



Australian Government
Clean Energy Regulator

CLIMATE
SOLUTIONS
FUND

Understanding your soil carbon project

Climate Solutions Fund user guide for
measured soil carbon projects

V4.0 17 November 2020



Participating in the Climate Solutions Fund

The Climate Solutions Fund builds on the Emissions Reduction Fund and offers landholders, communities and businesses the opportunity to run new projects in Australia that reduce or remove greenhouse gas emissions from the atmosphere.

By running a project, you can earn Australian carbon credit units (carbon credits) and sell them to the Australian Government, or to companies and other private buyers. Each carbon credit represents one tonne of carbon dioxide equivalent emissions stored or avoided (noting that legislated discounts apply to abatement from projects that store carbon).

How participating in the Climate Solution Fund works

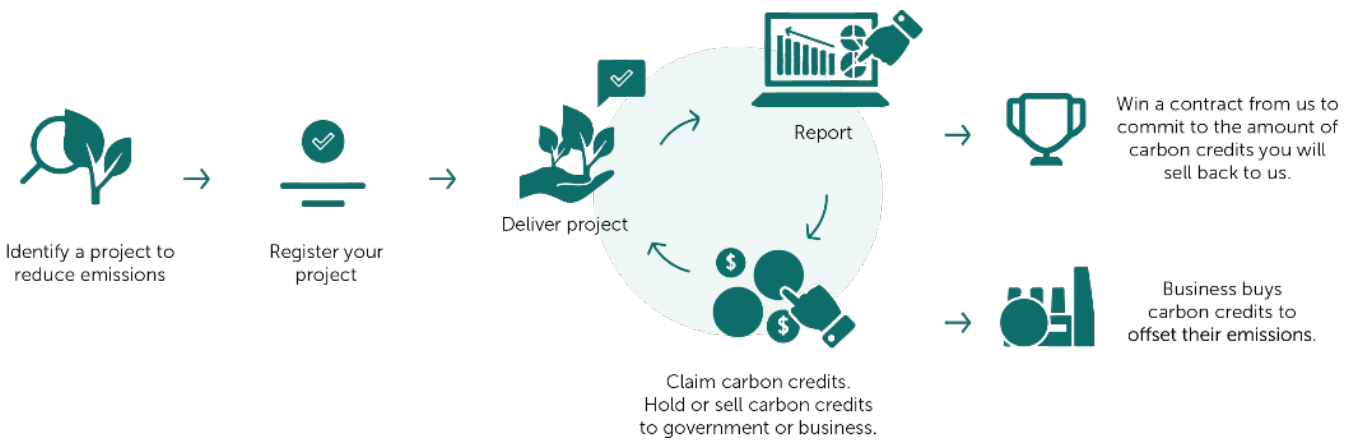


Figure 1: Climate Solutions Fund project lifecycle

There are four general steps in running a project and participating in the Climate Solutions Fund:



1. Plan your project, make sure the project is eligible, and ensure you hold legal right.



2. Register your project with the Climate Solutions Fund.



3. Run your project and deliver on project activities.



4. Report on your project and claim carbon credits.

See our website¹ for more information on selling your carbon credits to the government or other interested buyers.

¹ <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-2-Contracts-and-auctions/bidding-at-an-auction>

Soil carbon projects

A soil carbon project stores carbon in agricultural soil to reduce the level of greenhouse gases in the atmosphere. You improve your soil carbon levels by undertaking new, eligible land management activities. Examples of such activities include improving fertiliser application, re-establishing pasture or modifying grazing practices.

You'll need to measure your soil carbon levels before and after your new land management activities to calculate soil carbon changes. Report your results to us (the Clean Energy Regulator) at least once every five years, and earn carbon credits for measured increases in soil carbon above previous levels.

Using this guide

This document provides a step-by-step guide on how to register, run and report on a soil carbon project. It supports the measured [soil carbon method](#)² — the legislation that details the rules for how to run soil carbon projects. In addition to the method, further details on how to run a project are contained in the [soil carbon method supplement](#)³, the [soil carbon sampling guidance](#)⁴ and the [soil carbon land management strategy guidance](#)⁵.

Project lifecycle

You need to undertake the following actions at each stage of your soil carbon project:

