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 through a Composting Alternative Waste Technology) Methodology Determination 2013

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 through a Composting Alternative Waste Technology) Methodology Determination 2013* (the Determination) sets out the detailed rules for implementing and monitoring legacy waste diversion projects that process waste to manufacture a range of fit for purpose products.

Project proponents wanting to implement the 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 Determination.

Offsets projects that are undertaken in accordance with the Determination and approved by the Regulator can generate Australian carbon credit units (ACCUs) 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 through a Composting Alternative Waste Technology* was published on the Department's website from 23 April 2012 to 2 June 2012. As a result, three 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, and endorsed the methodology proposal on 21 January 2013.

Determination Details

The Determination is a legislative instrument within the meaning of the *Legislative Instruments Act 200*3.

The 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 Determination are at Attachment A.

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

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.

Attachment A

Details of the Determination

Part 1 Preliminary

1.1 Name of Determination

This section provides that the name of the Determination is the *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste through a Composting Alternative Waste Technology) Methodology Determination 2013*.

1.2. Commencement

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

1.3 Definitions

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

- 'alternative waste treatment (AWT) facility', which means a facility that converts waste, that has been diverted from a landfill facility that is licensed by a State or Territory government body or by a local government authority, to energy or any other product;
- 'biobased product', which means a recovered resource product manufactured by the composting AWT facility and containing materials that were previously putrescible waste materials;
- 'commercial and industrial waste', which means waste materials generated from fixed point sources related to manufacturing, wholesale, retail, professional services and administration sectors;
- 'composting AWT facility', which means an AWT facility that uses a controlled and contained process to ensure that appropriate aerobic levels are maintained to produce a fit-for-purpose product from waste materials that would otherwise need to be landfilled;
- 'construction and demolition waste', which means waste materials generated from construction and demolition activities on any scale;
- 'legacy waste', which means waste accepted by the waste diversion facility before 1 July 2012 that would otherwise have entered landfill;
- 'mixed solid waste', which means solid waste that:
    - (a) contains both putrescible and non-putrescible waste; and
    - (b) if the waste is separated at the point of generation to form waste of a kind mentioned in (c) ('non-landfill waste')—comprises only waste that is residual after non-landfill waste is removed.
    - (c) For paragraph (b), a kind of non-landfill waste is any of the following:
        - (i) waste comprised of recyclable plastic, glass, metal or paper;

(ii) waste known as green waste or wood waste, comprised of garden waste, timber or similar materials from the natural environment;

(iii) organic waste from the livestock industry, for example, straw bedding and manure mixes;

(iv) any other kind of waste that is not intended for a landfill facility.

- 'municipal solid waste', which means legacy waste generated from the domestic sector which is collected in household garbage, recycling, garden organics and Council clean-up collections.
- '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.

Generally, where terms are not defined in the 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.

1.4 Kind of project to which this Determination applies

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. This section of the Determination explains that the instrument applies to a project that proposes to divert legacy waste to a composting AWT facility, in circumstances where:

- the legacy waste would otherwise have entered a landfill facility;
- the composting AWT facility is a purpose built enclosed facility; and
- the diverted legacy waste is processed in the enclosed facility to manufacture biobased products.

Alternative Waste Treatment (AWT) refers to a wide range of technologies which can be used to extract resources from mixed waste. In the Australian context, AWT typically refers to a combination of mechanical sorting and biological processes such as composting.

In this context, 'diversion' refers to the process of recovering waste material otherwise destined for landfill disposal. Examples include composting of organic waste, and recycling of plastics, metals and paper.

Part 2 Requirements for declaration as eligible project

2.1 Eligible projects

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.

2.2 Requirement 1—Project mechanism

This section requires that the project must divert waste to a composting AWT facility, within the meaning provided by section 1.3, in circumstances where the waste would otherwise be deposited to landfill.

The waste must be of the kind outlined in section 2.3 (legacy waste that is mixed solid waste within the meaning provided in the Regulations), and must be processed to produce biobased products.

