



Kimberley Land Council

SAVANNA BURNING CARBON PROJECTS

An Introduction to 'Emissions Avoidance' and 'Sequestration'

April 2021

The Emissions Reduction Fund (ERF) is an Australian Government scheme that awards carbon credits for activities that reduce greenhouse gas emissions or store carbon dioxide. These credits can then be sold to either the government or other buyers.

To earn carbon credits (called Australian Carbon Credit Units, or ACCUs), prospective project owners need to:

1. work out what type of carbon activity they can carry out on their land (approved activities are set out in documents called 'methods');
2. register their projects; and
3. follow strict rules that are set out in the applicable method.

In the Kimberley, the main carbon activity for earning carbon credits is savanna burning. In 2018, the Government introduced two new savanna burning methods:

- *Carbon Credits (Carbon Farming Initiative—Savanna Fire Management—Emissions Avoidance) Methodology Determination 2018 (2018 Emissions Avoidance method).*
- *Carbon Credits (Carbon Farming Initiative—Savanna Fire Management—Sequestration and Emissions Avoidance) Methodology Determination 2018 (2018 Sequestration method).*

The 2018 Emissions Avoidance method allows project owners to earn carbon credits through savanna fire management, which reduces greenhouse gas emissions; the 2018 Sequestration method also awards credits for increased carbon stored in the landscape as a result of that fire management. Traditional Owners starting a new savanna burning carbon project can choose between the two 2018 ERF methods; already existing projects have the additional option of continuing under their current method (e.g. Emissions Avoidance 2015), or transitioning to either of the 2018 methods. There is no 'sequestration only' method available.

Deciding to register and operate a carbon project, and then making a choice between the different options can be difficult. The advantage of choosing the combined emissions avoidance and sequestration method over the emissions avoidance only method consists of the possibility of earning a greater number of carbon credits (and therefore income) from the same fire management activity. However, sequestration projects place significant additional obligations and risks on the project owner/ land manager, including the obligation to carry out fire management every year for 25 (or 100) years, or having to pay back carbon credits if the project is stopped during that period.

This information sheet summarises some of the key components of the new ERF savanna burning methods.

More information on how the ERF works can be found in the KLC's guide *Carbon Projects: Step by Step Guide for Indigenous Australia*, and on the Clean Energy Regulator website at <http://www.cleanenergyregulator.gov.au/ERF>.

Savanna burning – the activity

One type of activity that can earn carbon credits under the ERF is early dry season burning across Australia’s northern savannas.

Savanna burning projects apply traditional right-way fire practices – introducing fire early in the dry season to reduce large late dry season wildfires. Shifting the seasonality of fires from late season (after 1 August) to early season (1 Jan to 31 July) should also reduce the total area burnt every year and the frequency of fires. All of these outcomes lead to a reduction in the amount of greenhouse gas emissions, and therefore the activity is rewarded with carbon credits.

In addition to generating carbon credits, the objectives of savanna burning projects can include supporting traditional fire management practices to improve biodiversity conservation outcomes, protecting cultural sites, facilitating intergenerational transmission of traditional knowledge, and providing jobs, skills, development and employment opportunities to Traditional Owners. While the activity may be undertaken for multiple reasons, participating in the carbon market allows Traditional Owners to generate an income from fire management which can be re-invested into land management (including fire operations) to complement funding from other sources (e.g. government or philanthropic).



Eligibility requirements

Not everyone who wants to register and operate a carbon project can do so, as there are rules and requirements that need to be met. Some of these requirements are easy to understand, other requirements are quite complex and require careful consideration and/or can involve other parties. Key eligibility requirements for savanna burning projects include:



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- A project needs to be in an area that receives greater than 600mm of rainfall per year on average.
- The person / entity registering the carbon project (project owner / proponent) needs to demonstrate that they have the legal right to carry out the project – this means having the right to carry out the activity of savanna burning for the duration of the project (25 years).
 - o For exclusive possession native title holders on some forms of land (where no one else has overlapping rights) the CFI Act deems the PBC to have the legal right.
- The project owner registering the carbon project needs to obtain consent from all other ‘eligible interest holders’ in the project area, which could mean government departments or lease holders.
- All relevant legal or regulatory approvals, such as a permit to burn the bush, need to be obtained.
- It is also required that the project is *“not required under an existing law, is new and is not likely to be carried out under another Government scheme”*.

