

EXPLANATORY STATEMENT

Carbon Credits (Carbon Farming Initiative) Act 2011

Carbon Credits (Carbon Farming Initiative-Beef Cattle Herd Management) Methodology Determination 2014

EXPOSURE DRAFT

Background: Emissions Reduction Fund

The *Carbon Credits (Carbon Farming Initiative) Act 2011* (the **Act**) enables the crediting of greenhouse gas abatement from emissions reduction activities across the economy. Greenhouse gas abatement is achieved either by reducing or avoiding emissions or by removing carbon dioxide from the atmosphere and sequestering carbon in soil or trees.

In 2014, the Australian Parliament passed the *Carbon Farming Initiative Amendment Act 2014*, which establishes the Emissions Reduction Fund (ERF). The ERF has three elements: crediting emissions reductions, purchasing emissions reductions, and safeguarding emissions reductions.

Emissions reduction activities are undertaken as offsets projects. The process involved in establishing an offsets project is set out in Part 3 of the Act. An offsets project must be covered by, and undertaken in accordance with, a methodology determination.

Subsection 106(1) of the Act empowers the Minister to make, by legislative instrument, a methodology determination. The purpose of a methodology determination is to establish procedures for estimating abatement (emissions reduction and sequestration) from eligible projects and rules for monitoring, record keeping and reporting. These methodologies will ensure that emissions reductions are genuine—that they are both real and additional to business as usual.

In deciding to make a methodology determination the Minister must have regard to the advice of the Emissions Reduction Assurance Committee (ERAC), an independent expert panel established to advise the Minister on proposals for methodology determinations. The Minister must not make or vary a methodology if the ERAC considers it inconsistent with the offsets integrity standards, which are set out in section 133 of the Act. The Minister will also consider any adverse environmental, economic or social impacts likely to arise as a result of projects to which the determination applies.

Offsets projects that are undertaken in accordance with the methodology determination and approved by the Clean Energy Regulator (the Regulator) can generate Australian Carbon Credit Units (ACCUs), representing emissions reductions from the project.

Project proponents can receive funding from the ERF by submitting their projects into a competitive auction run by the Regulator. The Government will enter into contracts with successful proponents, which will guarantee the price and payment for the future delivery of emissions reductions.

Further information on the ERF is available on the Department of the Environment website at: www.environment.gov.au/emissions-reduction-fund.

¹ All references to ‘the Act’ in this document refer to the *Carbon Credits (Carbon Farming Initiative) Act 2011*, as if amended by the *Carbon Farming Initiative Amendment Bill 2014* (as introduced into the Senate on 26 June 2014).

Background: Beef cattle

The livestock sector represents around 70 per cent of emissions from agriculture and up to 11 per cent of all greenhouse gas emissions in Australia. Beef cattle production is a major livestock industry and contributes a significant proportion of all livestock emissions.

The Exposure Draft Carbon Credits (Carbon Farming Initiative-Beef Cattle Herd Management 2014) Methodology Determination (the draft Determination) provides for crediting of reductions in emissions from beef cattle. Reductions in enteric methane (methane produced during digestion) and nitrous oxide emissions from dung and urine may be achieved through a range of actions – termed project activities - that improve the diet or management of the beef cattle herd. These project activities can achieve any of the following:

- reduced average number of days from birth to slaughter in the herd;
- reduced average age of the herd;
- reduced number of animals in the herd.

These improvements reduce the emissions intensity of beef production, i.e. they reduce emissions per kilogram of liveweight produced. The level of beef production may be either maintained or increased. ACCUs are generated when emissions from the herd as a result of the project activities are lower than they would have been without those project activities being undertaken.

A range of project activities can be undertaken to achieve these outcomes. The draft Determination does not specify particular project activities. Applicable project activities may include feeding cattle dietary supplements or improved pasture to allow them to reach market weight earlier, and improved breeding techniques to lift calving percentages and minimise the number of unproductive cattle.

The draft Determination is focused on beef cattle that feed predominantly on pasture in Australia. This activity is conducted across southern and northern regions with distinctly different characteristics, which influence the options available under this draft Determination.

The northern industry operates in rangeland areas where feed quality is highly variable and properties are often large, making it difficult to manage cattle on a daily basis. The draft Determination provides opportunities for northern producers to introduce improved feeding regimes and implement project activities such as increased fencing and watering point installation to increase the efficiency of overall production. In the southern industry the options are different with higher quality feed sources often already available to pasture-fed beef cattle. However, project activities potentially available in the south include improving herd genetics, more intensive herd management, or changes to breed types which can assist in decreasing the average age of the herd.

Application of the draft Determination

The draft Determination sets out the detailed rules for implementing and monitoring offset projects that reduce emissions by improving herd efficiency and meet the eligibility requirements in Part 2. These rules have been designed to reflect the requirements of the proposed offsets integrity standards and ensure that emissions reductions are real and additional to business as usual.

