

## **EXPLANATORY STATEMENT**

Issued by the Authority of the Parliamentary Secretary for Climate Change and  
Energy Efficiency

*Carbon Credits (Carbon Farming Initiative) Act 2011*

*Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy  
Waste from Landfill for Process Engineered Fuel Manufacture) Methodology  
Determination 2012*

### **Background**

The *Carbon Credits (Carbon Farming Initiative) Act 2011* (the Act) enables the crediting of greenhouse gas abatement in the land sector. Greenhouse gas abatement is achieved by either reducing or avoiding emissions or by removing carbon from the atmosphere and storing it in soil or trees.

Abatement 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, by legislative instrument, to make a methodology determination. The purpose of a methodology determination is to establish procedures for estimating abatement (emissions reductions and sequestration) and project rules for monitoring, record keeping and reporting on abatement.

A methodology determination must meet the offsets integrity standards set out in section 133 of the Act and the eligibility criteria set out in section 106 of the Act. The Minister cannot make a methodology determination unless the Domestic Offsets Integrity Committee (DOIC) has endorsed the proposal under section 112 of the Act and advised the Minister of the endorsement under section 113 of the Act. The DOIC is an independent expert panel established to evaluate and endorse methodology proposals.

### **Application of the Methodology Determination**

The *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture) Methodology Determination 2012* (the Methodology Determination) sets out the detailed rules for implementing and monitoring waste diversion projects that are transitioning from the Commonwealth Government's Greenhouse Friendly™ initiative.

Project proponents wanting to implement the Methodology Determination must make an application to the Clean Energy Regulator (the Regulator) and meet the eligibility requirements for an offsets project set out in subsection 27 (4) of the Act. These requirements include compliance with the rules set out in this Methodology Determination.

Offsets projects that are undertaken in accordance with the Methodology Determination and approved by the Regulator can generate Australian carbon credit units (ACCU) that can be sold to:

- Australian companies that pay the carbon price established under the *Clean Energy Act 2011*; and
- businesses in Australia wanting to offset their own carbon pollution.

### **Public Consultation**

The methodology proposal for *Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture* was published on the Department's website from 30 September 2011 to 9 November 2011. As a result, five public submissions were received.

The DOIC considered the issues raised in public submissions during its assessment of the proposal, as required under section 108 of the Act.

### **Determination Details**

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

The Methodology Determination commences retrospectively, from 1 July 2010.

Retrospective commencement is authorised by subsection 122 (3) of the Act, which provides that a determination can be expressed to have come into force on 1 July 2010 if the determination is made on or before 30 June 2013, and the application for endorsement was made on or before 30 June 2012. Both of these conditions are satisfied in this case.

Retrospective commencement does not adversely affect the rights of any person or impose a liability on any person in respect of anything done or not done before the date of registration on the Federal Register of Legislative Instruments. Rather, retrospective application confers a benefit in that it allows persons to apply for and generate ACCUs in circumstances where they would not normally be eligible to apply.

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

A Statement of Compatibility prepared in accordance with the *Human Rights (Parliamentary Scrutiny) Act 2011* is at [Attachment B](#).

## **Details of the Methodology Determination**

### **Part 1 Preliminary**

#### 1.1 Name of Methodology Determination

This section provides that the name of the Methodology Determination is the *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture) Methodology Determination 2012*.

#### 1.2. Commencement

This section provides that the Methodology Determination commences retrospectively, from 1 July 2010. Retrospective commencement is authorised by subsection 122(3) of the Act.

The Methodology Determination applies to projects that were established prior to 1 July 2010. ACCUs can only be issued, however, in respect of abatement which occurs from 1 July 2010. Subsections 27 (15) and (16) of the Act prevent the crediting of abatement before this date.

#### 1.3. Application

The effect of paragraph 106 (1) (a) of the Act is that a methodology determination must be expressed to apply to a specific kind of offsets project.

The Methodology Determination applies to projects that are transitioning from the Australian Government's Greenhouse Friendly<sup>TM</sup> initiative that divert construction and demolition waste and commercial and industrial waste to a purpose-built resource recovery facility, for the purpose of manufacturing process engineered fuel.

The project activity results in greenhouse gas abatement by avoiding methane emissions that would otherwise have been caused if the waste had entered landfill.