The resultant products from the composting AWT facility can be used as soil conditioner, potting mix, landscape mulch, blended top soils or spill absorbents.

2.3 Requirement 2—Waste characteristics

This section requires that the project must deal with legacy waste only, which is waste received before 1 July 2012; and the waste must be mixed solid waste that is derived from one or a combination of the following waste streams:

- municipal solid waste;
- commercial and industrial waste; or
- construction and demolition waste.

2.4 Requirement 3—Processing technology

This section sets out the processing technology that must be used when undertaking the abatement project. This must include a combination of any of the following:

- composting digesters, where aerated revolving drums process putrescible waste by accelerating the composting process in combination with mechanical breakdown of materials through the drum prior to entering the compost maturation halls (residence time of three days);
- composting tunnels, where an aerated and enclosed chamber accelerates the compost process in combination with regular turning of materials prior to further windrow composting (residence time of approximately five weeks);
- size reduction and screening, where putrescible waste materials are processed and screened into various sized fractions with various material compositions, for example, organic rich fraction;

- compost maturation halls: aerated and enclosed halls where compost process is completed in combination with heat and pile turning (residence time of approximately four weeks); and
- compost windrowing, where regularly turned open air windrows are used as additional conditioning of the compost if required (residence time of approximately eight weeks).

Part 3 Requirements for operation of eligible projects

3.1 Operation of eligible projects

This section sets out the rules for operating a project that complies with the requirements in Part 2.

3.2 Waste must be classified

This section requires that waste is classified into the following waste mix types:

- municipal solid waste;
- commercial and industrial waste; or
- construction and demolition waste.

Classification of legacy waste into these three waste mix types is relevant to the net abatement amount determined in accordance with the calculations in Part 4.

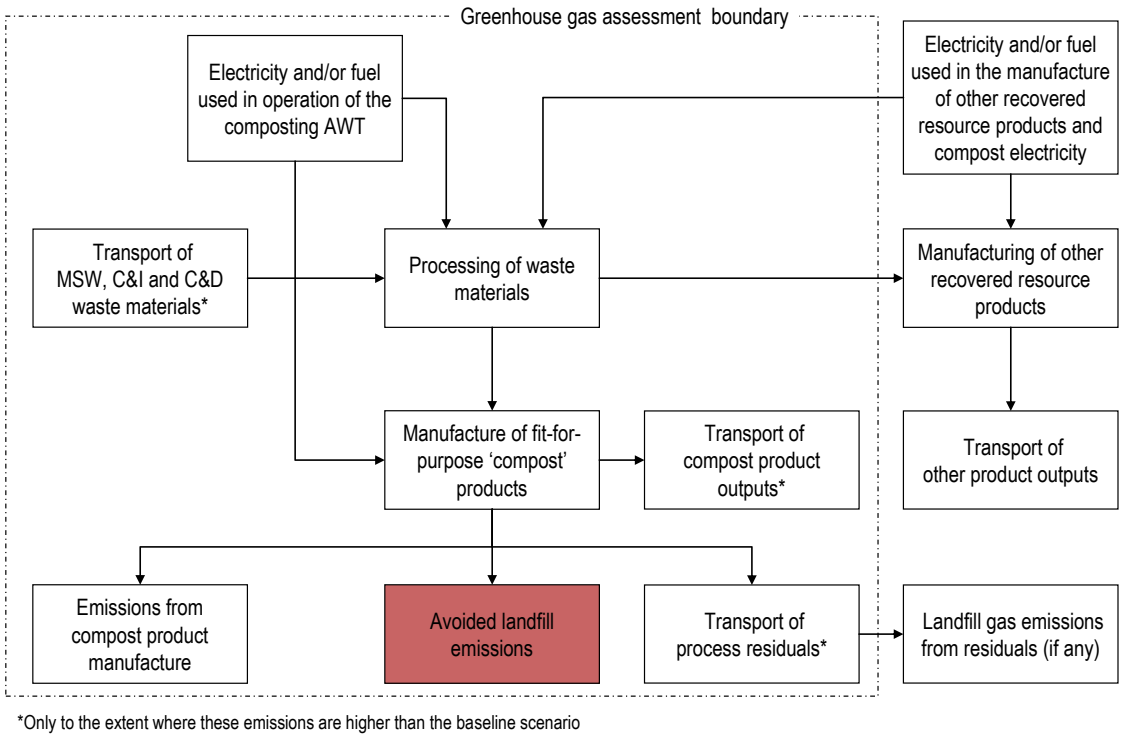
AWT facilities in Australia can be divided into groups based on the waste they receive. Municipal solid waste (MSW) is the residual waste material from households, collected by or for local government authorities. In the AWT context, this excludes source-separated wastes (e.g. kerbside recycling or green waste collections).