What is the difference between ‘emissions avoidance’ and ‘sequestration’?

Under the ERF, methods are divided into two main categories: Emissions Avoidance and Sequestration.

An emissions avoidance activity involves an activity to stop or reduce greenhouse gases going into the atmosphere. The activity is viewed as one-off and its outcome permanent: if it ends, the greenhouse gases do not go back into the air.

A sequestration activity involves something that stores carbon – for example planting trees. For sequestration, the activity is ongoing and the outcome not necessarily permanent – if the trees are cut down, the greenhouse gases go back into the atmosphere, so therefore the activity must continue (under the ERF, for 25-100 years). This is referred to as ‘permanence’.

Most types of carbon projects are either an emissions avoidance project (e.g. reducing fuel consumption in the transport sector) or a sequestration project (e.g. planting trees on cleared land).

However, savanna burning is unusual in that the activity of fire management can earn carbon credits from both emissions avoidance and sequestration. This is because the activity of savanna burning reduces greenhouse gas emissions in two ways:

- 1) By reducing the amount of greenhouse gas emissions from big late dry season fires (called **Emissions Avoidance**); and
- 2) By increasing the amount of carbon stored in the landscape through reduction in fire (called the savanna burning **Sequestration** method).

Project proponents can choose to adopt just the savanna burning emissions avoidance method, or the combined savanna burning emissions avoidance and sequestration method.

There are significant differences between the two methods in how credits are issued, and the ongoing risks and obligations to land managers.

Savanna Burning Emissions Avoidance

Projects that reduce the amount of greenhouse gas emissions (in particular nitrous oxide and methane) are known as **'emissions avoidance'** projects, as the activity is avoiding / reducing emissions (pollution / smoke) from going into the air.

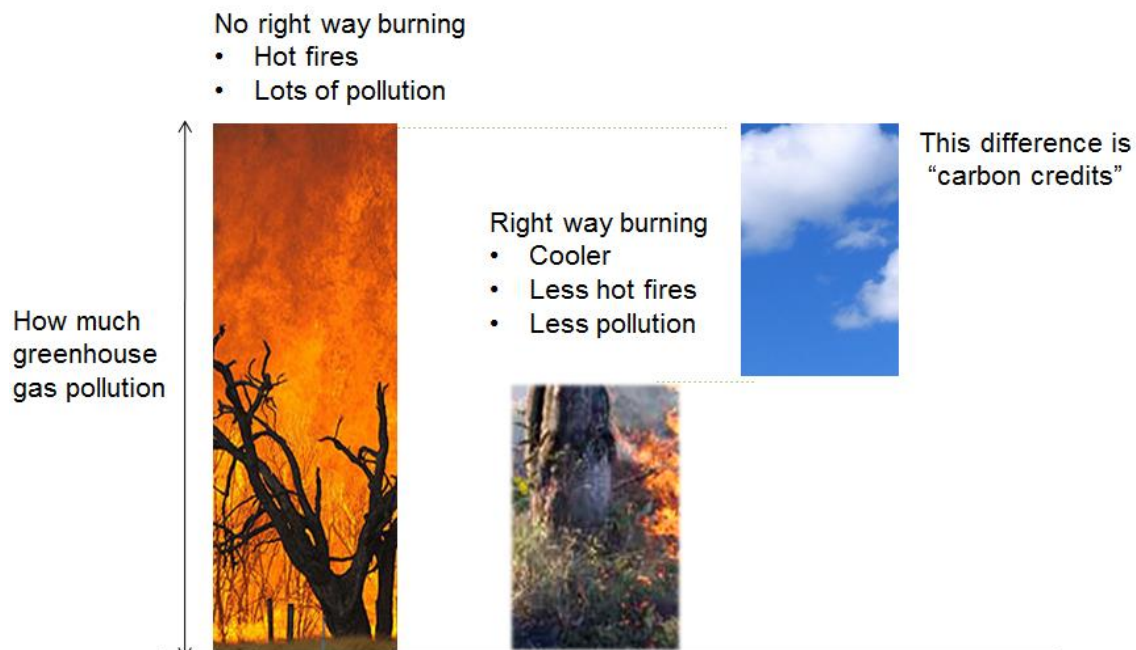
How Emissions Avoidance projects work

When a savanna burning project shifts fire patterns from large late dry season wildfires to those of cooler early dry season fires, there is an overall reduction in the amount of greenhouse gases going into the air.