A project proponent wishing to implement the draft Determination must make an application to the Regulator under section 22 of the Act and meet the general eligibility requirements for an offsets project set out in subsection 27(4), which include compliance with the rules set out in the draft Determination, and the additionality requirements in subsection 27(4A) of the Act. The additionality requirements are:

- the newness requirement;
- the regulatory additionality requirement; and
- the government program requirement.

Subsection 27(4A) provides that a methodology determination that covers the project may specify requirements in lieu of any of the above requirements. However, the draft Determination does not specify any requirements in lieu, and so all three requirements apply to projects under the draft Determination.

The draft Determination has some similarities to the Alberta Environment Offset Quantification Protocol, *Quantification Protocol for Reducing the Age at Harvest of Beef Cattle*.

Public Consultation

The draft Determination has been developed by the Department of the Environment in collaboration with the livestock industry through Meat and Livestock Australia and Australian Agricultural Company Limited.

The exposure draft of the Determination has been published on the Department's website for public consultation from XX December 2014 to XX January 2015. Details for how to make a submission are provided on the Department of the Environment website, www.environment.gov.au.

Draft Determination Details

The draft Determination is a legislative instrument within the meaning of the *Legislative Instruments Act 2003*.

The draft Determination begins when it is made.

The draft Determination ends when it is either revoked under section 123 of the Act, or on the day before it would otherwise be repealed under the *Legislative Instruments Act 2003*, whichever happens first. Under subsection 50(1) of that Act, a legislative instrument such as the draft Determination is repealed on the first 1 April or 1 October falling on or after the tenth anniversary of registration of the instrument on the Federal Register of Legislative Instruments. For example, if the draft Determination is registered before 1 April 2015, it would expire on 31 March 2025.

Details of the draft Determination are at [Attachment A](#).

Note on this explanatory statement

Numbered sections in this explanatory statement align with the relevant sections of the draft Determination.

Definitions for terms which are highlighted in ***bold italics*** can be found in the draft Determination.

Details of the Methodology Determination

Part 1 Preliminary

1 Name of Determination

Section 1 sets out the full name of the draft Determination, which is the *Carbon Credits (Carbon Farming Initiative-Beef Cattle Herd Management) Methodology Determination 2014*.

2 Commencement

Section 2 provides that the draft Determination commences when it is made.

3 Authority

Section 3 provides that the draft Determination is made under subsection 106(1) of the Act.

4 Duration

Paragraph 4(a) provides that the draft Determination begins when it is made.

Under subparagraph 122(1)(b)(i) of the Act, a methodology determination remains in force for the period specified in the determination.

Paragraph 4(b) provides that the draft Determination ends on the day before it would otherwise be repealed under subsection 50(1) of the *Legislative Instruments Act 2003*.

Instruments are repealed under that provision on the first 1 April or 1 October following the tenth anniversary of registration on the Federal Register of Legislative Instruments. Paragraph 4(b) ensures that the draft Determination will expire in accordance with subparagraph 122(1)(b)(i) of the Act.

If the draft Determination expires or is revoked during a crediting period for a project to which the draft Determination applies, the draft Determination will continue to apply to the project during the remainder of the crediting period under subsections 125(2) and 127(2) of the Act. Project proponents may apply to the Regulator during a reporting period to have a different methodology determination apply to their projects from the start of that reporting period (see subsection 128(1) of the Act).

Under section 27A of the Act the Emissions Reduction Assurance Committee may also suspend the processing of applications under a determination if there is reasonable evidence that the methodology determination does not comply with one or more of the offsets integrity standards. This does not impact applications for declaration already received by the Regulator before such a suspension or declared eligible offset projects which apply the Determination.

5 Definitions

Section 5 defines a number of terms used in the draft Determination.

The note at the end of section 5 lists terms that are not defined in the draft Determination but instead have the meaning given to them by section 5 of the Act.

Generally, where terms are not defined in the draft Determination, they have the meaning given by section 5 of the Act.

Under section 23 of the *Acts Interpretation Act 1901*, words in the Determination in the singular number include the plural and words in the plural number include the singular.

6 Meaning of emissions intensity reference period

The ***emissions intensity reference period*** is the historical period for which ***baseline emissions*** are calculated, to provide points of comparison for calculating emissions avoided as a result of a project.

The emissions intensity reference period is the period of up to seven years before the first day of the crediting period. The emissions intensity reference period can only be determined where annual records relating to parameters for number and liveweight of animals as specified in subsection 6(2) are available for at least five of those seven years. This number of years is a reasonable period for which proponents could be expected to have retained the required records.

The emissions intensity reference period must consist of each of the years for which records are available, i.e. five, six or seven years. Where the records are available for either five or six years, it is not a requirement that those years are sequential. These provisions recognise that there may be circumstances where the required data is not available for a particular year, for example due to natural events.

