



final report

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Emissions Reduction Fund project aggregation by Farm Consultants

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1. Introduction

This short report outlines the opportunities available to Farm Consultants (Consultants) specialised in sheep production to participate in the Emissions Reduction Fund (ERF) as aggregators working with their client producers.

2. About the Emissions Reduction Fund

The ERF is a carbon offsets scheme that provides economic rewards to producers who take steps to reduce greenhouse gas emissions. Under the ERF, landholders are able to earn carbon credits from a variety of activities, including:

- reducing livestock emissions
- enhancing carbon in agricultural soils
- managing savannah wildfires
- sequestering carbon through revegetation and reforestation.

Actions that reduce greenhouse gas emissions are referred to as 'abatement activities'. They reduce emissions in one of two ways: by storing carbon in soil or plants (sequestration projects) or reducing emissions of carbon and other harmful greenhouse gases (emissions avoidance projects). Each tonne of carbon dioxide equivalent (CO₂e) emissions that is reduced or stored by an ERF project will be rewarded with one Australian carbon credit unit (ACCU).

Through the ERF, the Government has budgeted \$2.55 billion to purchase ACCUs at the lowest price from across the economy using a reverse auction format. Consultants wishing to act as an aggregator may bid at ERF auctions and, if successful, obtain a contract to supply ACCUs to the Government at their bid price.

3. Requirements for participation

Participation in the ERF is complex and involves establishing the eligibility of emission reduction opportunities, registering projects, ongoing data collection, periodic audits and finally the issuance of ACCUs. The figure and table below provides a summary of the stepwise process for Consultants to follow should they wish to develop ERF projects and participate in auctions.

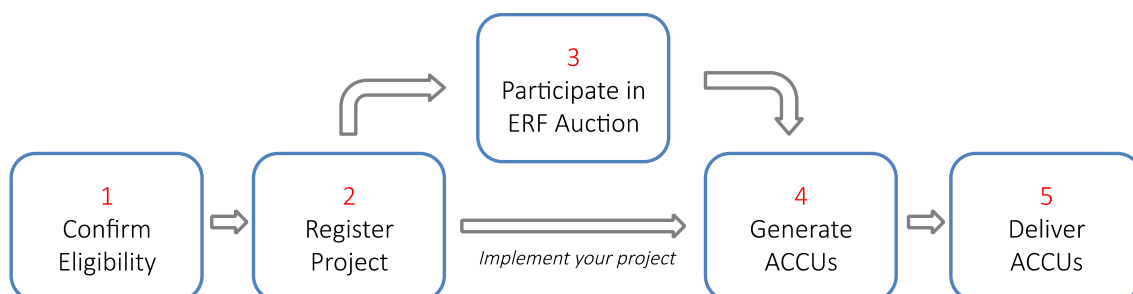


Figure 1 – Process for ERF participation

Table 1 – 1 ERF Participation Checklist

STEP	CHECKLIST
STEP 1	
Confirm Eligibility	<ul style="list-style-type: none"> ✓ Confirm that your proposed activity meets the applicability requirements of an approved method ✓ Confirm the project is a new initiative and not required by law or another Government program ✓ Develop a financial model for your project including sensitivity analysis of ACCU price and volume ✓ Assess the benefits and costs of project aggregation ✓ Confirm you have all the required permits and hold the legal right to undertake the project
STEP 2	
Register Project	<ul style="list-style-type: none"> ✓ Apply to become a scheme participant and register your project with the Clean Energy Regulator ✓ Calculate a Forward Abatement Estimate to receive an audit schedule ✓ Open an account with the Australian National Registry of Emission Units (ANREU) ✓ Approved projects are published in the Emission Reduction Fund Register
STEP 3	
Participate in an ERF auction	<ul style="list-style-type: none"> ✓ Understand carbon abatement contract requirements including commercial terms ✓ Register and bid in an ERF auctions ✓ Sign the contract with the Australian Government
STEP 4	
Generate ACCUs	<ul style="list-style-type: none"> ✓ After registration with the CER you can implement your project according to the chosen method ✓ Monitoring and record keeping established as per the chosen method ✓ Calculate abatement from your project for a reporting period as per the chosen method ✓ Submit audit reports according to your audit schedule

STEP	CHECKLIST
STEP 5 Deliver of ACCUs	<ul style="list-style-type: none"> ✓ Apply for an Abatement Statement to claim ACCUs ✓ Deliver the ACCUs to the Clean Energy Regulator as per contract ✓ Clean Energy Regulator transfers payment equal to the contracted price to your nominated bank account

For further detail on each of the steps outlined above, as well as access to forms and paperwork required for participation, visit the website of the Clean Energy Regulator: <http://www.cleanenergyregulator.gov.au/ERF/Pages/default.aspx>

4. Improved flock management method

In order to participate in the ERF projects must utilize an approved 'method'. Each method outlines an approach to quantify and verify a reduction in greenhouse gas emissions, as well as setting out the eligibility criteria for applying the method.

There is currently no approved method for dealing with emissions from sheep production. As such, this analysis focuses on a proposed ERF method '*Reducing greenhouse gas emissions through improved flock management*'. The Department of the Environment is responsible for the development of new ERF methods, and as such the analysis in this report are subject to change based on the final format and structure of any method that the Department may chose to develop in the future.

The *improved flock management* method reduces greenhouse gas emissions by improving flock production efficiency. This is achieved by altering the major flock productivity factors such as: reproductive rate, survival of lambs and other stock classes, age at first mating for ewes, growth rate, and use of terminal sires. The proposed method is not restricted to one particular way to achieve this improvement, and many different changes can be combined to improve productivity. In general, improvements to reproduction, lamb and weaner survival and growth rates are the major determinants of emissions intensity, and amongst sheep producers these factors are relatively well understood.