Commercial and industrial waste is typically generated from manufacturing, wholesale, retail, professional services and administration sectors, while construction and demolition waste is waste generated by the construction and demolition industry.

Division 3.2 Greenhouse gas assessment boundary

3.3 Greenhouse gases that must be accounted for

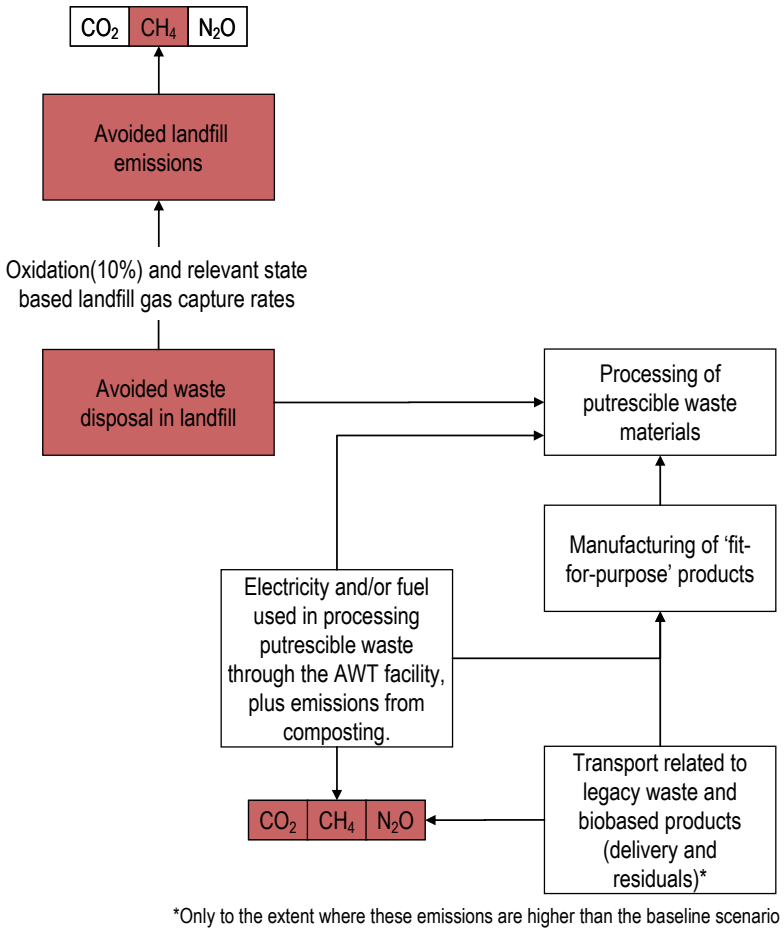
This section describes the greenhouse gases that need to be assessed in order to determine the total net change in greenhouse gas emissions resulting from a project abatement activity. These are outlined in the diagram below:



Emissions and sources that must be accounted for in the abatement calculations include:

- emissions from the decomposition of legacy waste;
- emissions from the transport of legacy waste to landfill;
- emissions from the composting facility;
- emissions from onsite fossil fuel consumption other than electricity generation for putrescible resource recovery;
- emissions from on-site electricity use where they occur before 1 July 2012;
- emissions from transport of legacy waste to landfill where the destination is greater than 10 kilometres in distance from the facility;
- emissions from residual waste sent to landfill; and
- emissions arising from the composting process.

