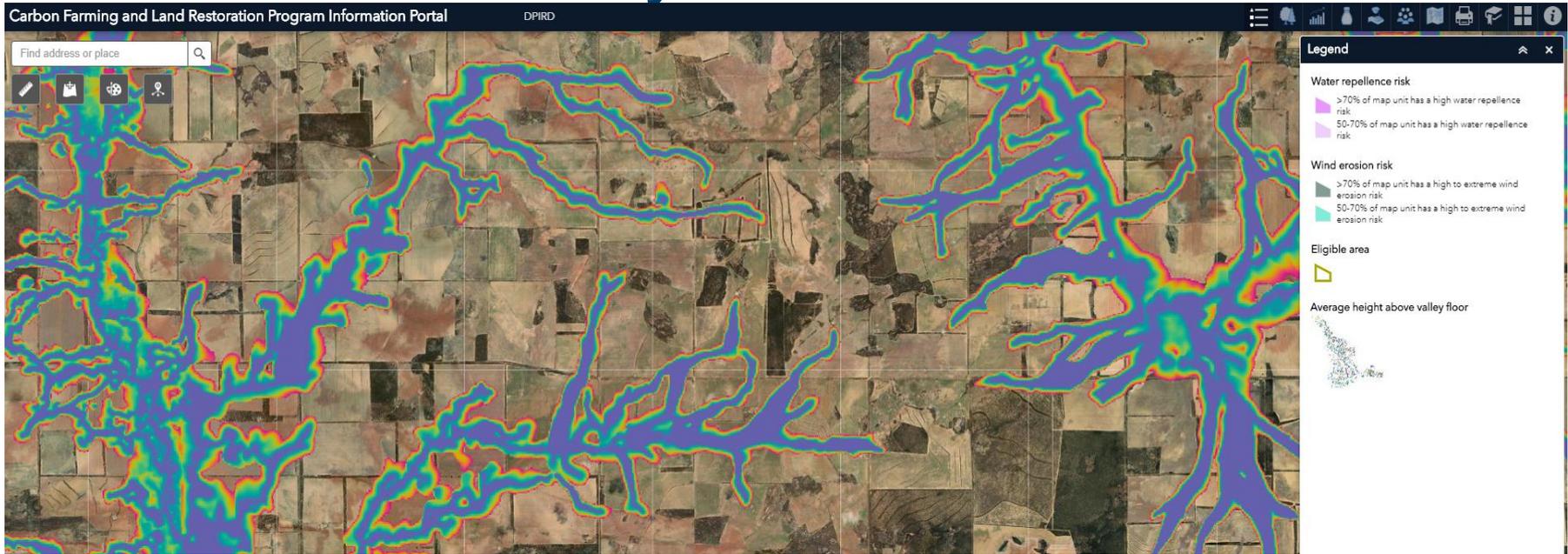
### Soil carbon in your region

The chart below shows the range of soil carbon percentages within 100km radius of your proposed project, and where both estimates of your current soil carbon and your proposed soil carbon increases are within the range of your region. This chart does not warrant that you will be able to achieve your target concentration of soil carbon. Users will need to do their own research on activities that might increase soil carbon in their situation. Factors affecting soil carbon increases include soil type, climate and management activities.

