Carbon Credits (Carbon Farming Initiative—Alternative Waste Treatment) Methodology Determination 2015

I, Greg Hunt, Minister for the Environment, make the following determination.

Dated 12 January 2015

Greg Hunt
Minister for the Environment

OPC60653 - B

Contents

Part 1—Preliminary

1 Name of determination

This determination is the *Carbon Credits (Carbon Farming Initiative—Alternative Waste Treatment) Methodology Determination 2015*.

2 Commencement

This determination commences on the day after it is registered.

3 Authority

This determination is made under subsection 106(1) of the *Carbon Credits (Carbon Farming Initiative) Act 2011*.

4 Duration

This determination remains in force for the period that:

(a) begins when this determination commences; and

(b) ends on the day before this determination would otherwise be repealed under subsection 50(1) of the *Legislative Instruments Act 2003*.

5 Definitions

In this determination:

Act means the *Carbon Credits (Carbon Farming Initiative) Act 2011*.

alternative waste treatment facility or ***AWT facility*** means a facility that:

(a) accepts and processes mixed solid waste using eligible waste treatment technology; and

(b) extracts recyclable materials from the waste.

alternative waste treatment project or ***AWT project*** has the meaning given by subsection 9(2).

anaerobic digester means a system that consists of:

(a) one or more closed units designed to promote anaerobic digestion; and

(b) a biogas collection system; and

(c) any equipment associated with the transfer of biogas to a combustion device.

Note: Examples of anaerobic digesters include the following:

(a) covered anaerobic lagoons;

(b) plug-flow reactors;

(c) continuously stirred tank reactors;

(d) fixed film digesters;

(e) upflow anaerobic sludge blanket digesters.

anaerobic digestion means a biological process in which organic matter is broken down by microorganisms in the absence of oxygen.

applicable equation has the meaning given by subsection 41(4).

appropriate evidence has the meaning given by subsection 27(4).

appropriate measuring requirements has the meaning given by subsection 45(4).

biobased product means a product that:

(a) is manufactured by an AWT facility; and

(b) contains material that was previously putrescible eligible waste.

Note: Examples of biobased products include the following:

(a) compost;

(b) landscape mulch;

(c) mine site remediation material;

(d) soil conditioner.

biofilter means an engineered system that contains living compost-like material through which biogas passes for methane oxidation.

biogas collection efficiency means the percentage of biogas generated in an anaerobic digester that is sent to a combustion device.

biosolids means a mixture of mainly water and organic materials that:

(a) is produced entirely from domestic or commercial waste water treatment processes; and

(b) has undergone further processing to significantly reduce disease-causing pathogens and volatile organic matter; and

(c) has been stabilised for beneficial use.

CFI AWT determination means the following methodology determinations as in force immediately before the ERF commencement day:

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

(b) the *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste through a Composting Alternative Waste Technology) Methodology Determination 2013*;

(c) the *Carbon Credits (Carbon Farming Initiative) (Diversion of Legacy Waste to an Alternative Waste Treatment Facility) Methodology Determination 2013*;

(d) the *Carbon Credits (Carbon Farming Initiative) (Enclosed Mechanical Processing and Composting Alternative Waste Treatment) Methodology Determination 2013*.

combustion device means:

(a) a boiler, or an internal combustion engine, that is operated in accordance with the manufacturer's instructions; or

(b) a flare that has a monitoring and control system and is operated in accordance with the manufacturer's instructions; or

(c) a device:

(i) that combusts biogas with a destruction efficiency of at least 98%; and

(ii) that is operated in accordance with the manufacturer's instructions; and

(iii) the combustion process of which is controlled using a monitoring and control system.

commercial and industrial waste means waste generated from fixed point sources related to manufacturing, wholesale, retail, professional services and administration sectors.

composting process means a biological process in which organic matter in solid waste is broken down by microorganisms in the presence of oxygen.

construction and demolition waste means waste generated from construction and demolition activities.

eligible CFI waste has the meaning given by section 6.

eligible waste means:

(a) for a transitioning project—eligible CFI waste that is processed by the project on or after the ERF commencement day; or

(b) for any other AWT project—mixed solid waste.

eligible waste treatment technology means the following:

(a) enclosed composting technology;

(b) one or more anaerobic digesters and the transfer of biogas to a combustion device for destruction;

(c) process engineered fuel manufacture.

enclosed composting technology:

(a) means a semi-enclosed, or fully enclosed, alternative waste or composting technology in which the composting process occurs within a reactor that:

(i) has hard walls or doors on all 4 sides, or uses engineered soft covers; and

(ii) sits on a floor; and

(iii) has a permanent positive or negative aeration system; and

(b) may include open windrow composting to further refine compost products after the composting process mentioned in paragraph (a) is completed.