The records must meet the requirements of subsections 6(3) and 6(4). For each of the parameters for number and liveweight of animals specified in subsection 6(2), there must be two records, one of which must have been created by the project proponent and one of which must have been created by another person. The other person must not be a delegate of the project proponent, i.e. someone authorised by the project proponent to undertake a requirement of the draft determination. In most cases, a delegate of a project proponent would be a landholder participating in an aggregated project, where the project proponent is the aggregator. These requirements provide for cross-checking of created records, and do not require duplication of records. An example of a record created by the project proponent is a herd inventory included in a taxation return. An example of a corresponding record created by a person who is not a project proponent or a delegate of the project proponent is which contributes to verification of the inventory is a receipt for sale or slaughter of animals.

Proponents should consider whether they have the required historical data before applying to register a project with the Regulator. Without such data, proponents will not be able to generate ACCUs.

Part 2 Herd management projects

7 Herd management projects

The effect of paragraphs 27(4)(b) and 106(1)(a) of the Act is that a project must be covered by a Methodology Determination, and that the Methodology Determination must specify the kind of offsets project to which it applies.

Section 7 provides that the draft Determination applies to an emissions avoidance offsets project that can reasonably be expected to avoid emissions from cattle, through any or all of the following:

- reducing the average number of days from birth to slaughter in the herd; or
- reducing the average age of the herd; or
- reducing the number of animals in the herd.

The draft Determination defines these kinds of projects as *herd management projects*.

Activities to achieve these outcomes reduce the emissions intensity (emissions compared with liveweight of beef cattle produced) of production, resulting in emissions that are lower than they would have been in the absence of the project.

More productive cattle can reach target weights earlier, and as a result the average number of days from birth to live export or slaughter, and therefore the number of days for which they produce emissions, will be reduced. Cattle liveweight could be either maintained at the same level or increased as a result of the project.

Reducing the average age of the herd also means cattle produce emissions for fewer days, and avoids emissions from any older cattle that have declining productivity.

Improving productivity can enable production goals to be met with fewer animals. While a reduction in the number of animals in the herd may be an outcome of a project activity, the draft Determination does not preclude an increase in the number of animals. However, the net abatement amount would reflect any associated increase in emissions.

An aggregated project may have multiple herds.

Part 3 Project requirements

8 Operation of this Part

The effect of paragraph 106(1)(b) of the Act is that a methodology determination must set out requirements that must be met for a project to be an eligible offsets project. Under paragraph 27(4)(c) of the Act, the Regulator must not declare that an offsets project is an eligible offsets project unless the Regulator is satisfied that the project meets these requirements. The effect of section 35 of the Act is that the Regulator may, if an appropriate regulation or legislative rule is made, revoke the declaration that a project is an eligible offsets project if eligibility requirements have not been met.

Part 3 of the draft Determination specifies a number of requirements that must be met in order for a project to be an eligible offsets project.

A key requirement under the ERF is that credits are issued for emissions reductions that are ‘additional’ - that is, emissions reductions would not likely have occurred under normal business conditions, in the absence of the ERF. The newness, regulatory additionality and government program requirements are additionality requirements specified in subsection 27(4A) of the Act. These requirements are sufficient for beef cattle herd management projects and therefore the draft Determination does not specify requirements in lieu of those in the Act.

The draft Determination specifies how the newness requirement is to be applied to herd management projects. Part 3 requires proponents of herd management projects to undertake at least one **project activity** in the crediting period.

9 Eligible herds

Section 9 provides that an eligible herd must be managed in a way consistent with any of the following:

- ANZSIC class 0142 (beef cattle farming); or
- ANZSIC class 0144 (sheep-beef cattle farming); or
- ANZSIC class 0145 (grain-sheep or grain-beef cattle farming).

The ANZSIC classes provide standard classifications for different types of industry activity. Section 9 notes that herds managed in feedlots (ANZSIC class 0143; beef cattle feedlots) are not eligible. Feedlot cattle are not eligible because their diets already consist of high levels of dry matter digestibility (DMD) and crude protein (CP) via supplementary feeding and they spend little to no time grazing on native pasture.

Section 9 also recognises that in the normal course of managing a herd, some individual animals will leave the herd and some will be added to the herd.

10 Project activity

Section 10 requires that proponents must undertake at least one **project activity** for each year in the crediting period. A project activity is an agricultural practice that can reasonably be expected to avoid emissions from cattle through one of the measures specified in section 7. It must be an activity that was not undertaken during the **emissions intensity reference period** and must not be an ineligible project activity (see section 11).

There is no requirement to undertake a different project activity in each project year.

Proponents may choose to undertake multiple project activities, but only one project activity is required for a project to be eligible.

A project activity may be completely different from any activities undertaken during the emissions intensity reference period. For example, pasture improvement could be undertaken to improve the DMD and CP of the herd’s diet, where there has been no previous pasture improvement.