Percentage of land in your region - within 100km radius



# CF-LRP Portal to identify co-benefits



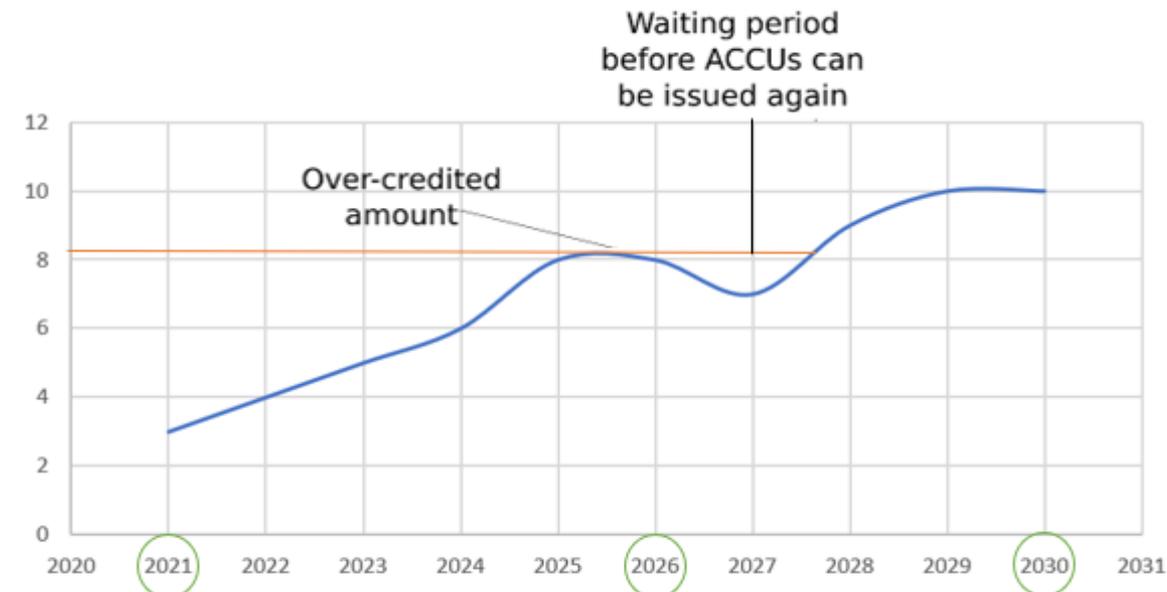
Part 1: **Biodiversity & conservation co-benefit eligibility**—co-benefit eligibility requirements can be demonstrated through the Portal. Further examples of Biodiversity & conservation co-benefits are provided in Part 2.

\*In the example above, the property the activities will be implemented on is outlined in red. The co-benefit eligibilities that apply to the property area have been highlighted using blue arrows. Proponents can provide additional information to support the Biodiversity & conservation co-benefits proposed.

# What happens if... the carbon level drops?

Increasing soil carbon is dependent on existing carbon levels, soil type, management history, rainfall and prevailing weather conditions – expected to vary

- The landholder has been over credited with ACCUs in 2025
- The landholder does not relinquish those credits
- They wait for the overall carbon to recover to the previous levels before any ACCUs can be issued again
- Once the waiting period is over, the project starts producing credits again - **red line**



# What happens if...?

- We sell the land / farm?
- We don't want to keep going with the carbon farming project?
- Do I need to repay the CF-LRP money or buy ACCUs if the carbon level doesn't reach what we thought it would?

## For ACCU Plus B:

- Pioneering – need to take on the challenge of increasing soil carbon
- Government shares the risk
- Run the project correctly - be eligible, at least 5-8 years (revoke)
- Demonstrate good practice and share knowledge with others
- Provide data and information to DPIRD
- Scale is important

# Prepare (See the Key Steps hand out!)

- Ask questions: talk to agronomists, financial and legal experts; NRMs, grower and land care groups
- Understand:
  - ERF Methods and activities – what is right for you?
  - Project eligibility (CF-LRP and CER)

New project, additional – activities not started before registration and need CF-LRP funding

- Permanence obligation – 25 years
- Project requirements – auditing and reporting, cost to change practice and continue the activities
- Eligible Interest Holder consents i.e., mortgage holders, others with interest in the land
- Estimate current carbon and potential: LOOC-C, online tools, carbon consultants
- How will you measure, monitor, report on the co-benefits?
- Data and information sharing with DPIRD – how and what and when

# Expression of Interest

- Submit an expression of interest via SmartyGrants
- Round 1 EOIs for soil carbon projects close next Friday 1 October 2021
- **Round 2 will open early 2022**

## More Information

- DPIRD Carbon Farming and Land Restoration Program webpages

[www.agric.wa.gov.au/CF-LRP](http://www.agric.wa.gov.au/CF-LRP)

- Resources and how to apply to the CF-LRP

[www.agric.wa.gov.au/CF-LRP/Resources](http://www.agric.wa.gov.au/CF-LRP/Resources)

- LOOC-C (CSIRO carbon mapping)

<https://looc-c.farm/farmDetails>

- Climate Solutions Fund – all the methods and requirements

<http://www.cleanenergyregulator.gov.au/csf/Pages/CSF-home.aspx>

Email [carbonfarming@dpiird.wa.gov.au](mailto:carbonfarming@dpiird.wa.gov.au)

# Thank you

Visit: [agric.wa.gov.au/CF-LRP](https://agric.wa.gov.au/CF-LRP)

Email: [carbonfarming@dpird.wa.gov.au](mailto:carbonfarming@dpird.wa.gov.au)