The following diagram identifies the flow of greenhouse gases through the project, including the avoided landfill emissions.



Emissions from electricity

Emissions from grid derived electricity need to be calculated for project activity that occurred between 1 July 2010 and 1 July 2012. This is to avoid double counting of electricity; the carbon pricing mechanism introduced on 1 July 2012 covers emissions from electricity.

Emissions from transport

The test for determining whether emissions from transport of materials from the AWT facility would be greater than the baseline scenario is one of proximity to the end destination.

Subsection 4.4 (6) provides that emissions from transport must only be calculated if the end destination is outside a 10 kilometre radius of the AWT facility. If the transport is within a 10 kilometre radius, then transport emissions from the project scenario are deemed to be lower than the baseline scenario. This rule includes a 20 kilometre round trip.

Part 4 The net abatement amount

Division 4.1 The net abatement amount

4.1 The 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_2-e) net abatement amount for the project in relation to a reporting period.

The carbon dioxide equivalent net abatement amount for an eligible offsets project is set out at Equation 11, as the quantity of methane emissions avoided as a consequence of the project, minus emissions from project activities where those quantities are calculated in accordance with Division 4.2.

Division 4.2 Calculations

Subdivision 4.2.1 Preliminary

4.2 General

This section 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 Determination, but not yet credited.

Subsection 4.2 (c) provides 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.

Subdivision 4.2.2 Calculating the baseline

4.3 Calculating the baseline

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;
- Equation 2, which calculates the methane generation potential of the degradable organic carbon content of the putrescible waste diverted;
- Equation 3, which calculates the quantity of each waste mix type present in the putrescible waste;
- Equation 4, which sets out a method for adjusting default percentages for waste types; and

- Equation 5, which calculates the quantity of biobased legacy waste material containing degradable organic carbon present in the biobased product.

Waste mix type percentages are determined by either:

- using the maximum permitted tonnage of the restricted waste mix type received at the waste diversion facility, where waste is a restricted waste type (waste that is the subject of a restriction in accordance with a licence or other authorisation relating to the composting AWT facility); or
- by adjusting the default percentages prescribed in Schedule 2 for each unrestricted waste mix type (which means waste that is not a restricted waste type), in accordance with Equation 4.

The project baseline is the methane that would have been emitted from a landfill if that landfill had received the putrescible waste in the absence of the project. This is demonstrated in Figure 1 below.

The approach to calculating greenhouse gas emissions abatement is to estimate the methane production avoided from depositing waste into landfill. Only the methane emissions that are avoided after the capture and destruction of methane at the landfill should be counted. Consequently, the abatement calculation requires an estimation of the net methane production from the landfill.

The Solid Waste Calculator is required to be used to determine the proportion of methane generation potential that would have been released. The Solid Waste Calculator is available on the Clean Energy Regulator website at http://www.cleanenergyregulator.gov.au/National-Greenhouse-and-Energy-Reporting/Forms-and-calculators/Pages/default.aspx

Instructions for using the Solid Waste Calculator are set out in Schedule 4 of the Determination.

The baseline also assumes that, in the absence of the project, the waste would be transported to a nearby landfill which would comply with state average landfill performance. These figures are prescribed in Schedule 1 of the Determination.

The assumptions related to waste decomposition, methane generation and oxidation are those underlying the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*.

The baseline also assumes that the methane generation from the diverted waste materials would have otherwise migrated through the landfill profile and soil cover. To take into account the proportion of methane that would otherwise have been oxidised in the landfill and soil cover prior to being emitted to the atmosphere the amount of avoided methane generation that can be credited as abatement needs to be reduced by the oxidation factor (OF).

Subdivision 4.2.3 Calculating project emissions (E_p)

4.4 Calculating project emissions (E_p)

Equation 6 outlines the method for calculating project emissions.