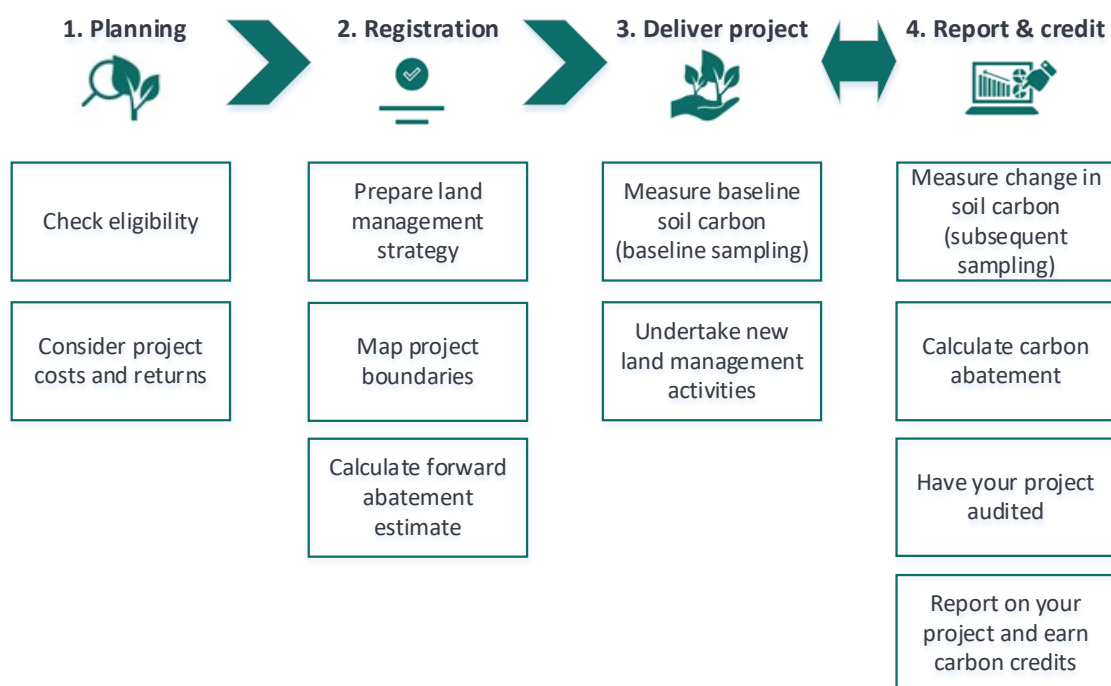


Figure 2: Soil carbon project lifecycle and actions

² Full title: *Carbon Credits (Carbon Farming Initiative—Measurement of Soil Carbon Sequestration in Agricultural Systems) Methodology Determination 2018*; available from <https://www.legislation.gov.au/Details/F2018L00089>

³ <http://www.environment.gov.au/system/files/consultations/072b4825-ec0f-49d9-991e-42dfa1fbae3/files/supplement-soil-carbon-agricultural-systems.docx>

⁴ <http://www.cleanenergyregulator.gov.au/DocumentAssets/Pages/Sampling-guidance-for-measurement-based-soil-carbon-methods.aspx>.

⁵ <http://www.cleanenergyregulator.gov.au/DocumentAssets/Pages/Guidance-for-meeting-the-requirements-of-soil-carbon-land-management-strategies.aspx>

Baseline period

The baseline period covers the 10 years before you apply to register a soil carbon project.

Your baseline soil carbon level estimates the carbon content of your soil before you undertake land management activities to increase it (see **3. Running your project** for how it's measured). You earn carbon credits by increasing your soil carbon above the baseline level.

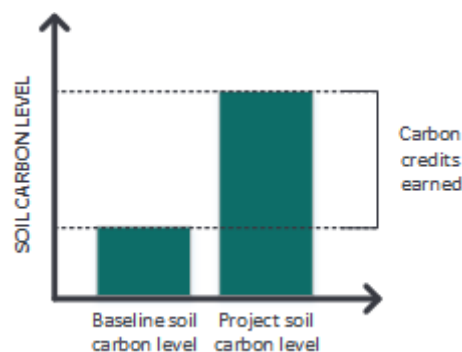


Figure 3: Earning carbon credits

Crediting period

The crediting period is the period during which you can earn carbon credits by reporting on your project. The crediting period for soil carbon projects is 25 years.

Permanence period

When registering a project, you can choose a 25 or 100 year permanence period during which carbon stored by the project must be maintained. Because carbon must be stored for 100 years to be considered to have a 'permanent' benefit to the atmosphere, projects electing a 25 year permanence period receive a 25% reduction in carbon credits issued, while projects with a 100 year permanence period receive a 5% reduction in credits.

You need to conduct and report on at least one land management activity in your project for the duration of the permanence period.

The permanence period starts when your project first receives carbon credits.



Permanence obligations

You may have to return some or all of your earned carbon credits if, before your permanence period ends, you terminate your project, stop land management activities or carbon stores are reversed.

Steps to soil carbon success – an example

Mary-Anne has a 1,200 ha grazing property in Southern Victoria. Mary-Anne wants to change her land management activities to improve the health of her soils and increase her productivity. She learns she can earn carbon credits for making these farm improvements by running a Climate Solutions Fund project.

September 2019

1. Planning your project: Mary-Anne researches the Climate Solutions Fund to understand its benefits and obligations. She decides her land is suitable and begins preparing a land management strategy. She engages her local natural resource management officer to review the document and obtains any required regulatory approvals and eligible interest-holder consents.

January 2020

2. Registering your project: Mary-Anne submits a registration application to the Clean Energy Regulator, choosing a 25 year permanence period.

Mary-Anne also sets up her ANREU account so she is ready to be issued carbon credits.

Early March 2020

Success! The Clean Energy Regulator registers her project.

Mary-Anne contacts an auditor through the Clean Energy Regulator register of auditors to obtain quotes for the audit.

Late March 2020

3. Running your project: Mary-Anne decides to map her project and conduct baseline sampling. These processes are complex, so she engages a carbon service provider to assist with mapping and sample planning, and a soil technician to take soil samples.

The soil technician sends collected samples to a laboratory. Analysis results tell Mary-Anne her baseline soil carbon level.

April 2020

Mary-Anne implements the new land management activities detailed in her land management strategy.

April 2023

4. Reporting and crediting: Mary-Anne is confident farm productivity is improving after a few years of new land management, and is keen to test if her soil carbon has increased. A soil technician takes new samples which are again sent for analysis.

Armed with her sampling results, Mary-Anne works with a consultant to calculate how much her soil carbon has changed. The calculations show an increase – success!

Mary-Anne contacts her auditor to check calculations and assess her project. She receives findings in an audit report.

She reports all collected information to the Clean Energy Regulator in an offsets report, and is issued with carbon credits after the report is assessed.

2023 – 2045 (end of the 25-year crediting period)

Mary-Anne continues with her land management activities, sampling and reporting every three to five years until the project's 25 year crediting period ends. She keeps earning carbon credits for additional carbon stored during this time.

2045 – 2048 (end of the 25-year permanence period)

Mary-Anne continues at least one new land management activity for the remainder of the permanence period.

Note the permanence period is longer than the crediting period because the permanence period starts when the first carbon credits are issued to the project, which in this case is 2023.

1. Planning your project

There are general eligibility requirements that need to be met to participate in the scheme, as well as specific soil carbon land eligibility criteria. Project costs and potential carbon credit returns should also be considered.

General eligibility requirements

Key considerations are highlighted below. For more information on eligibility, visit [our website](#)⁶.

Hold legal right

You need the legal right to run your project and claim carbon credits. It is likely you have the legal right if you own or hold a lease to the project land.

You may need a written agreement if there are multiple owners or leaseholders to show you have the exclusive legal right to run the project and earn carbon credits.