It is not a requirement that a project activity must be completely different to any activity undertaken during the emissions intensity reference period. A project activity can also be an improvement on, or a variation to, a similar activity undertaken during the emissions intensity reference period. For example, a project activity in northern Australia could comprise installing more watering points to help increase growth rates by allowing cattle to move to areas of pasture that were not previously grazed. This project activity would represent an improvement or variation on a similar activity, because, some watering points

would have been installed previously, at a lower density. Allowing for these types of activities recognises that an increase in production efficiency of the herd can be achieved through incremental improvements to existing management practices.

Other project activities may include, but are not limited to:

- feeding of supplements containing higher levels of DMD and CP, particularly in the dry seasons when native pasture can have low nutritional value;
- management changes which ultimately affect the age of the herd, such as intensive culling of unproductive animals or reducing the number of breeders to produce the same weight of livestock sold from a higher survival rate of weaners; and
- new fencing to ensure joining can be timed to occur when feed is most plentiful, thereby helping improve the survival and health of heifers and calves.

Proponents are required to provide the Regulator with a description each project activity and how the activity is expected to avoid emissions from cattle through one of the measures specified in section 7. Proponents must describe how each activity improves on, differs from, or varies from a corresponding activity in the emissions intensity reference period. Where a project activity is completely different to any corresponding activity, the description must demonstrate this. Where a project activity is an improvement on, or variation to, a corresponding activity, a description of the improvement, variation or difference is required, and will need to include information on the similar previous activity. Proponents are not required to provide information on other activities undertaken as part of managing the herd which are not directly related to the project.

An explanation of how each project activity is consistent with Part 3 is also required. Proponents may also choose to provide supporting evidence.

A suggested approach for describing project activities is provided in Table 1. The examples included are indicative, and should not be considered as recommendations or a comprehensive list.

Table 1: *Suggested approach for describing project activities in accordance with eligibility requirements*

Project activity	Corresponding activity in emissions intensity reference period	Why this is a project activity	How the action will increase the efficiency of production	Supporting evidence of the potential effect on emissions	Evidence to verify the action was undertaken*
Supplementary feeding	Pasture feeding only	Feed is purchased and supplied to the herd during the dry season, improving the diet compared to the previous practice of providing pasture only.	Improved diets, particularly in the dry seasons, can increase liveweight gain and help prepare cattle for market at an earlier age. Improved feeding also improves animal health, survival and reproduction.	Industry guidance documents Journal papers	Sale invoices from feed suppliers Management records of feeding

Project activity	Corresponding activity in emissions intensity reference period	Why this is a project activity	How the action will increase the efficiency of production	Supporting evidence of the potential effect on emissions	Evidence to verify the action was undertaken*
Phosphorus supplementation as required	No Phosphorus supplementation	Phosphorus supplementation in the diet delivers greater productivity benefits particularly in young stock.	Improves growth, fertility and the reproduction rate of the herd.	Consultant recommendation	Sale invoices from feed suppliers Management records of the amount and timing of feeding
Installation of new fences to enable improved management of joining time	Minimal fencing and limited management of joining time	New fences allow separation of bulls from heifers and more effective control over joining.	By controlling joining, calves can be born in the better seasons and hence have better weight gain and condition, reaching market condition earlier. Survival of heifers and calves also improves.	State or territory government information materials	Sale invoices for purchase of fencing materials Invoices from fencing contractor Date-stamped photographs of fencing installation
Greater density of watering points	Low watering point density resulted in uneaten feed at the outer limits of stock movement.	The rate of watering point establishment is increased, improving access to pasture and providing faster turnoff.	More watering points allow the herd to graze over a greater distance than before, increasing the quality and rate of feed intake. Survival and growth rates are improved.	Published industry case studies	Sale invoices for purchase of materials used to store or distribute water Invoices from contractor Date-stamped photographs of watering point installation

*Evidence verifying that actions were undertaken is not required to meet eligibility requirements. Examples have been included to show how the suggested approach could also assist with meeting reporting, record-keeping and monitoring requirements (see Part 5).

11 Feeding non-protein nitrogen to a herd

Section 11 provides that feeding non-protein nitrogen to the herd is not eligible as a project activity under the draft Determination. The *Carbon Credits (Carbon Farming Initiative) (Reducing Greenhouse Gas Emissions by Feeding Nitrates to Beef Cattle) Methodology Determination 2014* (Nitrates Determination) covers the feeding of non-protein nitrates (in a situation where urea is already fed, which is common in rangeland Australia).

The Nitrates Determination is based on the direct reduction of methane in the rumen after feeding nitrate rather than urea. This emissions reduction mechanism differs from those applicable under the draft Determination, which provides for emission reductions through: changes to the age of the cattle sent to market and/or reduction in the overall age of the herd and/or a reduction in herd numbers. This does not preclude proponents from undertaking a separate project which applies the Nitrates Determination to the same herd.