5. Emissions reduction scenarios – WA sheep producers

In order to estimate the emission reduction potential of applying the proposed methodology we have created case study properties that are illustrative of sheep producers in Western Australia (WA) drawing on data provided by local consultants. Using this data we present hypothetical baseline and project scenarios in order to estimate the abatement potential at farm level. Finally, we have scaled up this farm level analysis to estimate the emission reduction potential for farm consultants acting as aggregators if 30 sheep producers were to participate in a flock management ERF project and deliver the productivity improvements set out in the project scenarios.

Project Scenarios

The first abatement scenario was modeled using data from a high performing WA sheep producer in the Darkan region managing a flock of 10,965 DSE with a weaning percentage of 101% and ewe mortality of 5.3% in the pre-project period. In the project scenario weaning rates were increased to 105% and ewe mortality reduced to 5% resulting in increased stock numbers to 11,500 DSE. The second scenario was based on a producer with greater opportunity for improvement who was managing a 10,000 DSE flock with a weaning percentage of 85% and ewe mortality of 6%. Through the introduction of various new management practices weaning rate was improved to 100% and ewe mortality reduced to 5.5% with no change in total DSE. The final scenario was based on a producer running a larger flock of 15,500 DSE with good weaning rates (103%) but higher ewe (9%) and weaner (8%) mortality rates. We reduced both adult and weaner mortality by 4%, as a result of the reduced adult ewe mortality the weaning percentage also increased to 106%.

To achieve these production improvements we assumed that a range of improved management practices were implemented including:

- Improved monitoring of the ewe condition score during pregnancy
- Pregnancy scanning and Flock segregation
- Strategic supplementation
- Weaner nutrition
- Improved monitoring of older stock

6. Abatement potential

For each of the three scenarios abatement potential was determined by modelling the baseline flock performance to calculate the emissions intensity (kgCO₂e/kg LW) in the pre-project period. This was compared with the emissions in the project period under each of the scenarios to estimate potential abatement.

Reductions in emissions intensity were achieved under each scenario, with potential abatement per DSE ranging from 5 to 15kg CO₂e, with average abatement being 12kg CO₂-e/DSE. Based on an average of 12,500 DSE across each of the three project scenarios, the potential abatement per farm is estimated at 150 tCO₂e / year.

7. Aggregation opportunities for Farm Consultants

Aggregation under the ERF refers to the process by which projects or abatement activities are brought together in order to create economies of scale, overcome high transaction costs and manage performance risk. With individual producers only able to generate approximately 150 ACCUs per year, there is an opportunity for Consultants to participate in the ERF as aggregators.

Under this approach, individual producers would work with their Consultant to undertake emission reduction initiatives by applying the improved flock management method on their grazing properties. These individually small initiatives, in geographically dispersed locations would be aggregated by Consultants to form an ERF project. Each of the scenarios examined also produced larger numbers of animals for sale, increasing output and profitability. While the production levels modelled in the scenarios should be possible within the region, they require improved

management skills and therefore uptake of the scenarios may be limited due to the skills of the producers.

In this context, Consultants might consider designing their ERF aggregation program to provide additional on-farm services (coaching, analysis, access to benchmarking data etc) to producers that reach productivity benchmarks. The close link between productivity improvements and methane reductions is quantified through the proposed improved flock management ERF method. Consultants could create a platform designed to reward producers with further skill development opportunities, with such premium services funded through the creation of ACCUs in respect of on-farm methane reductions. The aggregation platform has the potential to create a virtuous cycle for producers by providing access to important capacity building opportunities enabling improved on farm productivity, which in turn reduces methane emissions. For Consultants there is the opportunity to deepen client relationships and potentially recruit new producers through the provision of additional specialist services underpinned (and funded) through the generation of ACCUs.

8. Value proposition

In order to provide Consultants with an overall sense of the revenue potential of ERF project aggregation the emission reduction potential of the individual farm scenarios were scaled up across 30 producers in WA. In addition to assessing the ACCU generation and revenue potential, we have included estimates of the direct carbon related costs including up front project registration costs and ongoing monitoring, reporting, and audit fees. Consultants should also be aware of further program coordination and management costs, as well as the cost of additional services provided to producers that meet production benchmarks and KPIs.

Table 2. ERF Aggregation platform emissions reduction and financial performance

ERF Project Aggregation Summary			
Method	Producers	Projects	ACCUs
Flock Management	30	1	31,500
ERF Aggregation Financial Summary			
Total Revenue			\$ 439,425.00
Total Carbon Expenses			\$ 147,375.00
TOTAL Income			\$ 292,050.00

Note: Amounts presented in Table 2 are accrued over a seven year crediting period.

Assumptions

The following assumptions were used to develop the results listed in Table 2:

Participants	Farms	30
Flock size	DSE / farm	12,500
ACCU/DSE	tCO ₂ e	0.012
ACCU Price	\$ / tCO ₂ e	\$13.95

9. Conclusion

The results presented in this report suggest there may be opportunities for sheep Consultants to act as aggregators under the ERF; using the proposed improved flock management method to quantify methane reductions achieved via on-farm productivity improvements. Through such a program, Consultants could recruit sheep producers and help them to improve their productivity by providing premium services in exchange for committing to meet prescribed performance benchmarks. These benchmarks would be based on well understood BMPs for indicators such as reproductive performance and weaner survival. Data collected through the program would enable the generation of ACCUs with ERF revenues funding the implementation of the program and offsetting the cost of premium services delivered to participating sheep producers.