Eligible interest-holder consent

You need consent from all eligible interest-holders — stakeholders who hold an interest in the land. They may include:

- Any mortgagees — typically banks.
- Other people or parties that share or have ownership or leases of the land.
- For leased Crown land – the Crown Lands Minister needs to provide consent, usually through a relevant state or territory lands department.

Eligible interest-holders consent to your project by signing a [Clean Energy Regulator eligible interest-holder consent form](#)⁷.

Regulatory approvals

You need to ensure you have all relevant approvals, licenses or permits that are required to carry out your land management activities. Examples could include obtaining relevant planning or environmental approvals.

⁶ <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Planning-a-project>

⁷ <http://www.cleanenergyregulator.gov.au/ERF/Choosing-a-project-type/Opportunities-for-the-land-sector/eligible-interest-holder-consent>



Deadlines for consent and approvals

All eligible interest-holder consents and regulatory approvals must be supplied to us before you first report on your project (which will be, at latest, five years after your project starts).

Your project will be registered 'conditionally' until all consents and approvals are provided. Conditionally registered projects cannot receive carbon credits. You can remove conditions by providing consents through a project variation application (see **Appendix 3: Project variations** — 'Vary to remove condition').

Activities run under the project need to be new

You need to introduce at least one new or materially different land management activity that is likely to result in an increase in soil carbon levels. Refer to **3. Running your project** for a list of eligible activities. However, if you are already doing one or more of these eligible activities on your land, you do not need to stop doing these. You just need to add a new or materially different activity from the list to what you are already doing.

Your new or materially different activities also need to be likely to increase soil carbon levels.

Details about your activities will need to be included in your land management strategy — see **2. Registering your project**.

Example: new land management activities

Historically, you may have applied gypsum to remediate your soil. You would not be able to start a soil carbon project with gypsum application as your sole activity, since this would not be new or materially different.

However you could introduce a new practice which is likely to improve soil carbon. You check the list of eligible activities and choose to retain stubble after crop harvesting as your new activity. You could start a soil carbon project based on this new activity. This doesn't prevent you from continuing previous land management activities — in this case, you could continue to apply gypsum.

Example: materially different land management activities

Applying nutrients to address soil deficiency is an eligible activity under the method.

Historically, you may have applied super phosphate fertiliser during period when your soils were cold and wet. You would not be able to start a soil carbon project with the same method or type of fertiliser application as your sole activity, since this would not be new or materially different.

After researching and consulting with experts, you discover much of the phosphate applied is being locked up in forms not available to other plants, inhibiting the potential for increasing soil carbon. You decide that changing the type of fertiliser you use may result in increased soil organic matter and therefore stored soil carbon. You could start a soil carbon project by introducing this new type of fertiliser as a materially different land management activity.

Fit and proper person assessment

You need to be recognised as a [fit and proper person](#)⁸ for the purposes of the scheme. The fit and proper test involves declarations about any convictions or insolvency and considers whether a person has the necessary capabilities to run a project.

Eligible project areas

Your land is eligible for a soil carbon project if:

- It was used for pasture, cropping (which may include perennial woody horticulture), or bare fallow during the baseline period.
- It is reasonably expected soil carbon levels can be increased through land management activities.
- It is possible to sample the soil — e.g. you can access the area, the area does not have large obstacles (e.g. rocky outcrops) that would prevent sampling to at least 30 cm depth.

Areas of land are not eligible and will need to be excluded from your project if:

- They are forested, or were forest at any time during the baseline period.
- They were previously a wetland that was drained during the baseline period.
- They have buildings.

The boundaries of the project area (the area in which the soil carbon project is undertaken) may be a portion of your property. You can exclude land which is not eligible (e.g. land with buildings or forest) – see Figure 4.

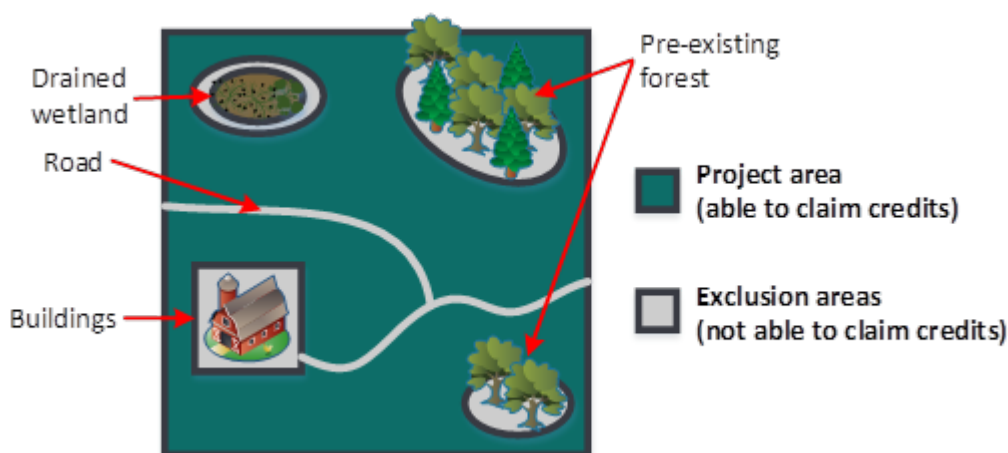


Figure 4: Project area and exclusions

Project returns and costs

Decide on a business model

To run a project you will need to decide on a business model by choosing who the project proponent will be. The project proponent is the person or organisation legally responsible for running an emissions Reduction Fund project.

⁸ <http://www.cleanenergyregulator.gov.au/About/Policies-and-publications/fit-and-proper-person-posture>

You can be the project proponent yourself, or you can engage another person or organisation to be the proponent. Alternatively, you can be the project proponent and engage an agent to act on your behalf.

Choosing who the project proponent will be is an important business decision. For more information see our [Being a Proponent factsheet](#)⁹.

Estimating returns

Carbon credits earned over the 25 year crediting period will vary with the size, activity, soil type, weather, existing soil carbon levels and the geographic location of your project.