Part 4 Net abatement amount

Division 4.1 The net abatement amount

12 Method for calculating the net abatement amount

Paragraph 106(1)(c) of the Act provides that a methodology determination must specify how to calculate the carbon dioxide equivalent (CO₂-e) net abatement amount for the project in relation to a reporting period.

Section 12 provides that the *carbon dioxide equivalent net abatement amount* for the project is the difference between the herd's *baseline emissions* and the herd's emissions following the implementation of project activities. The carbon dioxide equivalent net abatement amount for each year in the reporting period and for each herd in the project is the difference between the baseline emissions and the project emissions.

The methods for calculating the baseline emissions and project emissions are described in sections 14 and 15 respectively. All calculations must be conducted using the Herd Management Calculator, as described in section 16.

In some circumstances, emissions could increase, rather than decrease, in a reporting period. Emissions could increase where, for example, cattle scheduled to be sold at a particular time are retained for a longer period as a consequence of a natural event. Natural events such as drought, which affect herd condition, or floods, which may restrict access to the herd, are outside the control of the proponent.

Proponents are not liable for an increase in emissions in a reporting period. Subsection 12(4) provides that if the carbon dioxide equivalent net abatement amount of a reporting period is zero or less (i.e. project emissions exceed baseline emissions), it is taken to be zero for the purpose of calculating abatement over the reporting period.

13 Gases accounted for in abatement calculations

Section 13 lists the greenhouse gases and emissions sources that are accounted for in order to determine the net abatement amount for a herd management project. The emission sources and greenhouse gases which need to be taken into account when calculating the carbon dioxide equivalent net abatement for the project are methane (CH₄) from digestion processes in ruminants such as cattle (enteric fermentation) and nitrous oxide (N₂O) emissions from dung and urine.

A number of emissions sources are excluded from the abatement calculations, for the following reasons:

- Emissions from the operation of the cattle property. Emissions from this source are unlikely to change due to the project, and if they did they would be small, less than 5% of project emissions and difficult to estimate.

- Emissions from the production and transport of supplementary feed. This source of emissions is not likely to be material and is challenging to estimate.
- Emissions from cattle breeding, husbandry and transport. These emissions do not change between the baseline and project.

Division 4.2 The baseline emissions

14 The baseline emissions

Section 14 provides that the baseline emissions for each year in the reporting period will be the estimated methane and nitrous oxide emissions for each herd for each year in the reporting period which would have occurred had the project activity not been implemented. That is, the baseline emissions represents the emissions which would have occurred if management of the herd had continued to be the same as it was in the emissions intensity reference period. The herd size and composition and environmental conditions are considered to be the same for the baseline emissions and the project emissions in each year in the reporting period.

Section 14 describes the steps in calculating baseline emissions for each year in the reporting period. Baseline emissions are estimated in accordance with the methods used by the National Inventory Report, which calculates enteric methane emissions and nitrous oxide emissions from dung and urine from pasture-fed beef cattle.

Subsection 14(1) provides the baseline emissions for each year in the reporting period will be calculated by multiplying the *historical annual emissions intensity* – expressed in tonnes CO₂-e per kilogram of liveweight that left the herd for live export or slaughter – by the mass of liveweight that left the herd for live export or slaughter for that year and for that herd.

Subsection 14(2) provides that historical annual emissions intensity is calculated as follows. These calculations draw on the records of cattle numbers and liveweight required for the emissions intensity reference period.

- (a) For each year in the emissions intensity reference period:
 - (i) calculate total herd emissions, in tonnes CO₂-e, of the herd for the year; and
 - (ii) calculate the emissions from animals that left the herd for a purpose other than live export or slaughter during the year, from the time the animals left the herd to the end of the emissions intensity reference period; and
 - (iii) add the amounts calculated under (i) and (ii); and
 - (iv) divide the amount calculated under (iii) by the mass of liveweight that left the herd for live export or slaughter in the year.
- (b) Average the values in (iv).

The average described in (b) above is calculated as the average of the discrete annual intensities and not as the sum of total emissions for the emissions intensity reference period divided by the sum of liveweight that left the herd for that period. It is considered that the use of the alternative method of averaging would result in crediting against environmental variation in numbers, which the use of above approach inherently avoids. Changes in emissions intensity reflecting improvements in management practice are considered independent of herd size.

These calculations assume that the herd's diet in the emissions intensity reference period consisted entirely of the native pasture diet for the region as determined in accordance with paragraph 14(3)(b). This assumption is made because it is considered that data for alternative diets would not be available from records and because the requirements of subsection 14(3) would almost certainly not have been met for the emissions intensity reference period.