The savanna burning emissions avoidance method sets out the rules for calculating the number of carbon credits a project owner (for example, a land manager) earns every year by undertaking early dry season fire management.

How Emissions Avoidance credits are calculated

In short, carbon credits from savanna burning emissions avoidance projects are earned annually by comparing the amount of emissions generated by fires in a given project year, compared to the amount of emissions generated every year on average in the 15 years (or 10 years for the high-rainfall zone) before the fire management project started (referred to as the 'baseline' period).



A critical element of a savanna burning emissions avoidance project is that, once a calendar year is finished, the emissions generated by fires in that year can never be un-done or reversed, and the outcome of that year is permanent. This also applies to any reduction in emissions, which is independent of fire patterns in the future. Because of this, emissions avoidance only projects can leave the ERF at any time without penalty and can keep all credits issued up to that date (as long as the project has operated in line with all rules. Note, an uncertainty buffer of around 5% of the baseline is withheld to protect against bad fire years). However, if a project leaves the ERF after credits have been issued, it cannot re-join again later on and no future project can be registered over the same area for the same activity (i.e. savanna burning).



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Changes from the old Emissions Avoidance method

All of the existing savanna burning projects (as of October 2019) in the Kimberley have been registered under an emissions avoidance method, as – prior to 2018/19 – it was the only option available. Since these projects were first registered, the savanna burning emissions avoidance method has been updated (2018 emissions avoidance method).

There are a number of changes in the 2018 emissions avoidance method (vs the old 2015 method) that land managers need to be aware of. These include:

- ‘Nominated weeds’ are now included in the method. Areas with nominated weeds must have the weeds eradicated immediately or the area removed from the project, no matter how the weeds were introduced. The only ‘nominated weed’ at present is Gamba Grass, but this could be updated to include more weed species in the future. Project owners / land managers are required to monitor for weeds.
- Technical guidelines that inform the method can be updated at any time. For example, new weeds could be added, fuel accumulation rates could change, or the dates of the early and late dry seasons could change. Consultation is required in some instances; however, changes could be adopted at any time. Project owners will be bound by any new rules, no matter the impact on their project – positive or negative.
- A project management plan (similar to a fire plan) must be prepared before burning commences every year.
- Note also that proponents cannot increase livestock density in the project area because of the carbon project i.e. as a way to reduce fire and earn more carbon credits (this was included in the previous 2015 method as well).

Savanna Burning Sequestration

Projects that conserve carbon stored in the landscape are known as ‘**sequestration**’ projects.

How Sequestration projects work

When savanna burning projects shift fire patterns from big late season wildfires to those of cooler early dry season fires, there is an increase in the amount of carbon being stored in the landscape in the form of more branches and logs on the ground (referred to as ‘coarse and heavy dead organic matter’) that are not burnt.

How Sequestration credits are calculated

The savanna sequestration method calculates the average amount of coarse and heavy debris present in the baseline period (10 or 15 years depending on rainfall zone) prior to the project starting, which is referred to as the baseline equilibrium of carbon stored. The method then calculates (using the project years’ average fire statistics) the amount of coarse and heavy debris that will be stored in the landscape at the end of the project (25 years’ time), which is referred to as the ‘project equilibrium’ of carbon stored. The project owner / land manager receives carbon credits for the difference in carbon stored between the baseline and project equilibrium.

For example, if a group started a sequestration project in 2020 with a baseline equilibrium of 10,000 tonnes, carried out good fire management for 25 years, and the final project equilibrium in 2044 is 12,000 tonnes, the group receives a total of 2,000 carbon credits (1 ACCU per tonne). Obviously, waiting 25 years to receive any carbon credits is not ideal, so – rather than wait until the very end of the project – carbon credits are issued every year throughout the project, based on



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forecasts of what the final project equilibrium is likely to be at the end of the 25 years. The project would get roughly 1/25th of 2,000 tonnes a year, so approximately 80 credits per year in this example.

Government estimates suggest that a combined 2018 emissions avoidance and sequestration project should earn at least twice as many carbon credits as a 2018 emissions avoidance only project, although this figure could differ significantly between different groups.