#### 1.4 Definitions

This section defines a number of terms used in the Methodology Determination. Key definitions include:

- 'commercial and industrial waste', which means waste materials generated from fixed point sources related to manufacturing, wholesale, retail, professional services and administration sectors;
- 'construction and demolition waste', which means waste materials generated from construction and demolition activities both on a large scale (high rise) and small scale (residential housing);
- 'Greenhouse Friendly<sup>TM</sup> initiative', which means the program known by that name and administered by the Commonwealth Government;
- 'legacy waste', which means waste accepted by the waste diversion facility before 1 July 2012 that would otherwise have entered landfill;

- ‘NGER (Measurement) Determination’, which means the National Greenhouse and Energy Reporting (Measurement) Determination 2008, made under subsection 10 (3) of the *National Greenhouse and Energy Reporting Act 2007*, as amended from time to time;
- ‘NGER Regulations’, which means the *National Greenhouse and Energy Reporting Regulations 2008*, as amended from time to time;
- ‘thermal oxidation’, which means the process of combusting process engineered fuel by the end user;
- ‘transitioning Greenhouse Friendly™ project’, which means a project that was previously approved as an abatement provider under the Greenhouse Friendly™ initiative; and
- ‘waste diversion facility’, which means a purpose-built facility that is used to process commercial and industrial waste and construction and demolition waste that would otherwise have entered landfill into a variety of product streams, including process engineered fuel.

Generally, where terms are not defined in the Methodology Determination, they have the meaning given by section 5 of the Act or in the Regulations. The Act and Regulations are available at <http://www.comlaw.gov.au>.

## **Part 2            Requirements that must be met for an offsets project to be an eligible offsets project**

### 2.1    Requirements that must be met for an offsets project to be an eligible offsets project

The effect of paragraph 106 (1) (b) of the Act is that a methodology determination must set out requirements that must be met for the offsets project to be an eligible offsets project.

This section outlines the requirements of which the Regulator must be satisfied before approving a project as an eligible offsets project. These requirements include the following:

- that the project:
  - o diverts legacy waste from commercial and industrial sources or from construction and demolition sources;
  - o diverts that waste to a waste diversion facility, in circumstances where the waste would otherwise have entered landfill; and
  - o processes that waste to produce process engineered fuel; and
  - o accounts for the application of thermal oxidation to the process engineered fuel for energy recovery purposes;
- the project must deal with legacy waste only, which is waste received before 1 July 2012; and
- the project must be a transitioning project, which means that it must have previously been approved as an abatement provider under the Australian Government’s Greenhouse Friendly™ initiative.

The Greenhouse Friendly™ initiative operated from 2001 to 2010. Under the initiative, credits for emissions avoided over an estimated 70 year period could be issued upfront. The

CFI on the other hand, only allows credits to be issued after the emissions avoidance has occurred. This Methodology Determination is designed to facilitate the transition of projects from the Greenhouse Friendly™ initiative to the CFI, by allowing credits to be issued over a 7 year period, where strict conditions are met.

### **Part 3            Calculating the carbon dioxide equivalent net abatement amount for a project in relation to a reporting period**

#### **Division 3.1            Preliminary**

##### 3.1    General

Paragraph 3.1 (1) (a) clarifies that all calculations are in respect of activities that are undertaken during the project period, which includes activities that have been undertaken in accordance with Part 2 of the Methodology Determination, but not yet credited.

Paragraph 3.1 (1) (d) clarifies that all references to process engineered fuel mean a reference to the process engineered fuel manufactured by the facility as a result of carrying out the project activity.

Subsection 3.1 (3) explains that, if a calculation uses a factor or parameter that is not otherwise specified in Schedules 1 to 5, the person carrying out the calculations must apply the factor or parameter prescribed in the NGER (Measurement) Determination or the NGER Regulations in force at the time that the offsets report was required to be submitted.

The reason for this distinction is that on 1 July 2011 the NGER (Measurement) Determination was amended. One of the amendments included removing the default value for the fraction of degradable organic carbon dissimilated ( $DOC_f$ ) for solid waste disposal, and replacing this default with individual  $DOC_f$  values based on each waste mix type. These changes apply to the 2011-2012 financial year.

##### 3.2    Greenhouse gas assessment boundary

This section sets out the greenhouse gas assessment boundary for the project. The greenhouse gas assessment boundary identifies those greenhouse gas sources and sinks that need to be assessed in order to calculate the greenhouse gas abatement arising as a result of the project.

The greenhouse gas assessment boundary includes the entire project and all identified greenhouse gas emissions that are either controlled or influenced by the project. Greenhouse gas sources within the project greenhouse gas assessment boundary include:

- (a) avoided emissions (methane) generated from the diversion from landfill of legacy waste materials; and
- (b) emissions from transport of materials from the waste diversion facility, where the transport destination is greater than 10 kilometres in radius from the waste diversion facility. The materials transported may include:
  - (i) residual waste materials that are unable to be recycled, from the waste diversion facility to a landfill; and
  - (ii) emissions from transport of the process engineered fuel from the waste diversion facility to the facility where it is combusted.