We run regular auctions to buy carbon credits from projects. By bidding at an auction you can secure a contract to sell carbon credits to the Australian Government — see our website¹. There are two types of contracts available through an auction:

- Fixed: you are required to sell the nominated number of carbon credits at the bid price over the duration of the contract, and
- Optional: you have the choice to sell up to the nominated number of carbon credits at the bid price over the duration of the contract.

You can also sell carbon credits on the ‘secondary market’ to other parties that hold a contract with us or to private companies looking to offset their emissions.

Table 1 provides example estimates for soil carbon credit generation and carbon credit prices at past auctions. Updated information on carbon credit prices can be found in our [Quarterly Carbon Market Report](#)¹⁰.

Carbon storage estimates are taken from the [model-based soil carbon method](#)¹¹ and are illustrative examples only. Factors affecting soil carbon increases include soil type, climate, management activities and more. You will also need to deduct increases in emissions above levels in the baseline period (for example, from fuel use, fertiliser application, livestock numbers etc.).

Table 1: Carbon credit estimation figures for soil carbon projects

Example carbon storage estimate per hectare per year	0.5-2.0 credits/ha/year	
Last auction average price (September 2020)	Fixed delivery	\$15.53/credit
	Optional delivery	\$15.77/credit
Secondary market average spot price (2019/2020 financial year)	\$16.35/credit	

Estimating costs

There are operating (including monitoring and record-keeping), sampling, reporting and audit costs when running a soil carbon project.

⁹ <http://www.cleanenergyregulator.gov.au/csf/how-it-works/Pages/Being-a-project-proponent-information-for-landholders.aspx>

¹⁰ <http://www.cleanenergyregulator.gov.au/csf/market-information/Pages/quarterly-Market-report.aspx>

¹¹ <http://www.cleanenergyregulator.gov.au/ERF/Pages/Choosing%20a%20project%20type/Opportunities%20for%20the%20land%20sector/Vegetation%20and%20sequestration%20methods/Estimating-sequestration-of-carbon-in-soil-using-default-values-model-based-soil-carbon.aspx>

Operating costs will depend on management activities used, for example:



- Buying/applying fertiliser.
- Installing irrigation.
- Putting up fencing to manage grazing.

You should also factor in time needed for monitoring and record-keeping.



Sampling costs include engaging a soil technician to take soil samples, and laboratory analysis fees. You need to sample at least once every five years. Rough cost estimates:

- Soil technician \approx \$1,500-\$2,000 per day plus travel costs.
- Laboratory analysis \approx \$40-\$100 per sample.



Preparing project reports may have costs, mainly if hiring assistance e.g. carbon service providers.

You will need to report at least once every five years.



You need to engage an auditor to prepare an audit report.

- At least three audits are required over the 25 year crediting period.
- First audit is due with your first project report.

2. Registering your project



You have to register your project with us before you start any project activities. Apply to register your project at our [website](#)¹².

Besides providing information on the eligibility criteria described in **1. Planning your project**, you will need to submit a land management strategy, project area map and a forward abatement estimate as part of your application.

We will assess your registration application within 90 days, unless further information is required.

Land management strategy

You'll need to provide us with a land management strategy. This document helps align your land management activities with long-term farm objectives, and ensures you have realistic expectations for results, obligations and risks. More information about how to prepare a land management strategy can be found in the soil carbon land management strategy guidance⁵.

The strategy needs to:

- Document the planned new land management activity or activities, and confirm that at least one of the activities will be continued until the end of the permanence period.
- Outline the limitations to increasing soil carbon, and the risks to maintaining it. For example:
 - » Acidic soil may limit the likelihood of soil carbon increases.
 - » Future drought may be a risk to soil carbon levels.
- Describe your monitoring and record keeping procedures.
- Be signed by yourself and each affected landholder in the project area.
- Be reviewed by a qualified, independent person (e.g. an agronomist or natural resource management (NRM) officer with no financial interest in the project) who declares:
 - » The planned new land management activities are not excluded or restricted (e.g. applying ineligible fertilisers).
 - » Proposed activities are different and improved from your pre-existing practices, and
 - » Proposed activities are likely to result in an increase in soil carbon levels over time.

Updating your land management strategy

You need to have your land management strategy reviewed by a qualified, independent person:



- at least once every five years during the crediting period
- after the end of the crediting period, at least once every 10 years during the permanence period, or
- whenever you significantly change your land management activities.

¹² <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-1-Apply>

Map project boundaries

You'll need to provide us with a map identifying the boundary of the area you are registering as a project. Create your map using geographic information system (GIS) software. QGIS (free), Google Earth (free) and ArcGIS (paid) are examples of commonly used GIS tools.

See the [Carbon Farming Initiative Mapping Guidelines](#)¹³ for further mapping instructions.

Calculate a forward abatement estimate

You need to provide us with a forward abatement estimate. This is your best estimate of the number of carbon credits likely to be earned during the 25 year crediting period. This information is used to assign an audit schedule to your project that is likely to require three audits.

The estimates in Table 1 may provide a starting point for your [forward abatement estimate](#)¹⁴.

¹³ <https://www.environment.gov.au/climate-change/government/emissions-reduction-fund/publications/cfi-mapping-guidelines>

¹⁴ <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-1-Apply/Forward-abatement-estimates>

3. Running your project



You'll need to measure your baseline soil carbon levels and start delivering carbon abatement by implementing your new land management activity.

Soil sampling

Soil sampling is how you measure your project soil carbon levels.



Each sampling round involves taking random samples of soil from your project area and analysing them. This is usually done with a soil sampling machine that drills into the ground and extracts a soil core. Samples must be taken to a depth of at least 30 cm.

You will need to engage a soil technician to assist with the sampling, and the soil cores must be analysed by an accredited laboratory.



Figure 5: Soil sampling rig

Baseline sampling round

One of the first steps for a soil carbon project is to undertake baseline sampling to measure initial soil carbon levels. This involves mapping your project and creating a sample plan, extracting your soil samples, and sending the samples for laboratory analysis.

Baseline sampling timing



Baseline sampling needs to be done after your project is registered and before you first report to us.