Project emissions are:

- emissions from the operation of the AWT facility, which are calculated in accordance with Equation 7;
- emissions from electricity used by the operation of the AWT facility, which are calculated in accordance with Equation 8 where the conditions set out in subsection (3) apply;
- emissions from the composting process, which are calculated in accordance with Equation 9; and
- emissions from transport, which are calculated in accordance with Equation 10 where the conditions set out in subsection (6) apply.

Subdivision 4.2.4 Calculating net greenhouse gas 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_2-e) net abatement amount for the project in relation to a reporting period.

4.5 Calculating the net abatement (A)

This section sets out how the carbon dioxide equivalent net abatement amount for an offsets project is calculated.

Subsection (2) provides that the carbon dioxide equivalent net abatement amount for a reporting period is equal to the sum of the abatement for each year in the reporting period, in tonnes of carbon dioxide equivalence.

Once the sum of the abatement for each year is calculated, it must then be multiplied by the global warming potential of methane, and rounded to the nearest tonne of carbon dioxide equivalent.

Section 76 of the Act sets out the rules in relation to offsets reports. Paragraph 76 (1) (d) provides that the number of years in each reporting period cannot be more than 5 years.

Part 5 Monitoring, measurement, record-keeping and reporting requirements

Division 5.1 General

5.1 General

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).

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.

Under the 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; and
- product outputs (including residual waste to landfill).

Division 5.2 Measuring requirements

5.2 Project measurement

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.

5.3 Using the weighbridge protocol

This section specifies the data that must be collected by using a weighbridge.

The weighbridge used in the project is required to be regularly verified 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 5.3 Monitoring and recording requirements

5.4 General

This section explains that a project proponent is required to comply with the monitoring and recording provisions set out in the Division.

5.5 Monitoring requirements

This section sets out the requirements relating to monitoring. It provides that a project proponent must develop a project monitoring plan that details information about the project, including a project description, details about the organisation carrying out the project, operational information including variables in the baseline and project parameters and personnel training as required in section 5.3.

As part of developing and maintaining a project monitoring plan, project proponents should undertake an internal verification program. An example verification program would include:

- weighbridge data:
  - verify two daily periods of the weighbridge data;
  - verify two month periods of the weighbridge data; and
  - verify annual totals and calculation methodologies.
- electricity consumption:
  - verify calculation methodology;
  - verify two month periods are accurate and complete; and
  - verify annual totals and calculation methodologies.
- fuel consumption:
  - verify calculation methodology;
  - verify two month periods are accurate and complete; and
  - verify annual totals and calculation methodologies.

The project monitoring plan should also undergo a review process to ensure that it is up to date and accurate. As an example, this review could include:

- whether the database for aggregate inventory identifies sources (operational sites) of energy, waste and production data;
- whether data import from weighbridge systems, fuel and electricity accounts match with that recorded in the data input matrix of the spreadsheet used for each month;
- a review of the definitions of the input and outputs of the process to ensure that they are correct and relevant;
- verification, by sample, that measuring units for all data are consistent and accurately compiled;
- identification of two sample monthly periods and auditing of each step, from initial data collection at the weighbridge to the final position for each month;
- whether the most appropriate emission factors, energy content, and other parameters from the NGER (Measurement) Determination are applied;
- verification that all calculations within each period are correct and appropriate;
- verification that the summary of the periods is correct and appropriate; and

- investigation of any discrepancies.

Division 5.4 Record-keeping requirements

5.6 Records that must be kept

This section specifies the records that must be kept.

This includes the project monitoring plan, as well as general information about equipment used in the project, and data relating to values and calculations performed in Part 4.

Division 5.5 Offsets report requirements

5.7 Report requirements

This section sets out the information that must be included in all project offsets reports that are submitted to the 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 the average state or territory based landfill gas capture rates, which were calculated using data from the National Inventory Report 2010.

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 2

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 3

Schedule 3 lists waste mix types, degradable organic carbon content and DOCF values.

Schedule 4

Schedule 4 provides instructions for using the Solid Waste Calculator.