Emissions from the landfill of residual waste materials are excluded because if the residual waste contains degradable organic carbon, the emissions from that material are considered to be identical to the baseline scenario. The mass of the residual material is deducted from the mass of process engineered fuel manufactured, which means that it does not contribute to net project abatement.

Emissions from fuel used in the processing of legacy waste materials related to the manufacture of other recovered resources are also excluded. This is because allocation is undertaken on a mass basis. Emissions from the transport of recovered resource products from the waste diversion facility are also excluded on this basis.

Scope 2 emissions from electricity used to manufacture process engineered fuel are excluded from the greenhouse gas assessment boundary because these emissions are associated with the scope 1 emissions that are covered by the carbon pricing mechanism established under the *Clean Energy Act 2011*.

The steps involved in undertaking the abatement project include the following:

1. pre-sorting: the incoming waste stream is inspected to identify and remove contaminants that might disrupt fuel production. Large steel pieces are removed for recycling and other unsuitable materials are diverted to landfill;
2. size reduction and screening: the waste materials are processed and screened into various sized fractions with various material compositions, for example, low density materials such as wood and paper, and high density materials such as brick, rock, concrete and sand;
3. process engineered fuel product output: fuel manufactured to end user specifications and suitable for use as a fossil fuel replacement; and
4. other product output: other recovered resources include road base substitute (screened aggregate), steel scrap, aluminium and copper scrap, and residues.

### 3.3 Calculating the baseline for the offsets project

This section sets out the rules for calculating the baseline for the project, in accordance with paragraph 106 (4) (f) of the Act.

The project baseline is the methane that would have been generated from depositing commercial and industrial waste and construction and demolition waste to landfill, in the absence of the project.

The general baseline scenario is presented in Figure 1 below.



Figure 1 – Mixed legacy waste disposal to landfill baseline scenario.

## **Division 3.2            Calculations**

This Division includes a detailed description of the formulas used for calculating net greenhouse gas abatement, and explanations of the parameters included in each formula, along with a description of how each parameter is derived.

### **Subdivision 3.2.1    Calculating the baseline**

#### 3.4    Calculating baseline emissions ( $E_b$ )

Paragraph 106 (4) (f) of the Act provides that a methodology determination must specify a method for calculating the baseline for a project.

This section contains methods for calculating the baseline, which are set out in:

- Equation 1, which calculates the actual baseline emissions for a given methane generation potential of the degradable organic carbon content of the process engineered fuel;
- Equation 2, which calculates the methane generation potential of the degradable organic carbon content of the process engineered fuel for a given quantity of each waste mix type; and,
- Equation 3, which calculates the quantity of each waste mix type present in the process engineered fuel.

The process for determining the percentage of the total waste volume for each waste mix type is set out in Schedule 2 to the Methodology Determination.

#### 3.5    Calculating the quantity of biobased legacy waste material containing degradable organic carbon ( $Q_{BM}$ )

This section sets out methods for calculating the quantity of biobased legacy waste material containing degradable organic carbon, using Equation 5.

When calculating the quantity of process engineered fuel ( $Q_{PEF}$ ), proponents must include process engineered fuel inventory at the start of the reporting period and at the end of the reporting period, and material accepted onto the facility for process engineered fuel manufacture during the reporting period that is yet to be processed. This is to prevent double counting of material.

Equation 5 requires a deduction of the quantity of waste that does not contribute to methane generation including plastic, added water and additives within the process engineered fuel that are additional to the biobased legacy waste material types diverted from landfill. This may include additional ash content arising from inert waste materials, such as brick, ending up in the fuel as determined by the sampling protocol.

### **Subdivision 3.2.2    Calculating project emissions**

#### 3.6    Project emissions ( $E_p$ )

This section sets out instructions for calculating project emissions, using Equation 6 and Equation 7.

Project emissions are those emissions from on-site fuel consumption other than for electricity generation, for the purposes of manufacturing process engineered fuel.

### *Allocation*

The total emissions from the waste diversion facility need to be allocated to process engineered fuel and to other recovered resource products in order to calculate the emissions burden associated with the manufacture of process engineered fuel.

The allocation process is undertaken on a per tonne basis of product output. For example, if process engineered fuel is 60 per cent of the product output on a weight basis, then 60 per cent of all facility emissions must be allocated to the process engineered fuel. This involves measuring total product output for the period and dividing the total process engineered fuel output by total product output.