Note: Examples of enclosed composting technology include the following:

(a) composting tunnels;

(b) composting digesters;

(c) composting maturation halls.

ERF commencement day means the day Schedule 1 to the *Carbon Farming Initiative Amendment Act 2014* commences.

Note: Schedule 1 to the *Carbon Farming Initiative Amendment Act 2014* commenced on 13 December 2014.

expansion project has the meaning given by subsection 12(1).

first reporting period, for a project, means the first reporting period during which this determination is the applicable methodology determination for the project.

major venting event: a ***major venting event*** occurs when biogas in the storage capacity of an anaerobic digester is released to the atmosphere in a way that does not represent the proper operation of the anaerobic digester, including:

(a) when the biogas is released intentionally (for example, for safety or maintenance purposes); and

(b) when the biogas is released unintentionally (for example, as a result of a system failure).

mixed solid waste means municipal solid waste, commercial and industrial waste or construction and demolition waste but does not include any of the following:

(a) recyclable paper, paperboard, glass, metal or plastic that is separated at the point of generation;

(b) green waste or wood waste that is separated at the point of generation;

(c) organic waste from the livestock industry, such as straw bedding and manure mixes;

(d) biosolids;

(e) waste that is comprised of only putrescible waste that is separated at the point of generation.

monitoring and control system, for a flare or other device, means a system that consists of:

(a) a monitoring system that detects combustion and monitors if the combustion is operating at the manufacturer's specifications for the complete combustion of methane; and

(b) an associated control system that shuts down biogas flow to the flare or other device when the flare or device is not operating at the manufacturer's specifications for the complete combustion of methane.

Note: An example of a monitoring and control system for a flare is a flare management system that incorporates a UV detection sensor.

monitoring requirements means the requirements set out in section 45.

municipal solid waste means waste that is:

(a) generated from the domestic sector; and

(b) collected in household garbage, recycling, mixed organics, garden organics or local government clean-up collections; and

(c) from 1 July 2015, classified as either municipal solid waste class I or municipal solid waste class II (within the meaning of the NGER (Measurement) Determination).

new project has the meaning given by section 11.

NGA Factors document has the meaning given by subsection 31(4).

NGER (Measurement) Determination means the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*.

NGER Regulations means the *National Greenhouse and Energy Reporting Regulations 2008*.

non-biobased product means a product manufactured by an AWT facility that is not a biobased product.

Note: Examples of non-biobased products include the following:
(a) recycled steel;
(b) aluminium;
(c) plastic.

non-monitored period has the meaning given by subsection 46(1).

open windrow composting means composting in which open air windrows are regularly turned to provide additional conditioning of the compost as required.

process engineered fuel manufacture means a process:
(a) by which a combustible fuel substitute is produced from mixed solid waste that would otherwise enter landfill; and
(b) that may include pre-sorting of waste, separation of recyclable material, size reduction and screening.

putrescible eligible waste means the organic matter contained within eligible waste which is capable of being decomposed by microorganisms.

putrescible waste means the organic matter contained within solid waste which is capable of being decomposed by microorganisms.

relevant 24-month period has the meaning given by subsection 27(4).

relevant day has the meaning given by subsection 31(4).

residual waste means material that:
(a) is disposed of in landfill at the end of processing by an AWT facility; and
(b) is not a biobased product, or a non-biobased product, manufactured by the AWT facility.

separated at the point of generation has the meaning given by section 7.

transitioning project has the meaning given by section 13.

waste mix type means any of the following:
(a) food;
(b) paper and paper board;
(c) textiles;
(d) garden and park;
(e) wood and wood waste;
(f) sludge;
(g) nappies;
(h) rubber and leather;

(i) inert waste (including concrete, metal, plastic and glass).