In some projects, some classes of the herd may leave the herd for a purpose other than for live export or slaughter. The emissions of these animals after they leave the herd will be unknown. Therefore the calculations assume that all animals that leave the herd for a purpose other than live export or slaughter continue to release emissions from the time they leave the herd to the end of the emissions intensity reference period. These emissions are conservatively assumed to be those of adult cattle from the date of sale to the end of the reference period. As such, emissions must be calculated as those of Adult Animal Equivalents using the National Inventory Report annual implied emissions co-efficient for beef cattle Animal Equivalents. The calculation is applied on a daily basis from the date of sale to the end of the emissions intensity reference period.

Subsection 14(4) provides that for the purpose of calculating the mass of liveweight that left the herd for live export or slaughter for that year and for that herd, each animal must be weighed no more than one month before it left the herd, as provided for in subsection 22(4).

Division 4.3 The project emissions

15 Project emissions

Section 15 requires that emissions of methane and nitrous oxide resulting from the project must be calculated for each year in the reporting period and for each herd. Project emissions will comprise: the total emissions from each herd in the reporting year; and any emissions from cattle that leave the herd for a purpose other than live export or slaughter, for every year from their sale until the end of the crediting period. This requirement takes into account the emissions from these cattle after they leave the herd, in line with the approach described for calculating baseline emissions.

If the project involves feeding cattle supplements which have a different level of DMD and CP than levels in native pasture, as assumed for the emissions intensity reference period, any resulting change in emissions, including increased emissions, will be included in calculations.

Division 4.4 Use of Herd Management Calculator to perform calculations

16 Requirement to use Herd Management Calculator

Section 16 prescribes that proponents use the *Herd Management Calculator* to perform calculations and that calculations must be performed by entering the inputs required by the Herd Management Calculator.

Consultation note: The Herd Management Calculator is under development and will implement the equations that are provided in Attachment B to this Explanatory Statement.

The Herd Management Calculator includes all the calculations required to determine the net abatement amount in accordance with this draft Determination. The Herd Management Calculator will automatically calculate emissions for the project, and the change between baseline and project emissions. Emissions are calculated for methane emissions from enteric fermentation and nitrous oxide emissions from dung and urine, as listed in section 13.

Paragraph 16(1)(c) provides that calculations using factors or parameters from an external source are to be taken from the version of the source in force at the end of the reporting period. Examples of such factors or parameters are the global warming potentials for methane and nitrous oxide prescribed by the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*.

The table to subsection 16(2) describes the inputs required by the Herd Management Calculator, and the units (where applicable) to be used for each input. Each input is required for the emissions intensity reference period and the crediting period. The inputs are derived as follows.

1. Identification of a region primarily occupied by each herd in the project. The region may comprise a territory, state, or a state and a sub-region, such as the Pilbara region of Western Australia. The regions are specified in the National Inventory Report.
2. Number of cattle in each livestock class. The numbers of all classes of cattle must be recorded for each year of the emissions intensity reference period.

There are seven classes of cattle, which are given in National Inventory Report Appendix 6.B.
3. Number of cattle sold for a purpose other than live export or slaughter in that year. The numbers of all classes of cattle that are sold for a purpose other than live export or slaughter must be recorded for each year of the emissions intensity reference period.
4. Liveweight in each livestock class in that year. Liveweight must be determined on a seasonal basis.

For the emissions intensity reference period, the liveweight by class can be the default values of National Inventory Report Table 6.B.1 for the appropriate region, season and class. Alternatively, actual herd data collected on a seasonal basis for the emission intensity reference period may be used if it is available.

For the crediting period, liveweight by season must be derived from either of the following. The same approach must be used for the whole crediting period.

- (i) Seasonal data determined through the Herd Management Calculator. The Herd Management Calculator uses a model that estimates the seasonal weights by iteration against opening and closing values from annual or semi-annual musterings.
 - (ii) Seasonal data from records collected by the proponent during the project reporting year. This data can be inserted into the Herd Management Calculator with the opening and closing weights to provide the complete data set.
5. Liveweight gain in each livestock class in that year. Liveweight gain must be determined on a seasonal basis.

For the emissions intensity reference period, the liveweight gain by class can be the default values of National Inventory Report Table 6.B.1 for the appropriate region, season and class. Alternately, actual herd data collected on a seasonal basis for the emission intensity reference period may be used if it is available.

For the crediting period, liveweight gain by season must be derived from either of the following. The same approach must be used for the whole crediting period.

- (iii) Seasonal data determined through the Herd Management Calculator. The Herd Management Calculator uses a model that estimates the seasonal weights by iteration against opening and closing values from annual or semi-annual musterings.
 - (iv) Seasonal data from records collected by the proponent during the project reporting year. This data can be inserted into the Herd Management Calculator with the opening and closing weights to provide the complete data set.
6. Mass of liveweight sold for live export or slaughter in that year must be determined as described in section 22.
 7. Average DMD of the native pasture diet in each season in the emissions intensity reference period is taken from values for the applicable region in National Inventory Report Table 6.B.3 and 6.B.4. Tables of these values are presented in the Herd Management Calculator. The DMD of the diet in the crediting period will be the average of the values in National Inventory Report Table 6.B.3 and the feed supplement, if provided, in that year.