It is suggested that baseline sampling is done before you start your new land management activities, as they could increase your baseline soil carbon which would decrease carbon credit earnings.

Any samples obtained before the project was registered can't be used.

Map your project area and create a sample plan

Mapping

You will have provided your project area boundaries when you registered your project. However, you now need to identify the specific parts of your project area where your land management and soil carbon sampling will take place. These areas are known as carbon estimation areas (CEAs).

You also need to identify areas that you want to exclude from your project, or are ineligible (e.g. land with buildings or forest).

Sampling plan

A sampling plan details where and how you plan to sample. It should include information on your CEAs and mapping, and how randomly allocated sample points were selected. This is very important in confirming samples are an accurate representation of soil carbon.

You will need to provide us with a dated copy of your sampling plan before sampling begins, unless an alternative approach has been agreed with us in advance. More information on sampling can be found in our soil carbon sampling guidance⁴.

The number of samples you should take each sampling round will depend on how variable the soil and management activities are across your project. You will need to take at least nine samples for each CEA. Note your project may have multiple CEAs.



Mapping and sampling guidance

More detailed guidance on mapping and sampling a project can be found in:

- the [Carbon Farming Initiative Mapping Guidelines](#)¹³
- the [soil carbon method supplement](#)¹⁵, and
- the [Clean Energy Regulator soil sampling guidance](#)⁴.

Extracting soil samples

You'll need to engage an independent expert to sample your soil. This person must:

- Have experience in the collection of soil samples.
- Have good understanding of sampling requirements.
- Not have a financial interest in the project (besides being paid to undertake the sampling).
- Not have prepared the land management strategy.

All cores need to be extracted within 60 days of the beginning of the sampling round.

You will need to apply for an extension if you are unable to sample within this timeframe. You'll need to provide an explanation (for example, poor weather conditions or damaged equipment). The time between each sampling round must be at least one year, but no longer than five years.

If you apply non-synthetic fertiliser — for example, guano-based fertiliser — you need to wait at least 24 months before sampling.

¹⁵ <http://www.environment.gov.au/system/files/consultations/072b4825-ec0f-49d9-991e-42dfa1fbae3/files/supplement-soil-carbon-agricultural-systems.docx>

Laboratory soil analysis

There are two methods you can use to analyse the organic carbon content in your soils:

1. Dry combustion analysis – heating a small sample of dry soil at a very high temperature (around 1000 °C) to convert the organic carbon to carbon dioxide and measuring the result. Charcoal and carbonates are removed prior to combustion so that organic carbon content is not overestimated. The method of dry combustion analysis and the laboratory it is undertaken by needs to be certified by the Australasian Soil and Plant Analysis Council (ASPAC) and accredited by the National Association of Testing Authorities (NATA). You can find ASPAC certified laboratories at [Australasian Soil and Plant Analysis Council](#)**Error! Bookmark not defined.** and NATA accredited laboratories at [NATA Find Accredited Facilities](#)**Error! Bookmark not defined.**

Spectroscopic modelling – uses visible and infrared measurements of soil. To train the model some of your soil samples will need to be sent to a laboratory to undergo dry combustion analysis. These soil samples are referred to as the ‘training’ and ‘validation’ set of soil samples.



Other sampling benefits

Your soil analysis can provide information about your soil’s nutrients, deficiencies and acidity, in addition to soil carbon data. This data can be useful for improving your property’s soil management.

Soil carbon land management activities

Once you have registered and completed baseline sampling, you can begin your new land management activities to encourage an increase in soil carbon.

You need to conduct a land management activity in each of your CEAs for the duration of your permanence period.

Eligible activities

The activities below are eligible project land management activities. You need to introduce one or more of the below practices that is new or materially different to what occurred in the project’s baseline period.

- Applying nutrients, lime or gypsum to improve soil health.
- Installing new irrigation with water sourced from privately-funded farm water efficiency savings.
- Re-establishing or rejuvenating a pasture by seeding.
- Establishing and maintaining a pasture where there was previously no pasture (cropland or bare fallow).
- Altering stocking rate, duration or intensity of grazing.
- Retaining stubble after crop is harvested.
- Converting from intensive tilling to reduced or no tilling practices.
- Modifying landscape features to remediate soils.
- Using mechanical means to add or redistribute soil through the soil profile.

Your activities need to align with the land management strategy. You can change your land management activities over the course of your project — you’ll just need to update your land management strategy accordingly.



Figure 6: Re-establishing pasture is an eligible activity

Restricted and prohibited activities

The following activities have restrictions during the permanence period of a soil carbon project:

- Clearing or thinning of native vegetation must be done in accordance with method requirements — see soil carbon method Section 12(2).
- Applying non-synthetic fertiliser — not allowed in the 24 months before a sampling round.
- Mechanically adding or redistributing soil (e.g. moving soil between parts of your project for clay spreading or water ponding) — soils must be taken from project CEAs, the sampling depth in CEAs with removed or added soils must be deeper than depth of any soil disturbances, and any disturbed land must be restored immediately.
- Using biochar — must be done under biochar license or approval. Biochar must be made from appropriate materials.
- Applying new irrigation — new irrigation levels cannot be significantly greater than irrigation used in the baseline period. However, water use can increase if the water is obtained from water efficiency savings from anywhere on your property. Note this does not apply if efficiencies were from government-funded infrastructure improvements.

The following activities are prohibited during the permanence period of a soil carbon project:

- Complete destocking of land under pasture, unless the land is converted to be a cropping system*.
- Applying ineligible non-synthetic fertilisers, coal-containing additives, or pyrolysis material that is not biochar.
- Disturbing soil deeper than the depth of your baseline samples.



Land management activities

More detail on eligible, restricted and prohibited activities can be found in section 7 and Sections 10-13 of the soil carbon method².

* You are able to reduce stocking rates as long as the pasture is grazed, or intended to be grazed, at least once every two years. If you are intending to graze but it becomes unsustainable (due to extreme conditions such as drought), you have the option to not graze the area at that time.

4. Reporting and crediting

Earn carbon credits by measuring the change in soil carbon and reporting your results to us.