6 Meaning of *eligible CFI waste*

(1) Waste of a particular kind is ***eligible CFI waste*** for a transitioning project if, under the CFI AWT determination that was the applicable methodology determination for the project immediately before the ERF commencement day, processing waste of that kind was a requirement to be an eligible offsets project.

(2) For the purposes of subsection (1), disregard any requirement in the CFI AWT determination that the waste processed must be legacy waste (as defined in the CFI AWT determination).

7 Meaning of *separated at the point of generation*

Waste is ***separated at the point of generation*** if:

(a) the waste is disposed of into a container, located where the waste is generated, that is intended to contain:

(i) a particular waste mix type; or

(ii) a particular combination of waste mix types; and

(b) the waste is of a waste mix type that the container is intended to contain.

Note: Examples of a container intended to contain a particular combination of waste mix types include:

(a) a container for co-mingled recycling (that is intended to contain a combination of paper, glass, metal and plastics for recycling); and

(b) a container for mixed organics (that is intended to contain a combination of food and green waste for composting).

8 References to factors and parameters from external sources

(1) If a calculation in this determination includes a factor or parameter that is defined or calculated by reference to another instrument or writing, the factor or parameter to be used for a reporting period is the factor or parameter referred to in, or calculated by reference to, the instrument or writing as in force at the end of the reporting period.

(2) Subsection (1) does not apply if:

(a) the determination specifies otherwise; or

(b) it is not possible to define or calculate the factor or parameter by reference to the instrument or writing as in force at the end of the reporting period.

Part 2—Alternative waste treatment projects

9 Alternative waste treatment projects

(1) For paragraph 106(1)(a) of the Act, this determination applies to an offsets project that involves:

(a) the diversion of eligible waste that would otherwise enter landfill to an AWT facility; and

(b) the processing of that waste using eligible waste treatment technology.

(2) A project covered by subsection (1) is an ***alternative waste treatment project*** or ***AWT project***.

(3) An AWT project may be:

(a) a new project; or

(b) an expansion project; or

(c) a transitioning project.

Part 3—Project requirements

10 Operation of this Part

For paragraph 106(1)(b) of the Act, this Part sets out requirements that must be met for an AWT project to be an eligible offsets project.

11 Requirements for a new project

A ***new project*** must:

(a) construct a new AWT facility; and

(b) then process eligible waste, that would otherwise enter landfill, at the facility using eligible waste treatment technology.

12 Requirements for an expansion project

(1) An ***expansion project*** must:

(a) expand an existing AWT facility in order to increase the facility's capacity to process eligible waste, that would otherwise enter landfill, using eligible waste treatment technology; and

(b) then process eligible waste, that would otherwise enter landfill, at the expanded facility using eligible waste treatment technology.

(2) An application made under section 22 of the Act in relation to an expansion project must be accompanied by appropriate evidence that is sufficient to calculate, using equation 8, the historic quantity of putrescible eligible waste processed by the existing AWT facility in the 24-month period before the application is made.

Note: An expansion project that does not have evidence for the whole of the 24-month period will not meet the requirements to be an eligible offsets project.

13 Requirements for a transitioning project

A ***transitioning project*** must:

(a) immediately before the ERF commencement day, be an eligible offsets project covered by a CFI AWT determination; and

(b) involve eligible waste, that would otherwise enter landfill, being processed using eligible waste treatment technology.

Part 4—Net abatement amount

Division 1—Preliminary

14 Operation of this Part

For paragraph 106(1)(c) of the Act, this Part specifies the method for working out the carbon dioxide equivalent net abatement amount for a reporting period for an AWT project that is an eligible offsets project.

15 Overview of gases accounted for in abatement calculations

The following table provides an overview of the greenhouse gases and emissions sources that are relevant to working out the carbon dioxide equivalent net abatement amount for an AWT project.