The process engineered fuel product proportion must be multiplied by the total project facility emissions to calculate total process engineered fuel production emissions, and reported in tonnes of CO<sub>2</sub>-e, as set out in Equation 7.

### 3.7 Calculating emissions from transport (MTE<sub>Product</sub>)

This section sets out the test for including emissions from transport, and the instructions for calculating these emissions.

Where the transport destination for the process engineered fuel and residual waste is outside a radius of 10 kilometres in distance from the waste diversion facility emissions from transport must be included in the greenhouse gas assessment boundary and calculated in accordance with Equation 8.

Where the transport destination for the process engineered fuel is less than 10 kilometres in radius from the waste diversion facility, then the transport emissions from the project are considered to be lower than the baseline scenario, which means that these emissions do not need to be accounted for.

The justification for the 10 kilometre distance rule is as follows:

- a return trip of 20 kilometres is estimated to use 10.92 litres of diesel. If the NGER (Measurement) Determination emission factor for diesel oil is applied, then each return trip will conservatively emit 29.3 kgCO<sub>2</sub>-e; and
- each tonne of process engineered fuel will divert materials from landfill with the potential to create more than 1,000 kgCO<sub>2</sub>-e of landfill gas. The excluded transport emissions account for less than 0.15 per cent of this amount.

To calculate the fuel usage factor for the fuel type that is used (FU<sub>FTi</sub>), proponents must use a default value that is derived from the ABS Survey of Motor Vehicle Use for 2010, which is located at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/9210.0.55.001/>

In circumstances where more than one destination is used for the same product type, then the proponent must assign the proportion of emissions to instances where an amount of material is transported within a 10 kilometre radius, and where a another amount is transported outside the 10 kilometre radius.



### **Subdivision 3.2.3      Calculating carbon dioxide equivalent net abatement amount**

Paragraph 106 (1) (c) of the Act provides that a methodology determination must specify a method for calculating the carbon dioxide equivalent (CO<sub>2</sub>-e) net abatement amount for the project in relation to a reporting period.

#### 3.8      Calculating carbon dioxide equivalent net greenhouse gas abatement for the project (A)

This section sets out the instructions for calculating the carbon dioxide equivalent net abatement amount for an offsets project, and the carbon dioxide equivalent net abatement amount for a reporting period, using Equations 9 and 10.

The carbon dioxide equivalent net abatement amount for the project is derived by subtracting the project emissions calculated in accordance with section 3.6, from the baseline emissions that are calculated in accordance with section 3.4.

The carbon dioxide equivalent net abatement amount for a reporting period is calculated by dividing net greenhouse gas abatement by seven, and multiplying this amount by the number of years in the reporting period. The sum of the number of years for all reporting periods for all reports submitted cannot be more than seven.

## **Division 3.3                      Data Collection**

### 3.9      Application

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 relating to the project. A project proponent for an eligible offsets project who fails to comply with a record-keeping requirement will have contravened a civil penalty provision (section 193 of the Act).

Under the Methodology Determination, data must be collected for the following activities at the project facility:

- legacy waste accepted by the facility, demonstrated through weighbridge records in accordance with the weighbridge protocol;
- fuel usage for all plant and equipment at the facility;
- water use;
- records of delivery consignments of process engineered fuel;
- product quality; and
- other product outputs (including residual waste to landfill).

### 3.10    Data collection procedures and measurement frequency

The table contained in this section sets out the data collection methods for deriving the parameters used to calculate greenhouse gas emissions and project abatement. It describes the data collection method, unit of measurement, measurement procedure and measurement frequency for each parameter used in the calculations.

### 3.11    Using the weighbridge protocol

This section specifies the data that must be collected by using a weighbridge. The weighbridge used in the project must be maintained in accordance with the provisions set out in section 4.4 of the Methodology Determination.

### 3.12    Using the quality sampling PEF protocol

This section requires proponents to sample process engineered fuel in accordance with the methods set out in section 4.3 of the Methodology Determination. This is to determine the ratio of plastic, residual water moisture content and inert ash residues, such as brick, for the purposes of Equation 5.

## **Part 4        Monitoring, record-keeping and reporting requirements**

### **Division 4.1    General**

#### 4.1    Application

This division contains specific monitoring, record-keeping and reporting requirements in accordance with paragraph 106 (3) (c) of the Act. A project proponent for an eligible offsets project who fails to comply with a record-keeping requirement relating to the project will have contravened a civil penalty provision (section 193 of the Act).

The monitoring, record-keeping and reporting requirements specified in this Part are in addition to any requirements specified in the Regulations.

### **Division 4.2    Monitoring requirements**

#### 4.2    Project monitoring plan

This section requires project proponents to develop and keep a project monitoring plan that can be audited by an independent auditor.