Subsequent sampling rounds

After running your land management activities for a few years, you can conduct subsequent soil sampling rounds to measure changes in soil carbon (and any associated carbon credit earnings).

You'll need to do at least one subsequent sampling round each time you report on your project.

The three steps in subsequent sampling are the same as baseline sampling (see **3. Running your project**), except you don't need to re-map your project area:

- Create a sample plan and determine your sample locations.
- Engage a soil technician to extract soil samples.
- Laboratory analysis of the soil to determine soil carbon.

Calculate carbon abatement

Calculate the change in soil carbon levels compared to the baseline (known as the **net abatement amount**) to determine how many carbon credits you will receive after you report. The equations:

- Calculate the trend increase or decrease from baseline soil carbon levels to current soil carbon levels, representing the change in soil carbon from project activities.
- Calculate the difference in average project emissions (fuel use, fertiliser application, livestock numbers etc.) between the project period and baseline period. This quantity captures increases in project emissions since the project started. For example, if more fuel is used for the project compared to the baseline period, project emissions will increase.
 - » During your project, project emissions data comes from monitoring and keeping records of relevant statistics.
 - » Baseline period project emissions come from your farm's records. If historic livestock data is unavailable, you can use an assessment of your land's carrying capacity from the relevant government body to approximate average livestock emissions. For example, in New South Wales, [Local Land Services](#)¹⁶ are responsible for assessing carrying capacity.
- The net abatement amount is the change in soil carbon minus any increase in project emissions.



Soil carbon equations

Equations to calculate the net abatement amount are in Part 4, Schedule 1 and Schedule 2 of the soil carbon method².



Calculation assistance

Carbon abatement calculations can be complex. You may want to consider technical assistance from consultants or specialists (see **Getting started**).

¹⁶ <https://www.lls.nsw.gov.au/>

Auditing your project

Your project needs to be audited to align with our legislative requirements. The number of audits required over the 25 year crediting period will depend on the project size and the forward abatement estimate. Most soil carbon projects will require three audits, including one with the first report.

Each audit report is submitted at the same time you apply for carbon credits. We will provide you with an audit schedule when your project is registered. It will tell you which reports need to include audits. For example: “*Audit 2: First project report submitted after 25/07/2024*”.

Engaging auditors

We recommend you engage an auditor early when developing your project, as this will help you work out audit costs. You can find a list of [registered auditors](#)¹⁷ on our website.

Offsets reports and claiming carbon credits

An offsets report is the document (plus supporting information) that you provide to us each time you report. It details your project’s progress, including the net abatement amount.



Claiming carbon credits

You can claim carbon credits each time you submit your offsets report if you’re reporting an increase in measured soil carbon.

You can submit your offsets report through the [Clean Energy Regulator Client Portal](#)¹⁸ [to be issued carbon credits](#). You’ll need to [set up an Australian National Registry of Emissions Units \(ANREU\) account](#)¹⁹.

We will assess your offsets report within 90 days, unless further information is required. If we assess everything to be in order, we will issue your carbon credits into your ANREU account.

Appendix 1: Offset report requirements details key information that must be provided in an offsets report.

Reporting frequency

You will need to submit an offsets report at the end of each of your project reporting periods. You choose the length for each reporting period, which for soil carbon projects can be between one and five years.

Longer reporting periods allow more time for soil carbon to build up between sampling rounds, or for more sampling rounds to be conducted before reporting. Doing more sampling rounds or collecting more samples in each round can reduce uncertainty in your soil carbon results. This can reduce the size of the discount applied for reporting variable soil carbon amounts. See **Carbon credit discounts** for more information.

- You should provide an offsets report no later than six months after the end date of each reporting period.
- The first reporting period begins when your crediting period starts (you can postpone this by up to 18 months after registration— see **Appendix 3: Project variations** — ‘Vary project start date’). The next reporting period begins right after the previous one ends.

¹⁷ <http://www.cleanenergyregulator.gov.au/Infohub/Audits/register-of-auditors>

¹⁸ <http://www.cleanenergyregulator.gov.au/OSR/CP>

¹⁹ <http://www.cleanenergyregulator.gov.au/OSR/ANREU/Opening-an-ANREU-account>

Carbon credit discounts

Three discounts apply to ensure issued carbon credits don't overestimate stored carbon. These discounts will reduce the number of carbon credits issued compared to your calculated carbon stored.

- Permanence discounts cause a 5% (100-year permanence) or 25% (25-year permanence) reduction in carbon credits issued. This means that for every 100 carbon credits you would earn before the discount, only 95 or 75 carbon credits will be issued.
 - » This is a legislative requirement that reflects the risk of losing stored carbon that cannot be recovered.
 - » This applies to all carbon credits earned during the project.
- The calculated change in soil carbon between your baseline and your first subsequent sampling round is reduced by 50%.
 - » This temporary discount accounts for the uncertainty of only having two sampling rounds (your baseline and first subsequent sample).
 - » This discount does not apply once you have performed three sampling rounds (e.g. you've done your baseline and two subsequent sampling rounds before your first report).
 - » You will earn back the discounted carbon if you continue to record increases in soil carbon above your baseline level.
- There is also a discount for reporting highly variable soil carbon amounts. The more consistent the increase in soil carbon is, the less this discount will apply²⁰.
 - » The size of this discount can be reduced by doing more sampling rounds, taking more soil samples or ensuring your sampled areas are as consistent as possible (e.g. divided into areas with similar soil types).

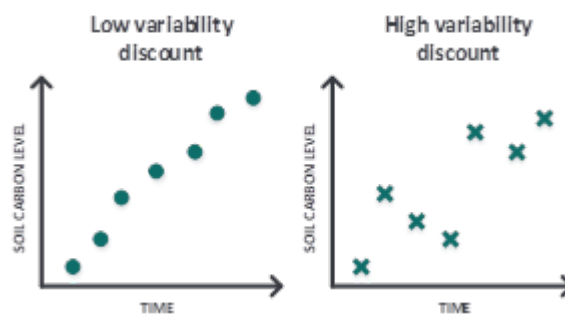


Figure 7: Illustration of soil carbon trends with low and high variability discounts

²⁰ It is difficult to quantify the uncertainty discount, as it depends on the variability of soil across your fields and over time. The discount would be zero for a perfectly consistent trend, or the deduction can be a significant proportion of potential credits if the increase in carbon over time is very uncertain.