Greenhouse gases and emissions sources

Item	Relevant calculation	Emissions source	Greenhouse gas
1	Baseline emissions	The decomposition of eligible waste at landfill	Methane (CH_4)
2	Project emissions	Fuel consumption	Carbon dioxide (CO_2) Methane (CH_4) Nitrous oxide (N_2O)
3	Project emissions	Electricity consumption	Carbon dioxide (CO_2) Methane (CH_4) Nitrous oxide (N_2O)
4	Project emissions	Emissions from composting processes	Methane (CH_4) Nitrous oxide (N_2O)
5	Project emissions	Emissions from anaerobic digester leakage or venting events	Methane (CH_4) Nitrous oxide (N_2O)
6	Project emissions	Emissions from the combustion of biogas	Methane (CH_4) Nitrous oxide (N_2O)

Division 2—Method for calculating net abatement amount

16 Summary

The carbon dioxide equivalent net abatement amount for a reporting period is worked out by adding together the activity abatement portion for the reporting period and any activity abatement portions, and legacy abatement portions, from previous reporting periods that have accrued and have not already been used to calculate the carbon dioxide equivalent net abatement amount.

17 Net abatement amount

The carbon dioxide equivalent net abatement amount for a reporting period, in tonnes CO_2-e, is worked out using the formula (***equation 1***):

$$A_N = A_0 + A_{Acc}$$

where:

A_N means the carbon dioxide equivalent net abatement amount for the reporting period, in tonnes CO_2-e.

A_0 means activity abatement portion A_0 for the reporting period, in tonnes CO_2-e, worked out in accordance with section 19.

A_{Acc} means the amount, in tonnes CO_2-e, that is the sum of:

(a) each activity abatement portion that:
  (i) has accrued from a previous reporting period (see subsection 19(3)); and
  (ii) has not been used before to calculate the carbon dioxide equivalent net abatement amount; and

(b) if the project is a transitioning project—each legacy abatement portion that:
  (i) has accrued from a previous reporting period (see subsection 41(2)); and
  (ii) has not been used before to calculate the carbon dioxide equivalent net abatement amount.

Note: The no double counting test in section 15A of the Act means that abatement will only be reflected in the unit entitlement for a certificate of entitlement in respect of an eligible offsets project if it has not been reflected in the unit entitlement for another certificate or project.

Division 3—Method for calculating activity abatement portions

Subdivision A—Activity abatement portions

18 Summary

The activity abatement portions for a reporting period are worked out by dividing into 7 equal portions the abatement resulting from the project's activities during the reporting period. One portion is used to calculate the carbon dioxide equivalent net abatement amount for the reporting period and the 6 other portions accrue over time to be used in subsequent reporting periods.

19 Calculation and accrual of activity abatement portions

Calculation of activity abatement portions

(1) Subject to subsection (2) and section 20, the activity abatement portions for a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 2***):

$$A_Y = \frac{E_B - E_P}{7}$$

where:

A_Y means activity abatement portion A_0, A_1, A_2, A_3, A_4, A_5 or A_6, in tonnes CO_2-e.

E_B means the baseline emissions, in tonnes CO_2-e, worked out using equation 3.

E_P means the project emissions, in tonnes CO_2-e, worked out using equation 9.

Note: The result of subtracting E_P from E_B is divided by 7 because this is the length of the crediting period for emissions avoidance projects (see section 69 of the Act).

(2) The activity abatement portions for the reporting period are taken to be zero if:
  (a) the quantity of putrescible eligible waste that is processed during the reporting period is, or is taken to be, zero; or
  (b) the reporting period is not included in a crediting period for the project.

Note: The quantity of putrescible eligible waste that is processed during a reporting period is worked out using equation 6.

Accrual of activity abatement portions

(3) The activity abatement portions for a reporting period accrue as follows:
  (a) A_1 accrues 1 year after the end of the reporting period;
  (b) A_2 accrues 2 years after the end of the reporting period;
  (c) A_3 accrues 3 years after the end of the reporting period;
  (d) A_4 accrues 4 years after the end of the reporting period;
  (e) A_5 accrues 5 years after the end of the reporting period;

(f) A_6 accrues 6 years after the end of the reporting period.

20 Activity abatement portions for certain transitioning projects

If the ERF commencement day falls within the first reporting period for a transitioning project, the activity abatement portions for the reporting period are to be worked out as if the reporting period started on the ERF commencement day.

Note: Waste that is processed by a transitioning project before the ERF commencement day is not eligible waste (see the definition of ***eligible waste*** in section 5).