The Herd Management Calculator provides DMD data on a range of commonly used feed supplements. The cattle feeds covered in the Herd Management Calculator are: grain, mixed grain, hay, cotton seed, improved pasture, leucaena, silage and crop. For purchased feeds of known composition, proponents can use fodder/commodity/by-products vendor declaration forms or equivalent to verify the DMD content of the feed types noted above. In the case of other supplementary feed types not covered in the calculator, fodder/commodity/by-products vendor declaration forms must be used to verify DMD values.

However, if using unlisted purchased supplements, proponents must enter DMD content from the records specified in section 20.

8. Average CP of the diet for the emissions intensity reference period and crediting period is determined in the same manner as for item 7 above.

Subsection 16(4) requires that the inputs for the crediting period be determined in accordance with the monitoring provisions of Division 5.4.

Subsection 16(5) refers to the methods collecting liveweight and liveweight gain as part of estimating baseline emissions (Division 4.2). For baseline emissions either National Inventory Report values or direct measurement records can be used.

Part 5 Reporting, record keeping and monitoring requirements

Division 5.1 Operation of this part

17 Application

Subsection 106(3) of the Act provides that a methodology determination may require the project proponent of an eligible offsets project to comply with specified monitoring, record keeping and reporting requirements.

Under Parts 17 and 21 of the Act, a failure to comply with these requirements may constitute a breach of a civil penalty provision, and a financial penalty may be payable.

The reporting, record keeping and monitoring requirements specified in Part 5 of the draft Determination are in addition to any requirements specified in the Act and subordinate legislation.

Proponents are required to monitor and keep records to demonstrate that the project meets the eligibility parameters listed in Part 3 of the draft Determination.

Division 5.2 Offset report requirements

The Act and subordinate legislation provide for flexible reporting periods. Proponents should be aware that the Act and subordinate legislation may also specify other reporting and notification requirements affecting the draft Determination.

18 Information in each offsets report

Section 18 requires each offsets report to include information on the project activity undertaken in each year in the reporting period, and all inputs and outputs from the Herd Management Calculator for the reporting period.

Division 5.3 Record-keeping requirements

The effect of paragraph 106(3)(c) of the Act is that a methodology determination may require the project proponent of an eligible offsets project to comply with specified record-keeping requirements.

19 Records that must be created and kept

Subsection 19(1) requires that at least two records must be kept for each of the parameters monitored in accordance with Division 5.4, which covers the number and average age of cattle in each livestock class, liveweight and liveweight gain and diet.

Subsection 19(1) provides that one of the two records must have been created by the project proponent or a delegate of the project proponent, and one record must have been created by a person who is not the project proponent or a delegate of the project proponent. A ***delegate of the project proponent*** means someone authorised by the project proponent to undertake a requirement of the determination, such as a landholder participating in an aggregated project where the aggregator is the project proponent.

The requirement for two records is consistent with the requirements for the emissions intensity reference period described in section 6. They provide for cross-checking of records. For example, livestock records from the herd book should be in a form where they can be cross checked against sales or disposal information from sources such as National Livestock Identification Scheme tags or cartage contractor invoices. Supplementary feeding records

should correspond to invoices/receipts, herd book records and information on the time the herd spends consuming supplementary feed.

For discussion – record-keeping requirements

The Department is seeking views from stakeholders on their capacity to keep at least two records for the parameters in Division 5.4, where one record is created by a project proponent or a delegate of the project proponent and one record is created by a person who is not the project proponent or a delegate of the project proponent.

Types of records that could be created by a project proponent or delegate and by someone other than a project proponent or delegate are set out below for the parameters in Division 5.4.

Number and average age of cattle in each livestock class

Records created by a proponent or a delegate of the project proponent may include:

- data from a herd book from at least an annual muster to account for entries to and exits from the herd plus attrition factors such as deaths in the herd; and
- taxation records of the opening and closing inventory of stock to support the herd book; and
- a data input page of the Herd Management Calculator.

Records created by a person who is not a proponent or a delegate of the project proponent may include:

- records of National Livestock Identification Scheme ear tag data at point of sale which demonstrate class and age of cattle sold and their destination;
- abattoir receipts indicating numbers of cattle slaughtered;
- records of cattle exported overseas;
- receipts from sales of cattle for purposes other than live export or slaughter, with name of purchaser and the date of sale; and
- cartage contractor receipts indicating date of cartage, cattle numbers and destination.