Project timeline

You will need to continue land management activities, subsequent sampling rounds and reporting and earning credits for the duration of the 25 year crediting period.

You will need to continue land management activities and reporting until the end of the permanence period (25 or 100 years). You won't need to do sampling after the crediting period ends, but you also won't earn more carbon credits.

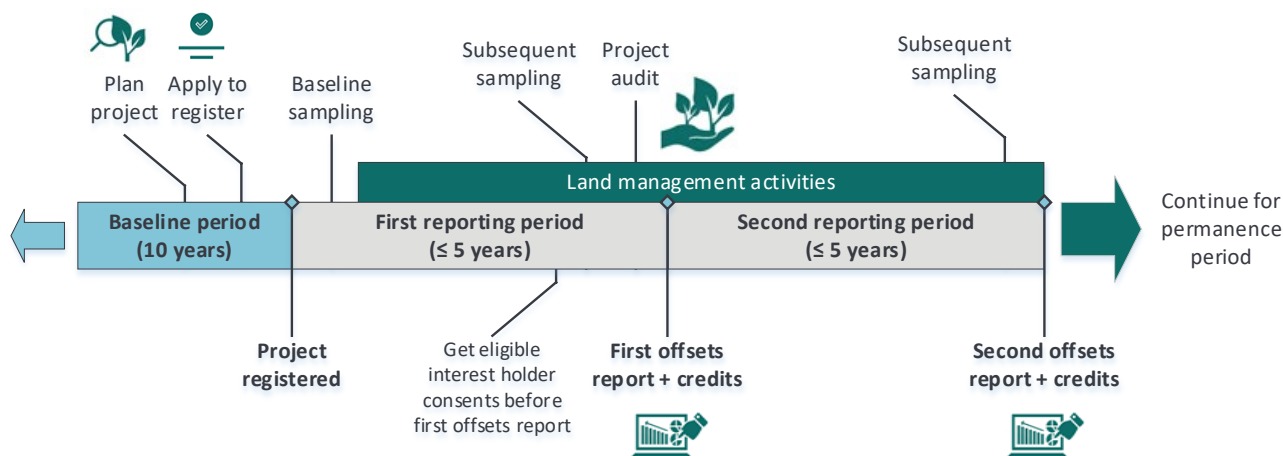


Figure 8: Example soil carbon project timeline (not to scale)

Notification requirements

You will need to notify us if your project changes e.g. if the person running the project changes. **Appendix 2: Notification requirements** lists events that need notification, and how long you have to notify us.

Making changes to your project

You can make changes to your project to adjust for changing circumstances. Perhaps you want to add promising new areas of land, or change the person responsible for running the project.

To make changes (variations) to your project, you will need to complete a Project Variation form, located in the [Clean Energy Regulator Client Portal](#)¹⁸. See **Appendix 3: Project variations** for a summary of allowed changes and information requirements.

Getting started

Ready to start a soil carbon project?

- Learn more about soil carbon at the [Department of the Environment and Energy website](#)²¹.
- Visit our [soil carbon site](#)²² for links to the soil carbon method, the supplement, the soil carbon sampling guidance⁴, the soil carbon land management strategy guidance⁵ and other useful resources, or contact us on 1300 553 542.
- Check for eligible and suitable land, see if there is a new or materially different activity you can do to increase soil carbon and begin planning project registration.

Carbon service providers (also known as project developers, aggregators, consultants or agents) specialise in supporting or running carbon projects, usually for an agreed percentage of earnings. They may be able to help establish, model and report on your project. You can contact a carbon service provider using the Carbon Market Institute's [Australian Carbon Market Directory](#)²³.



²¹ <http://www.environment.gov.au/climate-change/government/emissions-reduction-fund/methods/measurement-of-soil-carbon-sequestration-in-agricultural-systems>

²² <http://www.cleanenergyregulator.gov.au/ERF/Pages/Choosing%20a%20project%20type/Opportunities%20for%20the%20land%20sector/Agricultural%20methods/The-measurement-of-soil-carbon-sequestration-in-agricultural-systems-method.aspx>

²³ <https://marketplace.carbonmarketinstitute.org/market-directory/>

Appendix 1: Offset report requirements

Table 2: Offset report required information

Requirement	Information in offsets report
Land management strategy	<p>Attach a copy of the project’s most recent land management strategy.</p> <p>Land management strategies must be updated and reviewed by an independent person at least once every five years. See 2. Registering your project for information on what to include in your land management strategy.</p>
Reporting period land management activities	<p>Include the following information on land management activities undertaken during the reporting period:</p> <ul style="list-style-type: none"> • Date(s) the eligible land management activities began. • What activities were undertaken. • How closely the land management strategy has been followed. • If any activities were restricted activities, and evidence that the restricted activities were allowed.
Baseline period land management activities	<p>Include a description (activities, timing and duration) of all land management activities undertaken during the baseline period (first offsets report only).</p>
Soil sampling information	<p>Provide information on the sampling processes for each round (baseline sampling and subsequent sampling) that were conducted during the reporting period:</p> <ul style="list-style-type: none"> • Number of sampling rounds you conducted in your reporting period. • Sample plans for each round, including: <ul style="list-style-type: none"> » Mapping files detailing sample locations, including latitude and longitudes. » An explanation as to how sample points were randomly selected. • Sampling field notes and information: <ul style="list-style-type: none"> » Start and end dates and the median (middle) date of the sampling round. » Accuracy of the GPS used to locate sample locations. » Diameter of the inner cutting edge of the sample coring device. » Sample depth. » Latitude and longitude of actual sample locations. » A description of why and how sample locations were changed, if applicable. <ul style="list-style-type: none"> › For example, if the intended sample location was on an unexpected rocky outcrop (which can’t be sampled), the sample location should be moved to an area with soil.