Subdivision B—Calculations relating to baseline emissions

21 Summary

The baseline emissions for a reporting period are the emissions that would have resulted if the eligible waste processed during the reporting period had entered landfill instead.

22 Baseline emissions

(1) The baseline emissions for a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 3***):

$$E_B = \left(1 - W_{LFG}\right) \times M_B \times \left(1 - OF_{LF}\right) \times GWP_{CH_4}$$

where:

E_B means the baseline emissions, in tonnes CO_2-e.

W_{LFG} means the average capture rate set out in the table in subsection (2) for methane emissions from landfill in the State or Territory in which the project is located.

M_B means the methane generation potential of the degradable organic carbon content in eligible waste processed during the reporting period, in tonnes CH_4, worked out using equation 4.

OF_{LF} means the oxidation factor for near surface methane in landfill mentioned in subsection 5.4(1) of the NGER (Measurement) Determination.

GWP_{CH_4} means the value specified as the Global Warming Potential for methane in regulation 2.02 of the NGER Regulations.

(2) The following table sets out the average capture rate for methane emissions from landfill in each State and Territory.

Average capture rate for methane emissions from landfill (W_{LFG})			
Item	**State or Territory**	**Rate for transitioning projects (%)**	**Rate for other AWT projects (%)**
1	New South Wales	24	37
2	Victoria	32	45
3	Queensland	16	30
4	Western Australia	27	30
5	South Australia	29	29
6	Tasmania	33	39
7	Australian Capital Territory	47	66
8	Northern Territory	25	18

23 Methane generation potential of degradable organic carbon content in eligible waste

The methane generation potential of the degradable organic carbon content in eligible waste processed during a reporting period, in tonnes CH_4, is worked out using the formula (***equation 4***):

$$M_B = \sum_w \left(WM_w \times DOC_w \times DOC_{F,w} \right) \times MCF \times W_{LFG,CH_4} \times F_{C \rightarrow CH_4}$$

where:

M_B means the methane generation potential of the degradable organic carbon content in eligible waste processed during the reporting period, in tonnes CH_4.

WM_w means the quantity of waste mix type w present in the eligible waste, in tonnes, worked out using equation 5.

DOC_w means the degradable organic carbon value for waste mix type w mentioned in section 5.12 of the NGER (Measurement) Determination.

$DOC_{F,w}$ means the fraction of degradable organic carbon dissimilated for waste mix type w mentioned in section 5.14A of the NGER (Measurement) Determination.

MCF means the methane correction factor for aerobic decomposition mentioned in section 5.14B of the NGER (Measurement) Determination.

W_{LFG,CH_4} means the fraction, by volume of methane generated in landfill gas, mentioned in section 5.14C of the NGER (Measurement) Determination.

$F_{C \rightarrow CH_4}$ means 1.336, being the factor to convert a mass of carbon to a mass of methane.

w means a waste mix type present in the eligible waste.

Section 24

24 Quantity of a waste mix type in eligible waste

(1) The quantity of a waste mix type present in eligible waste processed during a reporting period, in tonnes, is worked out using the formula (***equation 5***):

$$WM_W = \left(\frac{Q_{MSW}}{EW} \times PW \times W_{MSW,w} \right) + \left(\frac{Q_{C\&D}}{EW} \times PW \times W_{C\&D,w} \right) + \left(\frac{Q_{C\&I}}{EW} \times PW \times W_{C\&I,w} \right)$$

where:

WM_W means the quantity of waste mix type w present in the eligible waste processed during the reporting period, in tonnes.

Q_{MSW} means the quantity of the eligible waste that is municipal solid waste, in tonnes, worked out in accordance with the monitoring requirements.

EW means the total quantity of eligible waste received during the reporting period, in tonnes, worked out using equation 7.

PW means the quantity of putrescible eligible waste processed during the reporting period, in tonnes, worked out using equation 6.

$W_{MSW,w}$ means the proportion of waste mix type w in the eligible waste that is municipal solid waste, worked out in accordance with subsection (2).

$Q_{C\&D}$ means the quantity of the eligible waste that is construction and demolition waste, in tonnes, worked out in accordance with the monitoring requirements.

$W_{C\&D,w}$ means the proportion of waste mix type w in the eligible waste that is construction and demolition waste, worked out in accordance with subsection (2).