#### 4.3    Sampling of process engineered fuel

This section contains instructions for quality sampling of process engineered fuel.

Samples must be tested by a NATA accredited laboratory. NATA is the authority responsible for the accreditation of laboratories, inspection bodies, calibration services, producers of certified reference materials and proficiency testing scheme providers throughout Australia.

### **Division 4.3    Quality assurance and quality control**

#### 4.4    Quality assurance and quality control

This section requires that the weighbridge used in the project be regularly calibrated and checked in accordance with the methods prescribed in the *National Measurement Act 1960*.

The *National Measurement Act 1960* is available at <http://www.comlaw.gov.au>

### **Division 4.4    Record-keeping requirements**

#### 4.5    Records that must be kept

This section outlines the records that must be kept by a project proponent.

Proponents must provide assurance that the legacy waste delivered to the facility would have otherwise been disposed of to landfill and not, for example, diverted from a previously existing recycling facility that accepts source separated loads of materials for recycling.

## **Division 4.5 Offsets report requirements**

### 4.6 Report requirements

This section sets out this information that must be included in all project offsets reports that are submitted to the Clean Energy Regulator.

Under the Act, a project proponent may choose when to report, provided that the period between reports is not shorter than 12 months or longer than 5 years.

Offsets reports are the primary mechanism used by the Regulator to, among other things:

- determine whether or not to issue ACCUs for an eligible project; and
- take action to vary or revoke a project.

Failure to provide an offsets report or taking action to avoid submitting an offsets report to the Regulator is an offence that may attract a civil penalty under section 76 of the Act.

Under the Act, the first reporting period for an eligible offsets project begins when the project is declared eligible by the Regulator or if agreed by the proponent, at another specified date no earlier than 1 July 2010. The project proponent is required to nominate an end date for the reporting period, and must submit an offsets report within three months of the nominated end date. Under the Act, each subsequent reporting period begins immediately after the previous reporting period.

### Schedule 1

Table 1 in Schedule 1 provides a list of the waste mix types, degradable organic carbon content and DOCF values drawn from the NGER (Measurement) Determination that was applicable at the time the waste diversion activity occurred.

### Schedule 2

Table 2 in Schedule 2 provides a list of the percentage of the total waste tonnage for each waste mix type and a calculation to adjust for the limits imposed on restricted waste mix types that the waste diversion facility is subject to under licence or other conditions.

Schedule 2 also contains Equation 4.

### Schedule 3

Table 3 in Schedule 3 provides a list of factors or parameters from the NGER (Measurement) Determination and the NGER Regulations that were in force at 1 July 2011.

These particular factors must be used when performing calculations, in accordance with subsection 3.1 (3) of the Methodology Determination.

#### Schedule 4

Table 4 in Schedule 4 provides the average state or territory based landfill gas capture rates, which were calculated using data from the National Inventory Report 2010, for the parameter R in Equation 1.

The National Inventory Report can be found on the Department's website at <http://www.climatechange.gov.au/publications/greenhouse-acctg/national-inventory-report-2010.aspx>

#### Schedule 5

Schedule 5 provides instructions for calculating the quantity of water retained in total outgoing products, using data from the sampling of process engineered fuel protocol specified at Section 4.3.

## **Statement of Compatibility with Human Rights**

*Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011*

*Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture) Methodology Determination 2012*

This Legislative Instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

### **Overview of the Legislative Instrument**

The *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture) Methodology Determination 2012* (the Methodology Determination) sets out the detailed rules to implement and monitor an offsets project under the Carbon Farming Initiative (CFI) that is transitioning from the Australian Government's Greenhouse Friendly™ initiative and diverts construction and demolition waste and commercial and industrial waste to a purpose-built resource recovery facility, for the purpose of manufacturing process engineered fuel. The process engineered fuel can be used to replace fossil fuels in the cement making industry, or as an alternative renewable fuel for electricity power generation.

Project proponents wanting to implement the Methodology Determination must make an application to the Clean Energy Regulator (Regulator) and meet the eligibility requirements set out under the Act. Offsets projects that are approved by the Regulator can generate Australian Carbon Credit Units that can be sold to:

- Australian companies that pay the carbon price established under the *Clean Energy Act 2011*; and
- businesses in Australia wanting to offset their own carbon pollution.

### **Human rights implications**

This Legislative Instrument does not engage any of the applicable rights or freedoms.

### **Conclusion**

This Legislative Instrument is compatible with human rights as it does not raise any human rights issues.

**Mark Dreyfus, Parliamentary Secretary for Climate Change and Energy Efficiency**