Requirement	Information in offsets report
	<ul style="list-style-type: none"> • A written statement from the person who managed the soil sampling, to verify: <ul style="list-style-type: none"> » Sample collection and preparation was undertaken in accordance with the soil carbon method and supplement. » Sampling was not conducted in a manner, or at a time, that was likely to overestimate any increase in soil carbon. • Laboratory analysis information: <ul style="list-style-type: none"> » Name of the laboratory used for analysing the soil samples. » Carbon content (percentage weight) of each sample analysed. • Calculation results: <ul style="list-style-type: none"> » Creditable change in soil carbon (equation 30 or 43 in Schedule 1 of the method). » Average annual emissions in the baseline emissions period (equation 44 in Schedule 2 of the method). » Average annual emissions in the reporting period (equation 62 in Schedule 2 of the method). » Total change in emissions from all sources in the reporting period compared to the baseline emissions period (equation 77 in Schedule 2 of the method).
Supplement information	Provide information required under 'Part F: Additional Reporting Requirements' of the soil carbon supplement ¹⁵ .

This is not an exhaustive list of offset reporting requirements. Please see the [soil carbon method](#)² and the [supplement](#)¹⁵ for further reporting requirements for soil carbon projects.

Further information on general reporting requirements can be found on our [reporting webpage](#)²⁴.

²⁴ <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-3-Reporting-and-auditing/reporting>

Appendix 2: Notification requirements

Table 3: Notification requirements

Event	Notification triggers	Notification deadline
Sample round	<ul style="list-style-type: none"> You need to notify us of the intended location (latitude and longitude) of each sample being taken in the sample round. 	Before the start of each sampling round.
Project change events	<ul style="list-style-type: none"> You conduct a restricted or prohibited activity within the project area. Your land management strategy changes (you need to provide a copy of the new land management strategy). You change your land management activities after the end of the first reporting period. The notification should include: <ul style="list-style-type: none"> » descriptions of the activity changes, and » how the changes are likely to impact soil carbon increases. 	Within 60 days of you becoming aware of the event.
Disturbance or reversal events	<ul style="list-style-type: none"> A natural disturbance occurs (e.g. a flood or a dust storm). Project soil carbon decrease as a result of another person's actions (that were outside of your control). 	Within 60 days of you becoming aware of the event.
Offsets report events	<ul style="list-style-type: none"> You identify an error in your offsets report relating to project eligibility or the net abatement amount. 	Within 60 days of you becoming aware of the event.
Project participant events	<ul style="list-style-type: none"> The person running the project (the project participant) changes due to death or other circumstances. The project participant is no longer a fit and proper person, due to insolvency or other events. 	Within 90 days of you becoming aware of the event.
NRM plans	<ul style="list-style-type: none"> Your project becomes inconsistent with a regional NRM plan²⁵. 	Within 90 days of you becoming aware of the event.

²⁵ For more information on NRM plans see: <https://nrmregionsaustralia.com.au/what-is-nrm/>

Appendix 3: Project variations

Table 4: Project variation actions and requirements

Variation type	Requirements
Add a project area	<p>To add a new project area, you need to:</p> <ul style="list-style-type: none"> • Identify where the new area is located. • Provide evidence that the new area meets the eligibility requirements outlined in 1. Planning your project. • Revise your project’s forward abatement estimate. • Nominate the start date of activities. <p>You have up to 18 months to conduct baseline sampling after the new project area has been added. When baseline sampling is completed, the added area is treated like other pre-existing project areas. All timing requirements in the soil carbon method and supplement (e.g. sampling timing) must still be met.</p>
Vary or remove a project area	<p>Varying or removing a project area has more conditions, as it may affect soil carbon calculations in other parts of your project. You will need to:</p> <ul style="list-style-type: none"> • Identify what area is being removed. • Revise your project’s forward abatement estimate. <p>You can only remove parts of your project area if one or more of these five criteria apply:</p> <ul style="list-style-type: none"> • The first offsets report has not yet been submitted. • You’re only removing exclusion areas or emissions accounting areas from project areas. • A whole project area is being removed. • You’re removing a whole CEA where either: <ul style="list-style-type: none"> » the most recent change in soil carbon is positive, or » the removal is not to increase carbon credits issued to the project (e.g. to the remaining CEAs). » Note: if the CEA being removed has had soil carbon transferred to other CEAs as a land management activity (e.g. soil mixing between CEAs), all CEAs that received the removed CEA’s soil must also be removed. • You’re removing a whole CEA after the end of the project’s crediting period. <p>Removing project areas that have received carbon credits before the end of the project’s permanence period will require the return of carbon credits and uses a special process. See our website²⁶ for more information.</p>

²⁶ <http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Making-changes-to-your-project#Vary-your-project-area>

Variation type	Requirements
Vary project participant	The project participant is the person who has the legal right and responsibility for carrying out the project and the right to earn credits. You can add, vary or remove a project participant. You will need to provide evidence of legal right.
Vary to remove condition	<p>Your project is considered ‘conditional’ until all consents or approvals are received.</p> <p>You can apply to remove this condition by providing all signed eligible interest-holder consent forms or regulatory approvals through the Project Variation form on the Clean Energy Regulator Client Portal¹⁸.</p> <p>You will need to provide all eligible interest-holder consents and regulatory approvals before your first offsets report.</p>
Vary project start date	<p>You can vary your project’s nominated start date (which is also the start of your crediting period and first reporting period). The varied start date cannot be later than 18 months after the date your project is registered.</p> <p>You can only vary the start date before you submit your first offsets report, and it can only be varied once.</p>

Further information on varying your project can be found on our [making changes to your project webpage](#)²⁶.

Disclaimer

This document provides general guidance on using the soil carbon method. It does not replace or supersede any legal requirements, address all applicable legal requirements or recommend any investment. Figures are indicative and are not necessarily applicable to individual circumstances.

Climate Solutions Fund soil projects involve ongoing legal obligations and returns can vary. You are encouraged to carefully consider if a project is right for you and seek independent professional advice relating to your unique circumstances.