$Q_{C\&I}$ means the quantity of the eligible waste that is commercial and industrial waste, in tonnes, worked out in accordance with the monitoring requirements.

$W_{C\&I,w}$ means the proportion of waste mix type w in the eligible waste that is commercial and industrial waste, worked out in accordance with subsection (2).

w means a waste mix type present in the eligible waste.

(2) The proportion of waste mix type w in the eligible waste that is construction and demolition waste, commercial and industrial waste or municipal solid waste (a ***waste stream***) is:

(a) if inert waste is a waste mix type in the eligible waste—the percentage worked out for the waste mix type and waste stream under subsection 5.11(3) of the NGER (Measurement) Determination, as that subsection applies for the purposes of this paragraph (see subsection (3)); or

(b) if paragraph (a) does not apply and the licence or other authorisation that authorises the operation of the project's AWT facility restricts the waste mix types that may be received at the facility—the percentage worked out for the waste mix type and waste stream under subsection 5.11(3) of the

NGER (Measurement) Determination, as that subsection applies for the purposes of this paragraph (see subsection (4)); or

(c) if paragraphs (a) and (b) do not apply—the default percentage mentioned in paragraph 5.11(2)(c) of the NGER (Measurement) Determination for the waste mix type and waste stream.

(3) For the purposes of paragraph (2)(a), subsection 5.11(3) of the NGER (Measurement) Determination applies as if:

(a) a reference to "the landfill" were a reference to the project's AWT facility; and

(b) a licence or other authorisation authorising the operation of the AWT facility restricted the waste mix types that may be received at the AWT facility; and

(c) inert waste were a restricted waste mix type; and

(d) each waste mix type other than inert waste were an unrestricted waste mix type; and

(e) the maximum permitted tonnage of inert waste received at the AWT facility were zero.

(4) For the purposes of paragraph (2)(b), subsection 5.11(3) of the NGER (Measurement) Determination applies as if a reference to "the landfill" were a reference to the project's AWT facility.

25 Quantity of putrescible eligible waste

(1) Subject to subsection (2), the quantity of putrescible eligible waste processed during a reporting period, in tonnes, is worked out using the formula (***equation 6***):

$$PW = EW - \left(Q_{RW} + Q_{NBP} + HW \right)$$

where:

PW means the quantity of putrescible eligible waste processed during the reporting period, in tonnes.

EW means the total quantity of eligible waste received during the reporting period, in tonnes, worked out using equation 7.

$\boldsymbol{Q_{RW}}$ means the quantity of residual waste disposed of during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

$\boldsymbol{Q_{NBP}}$ means the quantity of non-biobased products manufactured during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

HW means the historic quantity of putrescible eligible waste for the reporting period, in tonnes, worked out in accordance with section 27.

(2) If the amount worked out under subsection (1) is less than zero, the quantity of putrescible eligible waste processed during the reporting period is taken to be zero.

Section 26

26 Total quantity of eligible waste received

The total quantity of eligible waste received during a reporting period, in tonnes, is worked out using the formula (***equation 7***):

$$EW = Q_{MSW} + Q_{C\&I} + Q_{C\&D}$$

where:

EW means the total quantity of eligible waste received during the reporting period, in tonnes.

$\boldsymbol{Q_{MSW}}$ means the quantity of the eligible waste that is municipal solid waste, in tonnes, worked out in accordance with the monitoring requirements.

$\boldsymbol{Q_{C\&I}}$ means the quantity of the eligible waste that is commercial and industrial waste, in tonnes, worked out in accordance with the monitoring requirements.

$\boldsymbol{Q_{C\&D}}$ means the quantity of the eligible waste that is construction and demolition waste, in tonnes, worked out in accordance with the monitoring requirements.

27 Historic quantity of putrescible eligible waste

Quantity for new projects and transitioning projects

(1) For a new project or a transitioning project, the historic quantity of putrescible eligible waste for a reporting period is zero.

Quantity for expansion projects

(2) For an expansion project, the historic quantity of putrescible eligible waste for a reporting period is worked out by adjusting the historic quantity of putrescible eligible waste for the relevant 24-month period on a pro rata basis by reference to the length of the reporting period.