## **Important disclaimer**

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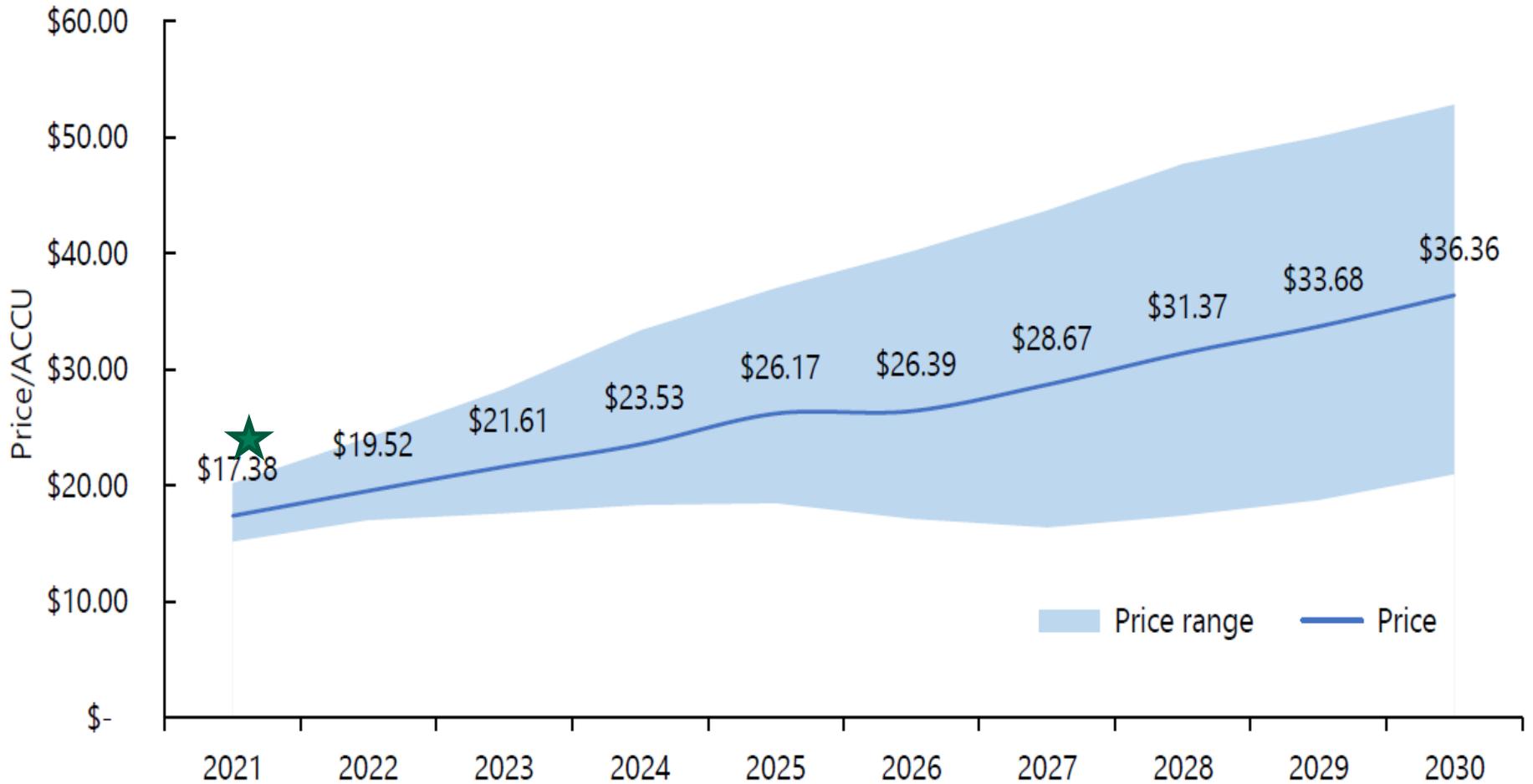
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# ACCU Plus (carbon credits + co-benefits)

- Projects must:
  - not have started before registration with the CER (if you're thinking about it – register!)
  - use approved CER carbon sequestration methods
  - be additional – need CF-LRP funding to go ahead
- **Co-contribution** – minimum 30% cash i.e. \$30 000 for every \$100 000 of funding. Total project funding is \$130,000
- Project proponent proposes:
  - number of ACCUs being offered
  - funding required – this gives the price per ACCU (value for money)
  - soil projects will have milestones
  - co-benefits to be delivered and how they will be measured, monitored and reported on
  - Funding Assistance Agreement (contract) term – maximum 10 years

# ACCU Price Forecast

Source: Market Advisory Group



Note: Price as at December each year.