Liveweight and liveweight gain

Records created by a proponent or a delegate of the project proponent may include:

- data from the herd book recorded at each annual or seasonal muster and at point of sale; and
- a data input page from the Herd Management Calculator.

Records created by a person who is not a proponent or a delegate of the project proponent may include:

- abattoir receipts indicating sale weights;
- receipts from exporter indicating weight at sale; and
- saleyard receipts from point of sale for liveweight.

Diet

Records created by a proponent or a delegate of the project proponent may include:

- days on supplement/native pasture in each credit reporting year from herd book entries of date of entry and date of exit from supplementation for each class of cattle supplemented; and
- a data input page from the Herd Management Calculator.

Records created by a person who is not a proponent or a delegate of the project proponent may include:

- invoices for the location and time in which the herd was agisted; and
- hay baling or silage contractor invoices.

20 Records that must be kept for purchased feed

Section 20 specifies record-keeping requirements where a change to the herd's diet is a project activity, and where the change to the herd's diet involves purchased feed.

Where the feed supplement is purchased from a commercial supplier, the proponent must keep the commodity vendor declaration form, fodder declaration form, or equivalent containing the crude protein and dry matter digestibility of the feed constituting the dietary change.

Where the feed supplement was purchased from a non-commercial supplier, e.g. a neighbour, the proponent must supply a purchase invoice indicating the type of feed. The DMD and CP values will be the seasonal values for the region identified in accordance with subsections 16(2) and 16(3).

Division 5.4 Monitoring Requirements

21 Number and average age of cattle in each livestock class

Section 21 requires that, at least once a year for the crediting period, the number of animals in each livestock class and the number of animals in each livestock class leaving the property for a purpose other than live export or slaughter must be determined. This requirement enables the ongoing emissions from those cattle to be calculated.

Section 21 provides methods for determining the above parameters. A period of one month before, and one month after, the first day of the crediting period is allowed for the collection of cattle numbers and class data for the number of cattle in each class for the crediting period. The same one-month period applies for each subsequent year in the crediting period.

Subsection 21(3) requires collection of data supporting the determination of the number of cattle in each class leaving the herd for a purpose other than live export or slaughter during the crediting period. The supporting data must be collected no earlier than one month before the animals leave the herd and no later than the day the animals leave the herd. The types of supporting data could be those included in records described for section 19 above.

An annual muster would account for entries to and exits from the herd, as well as attrition factors such as deaths in the herd. The allowance for a one-month period either side of the start of the crediting period allows for variation in the time of muster each year.

Subsection 21(4) specifies how the date of birth of each animal is established for the purpose of determining the number of animals in each livestock class. The birth date of an animal is deemed to be the first day of the last season in which there is a feed intake adjustment for milk production provided for in the National Inventory Report. The feed adjustments are shown in National Inventory Report Table 6.B.5. For example, the table provides feed adjustments for Spring and Summer in Tasmania, based on the calving seasons in that state. Therefore all animals in Tasmania are deemed to have been born on the first day of Summer, that is, 1 December.

This provision allows for differences between regions in the time at which calving is managed to match feed availability. It reflects limitations on availability of data on the birth date of calves, particularly in northern Australia, and is considered to be an appropriately conservative estimate of age given the spread of calving periods over two seasons.

22 Liveweight and liveweight gain

Section 22 of the draft Determination sets out the requirements for determining liveweight (LW) and liveweight gain (LWG) for each livestock class in the herd, and LW of the animals that leave the herd for live export or slaughter, for the crediting period.

LW and LWG for each livestock class in the herd must be determined from direct measurement of animals in the herd. Proponents may choose to obtain this data through either: at least one annual muster; or at least four seasonal musters per year. Where the annual approach is used, data from the muster is used by the LW and LWG model incorporated in the Herd Management Calculator to provide seasonal data. The model analyses the relationship between the content of the feed inputs and the LW and LWG values per season and validates the estimates against the data on LW and LWG by class in the herd collected via the annual muster. The seasonal value of LW and LWG, the time on supplement and the seasonal variation in supplement composition provide the data for calculating annual methane and nitrous oxide emissions from the herd.

Proponents considering collection of data through at least four seasonal musters should assess the likelihood of being able to consistently collect such data. Consistent use of one of the two data collection methods is necessary to align with the provisions for on-farm data in the emissions intensity reference period for farms where such data is available and for consistency in estimation.

Measurements must be collected at a minimum within one month of the first day of the crediting period; and within one month of each anniversary of the first day of the crediting period. This provision allows for variation in annual mustering times.

For animals which leave the herd for live export or slaughter, the measurements of LW and LWG are the mass of liveweight sold.

23 Diet

Section 23 is applicable where a project activity is a change to the herd's diet. The project proponent is required to determine the number of days in each year of the crediting period in which the herd's diet was different from the diet in the emissions intensity reference period. This information is required as an input to the Herd Management Calculator, as specified in paragraph 16(3)(b).