Permanence obligation

A critical element of a sequestration project is that carbon stored *can* be undone or reversed by successive bad fire years in the future; the stored carbon is not necessarily permanent. If early season burning was stopped altogether, a bad fire in say 2030 could negatively impact on the carbon that had been stored earlier. It is for this reason that there are increased obligations and rules, and associated risks, related to sequestration projects that do not apply to emissions avoidance projects. For example, projects need to register with a permanence period of either 25 or 100 years, and project owners need to continue fire management activities over that period to ensure carbon remains stored in the landscape. This is known as the “permanence obligation”. Unlike for emissions avoidance projects, if a project that includes sequestration decided to withdraw from the ERF prior to the end of the permanence period, all credits issued over the life of the project would need to be returned. The Government withholds 5% of sequestration credits as a ‘risk of reversal buffer’ (similar to the uncertainty buffer for Emissions Avoidance); if a project opts for a 25-year permanence period, an additional 20% of sequestration credits is withheld as ‘permanence period discount’.

Other considerations

In addition to the above, there are some further considerations regarding the sequestration method:

- If an emissions avoidance and sequestration project decided or had to withdraw from the ERF prior to its permanence period ending (25 or 100 years), then the project would need to return all credits issued up to that point to the government. This currently applies to all sequestration *and* emissions avoidance credits issued to that project (although this may be amended in future). If the credits have been sold, that means the project owner would have to buy the same number of credits from someone else and hand them to the government.
- As the registration of a sequestration project is considered to be a Future Act, the consent of native title holders should be gained through an Indigenous Land Use Agreement (ILUA) for each affected native title determination area prior registration of a sequestration project or transition of an existing project to sequestration.
- The number of credits awarded over the project period depends on the equilibrium at the end of the project. However, credits are awarded every year. Therefore, total sequestration and credits for the whole project period need to be estimated every year. They are then awarded every year based on 1/25th of that total sequestration estimate for the end of the project. The forecasts could go up or down over the life of the project with changing fire management statistics. If the forecast / final equilibrium is lower than previous forecasts, project owners need to be prepared for a significant reduction in credits in a given year (as credits have effectively already been paid in advance). An equilibrium reduction of 10% from a previous forecast could lead to a much greater reduction in credits for the current year. As a result, credits awarded can fluctuate significantly, especially in the early years of a project.
- Existing projects will receive a new 25-year crediting period if transitioning from an existing emissions avoidance method within five years from 2018 (i.e. they can earn carbon credits for



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another 25 years). If projects transition outside of this five-year window, the existing crediting period will continue.

- Project areas can now be subdivided and removed, so if a project owner wants to remove an area (e.g. to allow mining or agriculture), that is now permissible. However, credits earned for the area that is being removed would need to be returned.
- As for Emissions Avoidance, 'nominated weeds' are now included in the method. Areas with nominated weeds must have the weeds eradicated immediately or the area removed from the project, no matter how the weeds were introduced, and all credits issued for the removed areas must be handed back. The only 'nominated weed' at present is Gamba Grass, but this could be updated to include more weed species in the future. Project owners / land managers are required to monitor for weeds.
- As for Emissions Avoidance, technical guidelines that inform the method can be updated at any time. For example, new weeds could be added, fuel accumulation rates could change, or the dates of the early and late dry seasons could change. Consultation is required in some instances; however, changes could be adopted at any time. Project owners will be bound by any new rules, no matter the impact on their project – positive or negative.
- If there is a significant reversal in carbon stored (drop >5%) and no remedying action is taken, the Regulator has a number of options, including requiring carbon credits to be returned, or issuing a financial penalty.

How much money will I make?

The amount of money a carbon project will make depends on how many credits are generated; how much money these credits are sold for; and how much it costs to run the project.

How many credits can be generated?

There are numerous approaches to estimating the number of credits a project is likely to earn, with different people favouring different approaches. One simple approach is to look at the baseline average annual emissions, and then divide that by 4 (factor of 25%). This approach has proven to be relatively accurate in forecasting the number of carbon credits that can be earned on average each year from emissions avoidance projects with good fire management practices, especially if the baseline fire regime is dominated by late dry season wildfires. Doubling this figure should provide a rough estimate of the total number of credits possible under a combined sequestration and emissions avoidance project (a conservative figure based on advice from government), although tripling the emissions abatement figure appears to be more accurate for some of the Kimberley region based on KLC analyses. The government also provides the Hypothetical Abatement Forecast (HAF) tool on the Savanna Burning Abatement Tool (SavBAT) website to help estimate carbon credits, with this tool relying on statistics about the average area burnt to be input by the user.

Whatever the approach used, they are still only best estimates, and ultimately the number of carbon credits a project earns will vary each year, with the average dependent on a range of factors including:

- Vegetation type(s);
- Size of the land/project area;
- Baseline (i.e. what the fire regime was like before the project started);
- Fire management (i.e. how well fire is managed during the project – the best projects change seasonality from late to early dry season, and reduce overall area burnt and fire frequency);



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- Method (emissions avoidance only, or combined emissions avoidance and sequestration); and
- Average rainfall zone (>1,000mm, or 600-1,000mm)

How much money are credits sold for?

What credits are worth depends on how much money they can be sold for. The project owner can choose to sell into the ERF auction or to the secondary and/or voluntary market. As with all markets, prices can vary significantly over time.

Only someone with an Australian Financial Services Licence should give advice about pricing ACCUs.

How much will it cost to run the project?

The cost for projects will vary, but project owners need to think about annual fire management operations, carbon project administration, meetings, start-up costs (e.g. vegetation mapping) and other organisational costs such as insurance, financial management and audits.

Taking into consideration all of the above, some groups may be able to make a profit from undertaking a savanna burning carbon project, some may be able to just cover all costs and break even, and some groups may not be able to generate enough carbon income to cover all fire management and carbon administration costs.

Deciding to proceed with a project or not may also depend on other motivations for a group to carry out fire management, and whether or not other sources of funding are available that could contribute to overall fire operations and other project costs.

Is a savanna burning carbon project a good idea?

Whilst a carbon project may deliver income, the benefits of that income need to be balanced against the additional costs, risks and liabilities that may be associated with a carbon project. The ongoing obligations, permanence-related credit reduction, and other risks should be taken into account when assessing the feasibility of a proposed emissions avoidance and sequestration project. Native title prescribed body corporates (PBCs) are responsible for holding land on trust for native title holders, which means that taking on the level of risk associated with sequestration projects may not be ideal. Possible ways to mitigate some of those risks need to be considered when considering a sequestration project.

Additional considerations

Pindan (Acacia Shrubland):

A key eligibility requirement for savanna fire projects is that the project includes (an) eligible vegetation type(s).

One type of vegetation which exists in the Southwest Kimberley – Pindan (Acacia Shrubland) – is not currently included in the savanna burning method. The KLC is working with scientists and government to have this vegetation type added, but this may still be some time away.

There may be some, or a lot of, Pindan (Acacia Shrubland) in a proposed project area. The amount of Pindan (Acacia Shrubland) in a project area should be taken into account in deciding whether to register a project now, or wait to see if the method is updated to include this vegetation type.

For more information on Pindan (Acacia Shrubland), please refer to the KLC's *Information Sheet: Pindan 101*.



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CFI Act Amendments

The Department of the Environment and Energy has previously outlined a number of amendments which it would like to make to the CFI Act which would improve the operation of the sequestration method. This includes changes such as:

- separating emissions avoidance and sequestration credits, so if a project had to hand back carbon credits, only the sequestration credits would need to be handed back;
- improving rules for projects wanting to transition from the 2015 Emissions Avoidance method to the Sequestration method so that the Crediting Period and Permanence Period align.

The status of these proposed amendments is unclear, and it is uncertain whether / which of them will be pursued by government.

Additional carbon pools

The current sequestration method only assesses coarse and heavy dead matter on the ground. Additional carbon pools (such as standing dead trees or living biomass) may be included in future revisions, but this is not guaranteed.

Non-indigenous carbon project proponents

The Clean Energy Regulator has provided a guidance document on its website that outlines its expectations regarding requirements relating to native title, legal rights, eligible interest holder consent and regulatory approvals for non-Indigenous project proponents registering carbon projects on Indigenous land. Under the ERF, native title rights must be respected. An Indigenous Land Use Agreement (ILUA) may be required to ensure that native title requirements are satisfied. Please contact the KLC for more information regarding carbon projects and native title.

Next steps

There is a large amount of work required to register a carbon project. The KLC recommends that interested groups take it one stage at a time. If there is general interest in a possible project, the KLC can provide a technical feasibility summary that outlines: 1) If the proposed project area would meet eligibility requirements, 2) If the proposed project would likely generate carbon credits, and 3) other significant issues that require careful consideration.

Please contact the Carbon Manager at the KLC for more information, questions, or further support regarding this information sheet – (08) 9194 0100.