Note: This means that if, for example, the length of the reporting period is 6 months, the historic quantity of putrescible eligible waste for the reporting period is worked out by multiplying the historic quantity of putrescible eligible waste for the relevant 24-month period by $^{6}/_{24}$.

(3) The historic quantity of putrescible eligible waste for the relevant 24-month period, in tonnes, is worked out using the formula (***equation 8***):

$$HW = HQ_{EW} - \left(HQ_{RW} + HQ_{NBP}\right)$$

where:

HW means the historic quantity of putrescible eligible waste for the relevant 24-month period, in tonnes.

$\boldsymbol{HQ_{EW}}$ means the quantity of eligible waste received by the project's AWT facility in the relevant 24-month period, in tonnes, worked using appropriate evidence.

HQ_{RW} means the quantity of residual waste disposed of by the project's AWT facility during the relevant 24-month period, in tonnes, worked using appropriate evidence.

HQ_{NBP} means the quantity of non-biobased products manufactured by the project's AWT facility during the relevant 24-month period, in tonnes, worked using appropriate evidence.

Note: To be an eligible offsets project, the application made under section 22 of the Act in relation to an expansion project must be accompanied by appropriate evidence that is sufficient to calculate the historic quantity of putrescible eligible waste for the relevant 24-month period using equation 8 (see subsection 12(2)).

(4) In this section:

appropriate evidence means:

(a) weighbridge evidence from an accepted industry weighbridge that meets appropriate measuring requirements; or

(b) waste transport contracts and invoices that provide evidence of relevant quantities of transported waste.

relevant 24-month period, for a project, means the 24-month period ending on the day before an application under section 22 of the Act is made in relation to the project.

Subdivision C—Calculations relating to project emissions

28 Summary

The project emissions for a reporting period are the emissions that result from carrying out the project during the reporting period.

29 Project emissions

The project emissions for a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 9***):

$$E_P = \left(\frac{PW}{EW}\right) \times \left(E_F + E_{EP}\right) + E_{PW}$$

where:

E_P means the project emissions, in tonnes CO_2-e.

PW means the quantity of putrescible eligible waste processed during the reporting period, in tonnes, worked out using equation 6.

EW means the total quantity of eligible waste received during the reporting period, in tonnes, worked out using equation 7.

E_F means the emissions from fuel used during the reporting period, in tonnes CO_2-e, worked out using equation 10.

E_{EP} means the emissions from purchased electricity used during the reporting period, in tonnes CO_2-e, worked out using equation 11.

E_{PW} means the emissions from the processing of putrescible eligible waste during the reporting period, in tonnes CO_2-e, worked out using equation 12.

30 Emissions from fuel

The emissions from fuel used during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 10***):

$$E_F = \sum_i \sum_j \frac{Q_{F,i} \times EC_i \times EF_{ij}}{1\,000}$$

where:

E_F means the emissions from fuel used during the reporting period, in tonnes CO_2-e.

$Q_{F,i}$ means the quantity of fuel type i used during the reporting period, worked out in accordance with the monitoring requirements.

EC_i means:

(a) if $Q_{F,i}$ is measured in gigajoules—1; or

(b) otherwise—the energy content factor, in gigajoules per tonne, gigajoules per kilolitre or gigajoules per cubic metre, mentioned in Part 1, 2 or 3 of Schedule 1 to the NGER (Measurement) Determination for fuel type i.

EF_{ij} means the emission factor, in kilograms CO_2-e per gigajoule, mentioned in Part 1, 2 or 3 of Schedule 1 to the NGER (Measurement) Determination for greenhouse gas type j and fuel type i.

i means a fuel type, other than biogas generated by the project.

j means a greenhouse gas type, being carbon dioxide, methane or nitrous oxide.

31 Emissions from purchased electricity

(1) The emissions from purchased electricity used during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 11***):

$$E_{EP} = Q_{EP} \times \frac{EF_{EP}}{1\,000}$$

where:

E_{EP} means the emissions from purchased electricity used during the reporting period, in tonnes CO_2-e.

Q_{EP} means the quantity of electricity purchased during the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{EP} means:

(a) for electricity obtained from an electricity grid that is a grid in relation to which the NGA Factors document in force on the relevant day includes an emissions factor—that factor, in kilograms CO_2-e per kilowatt hour; or

(b) for electricity obtained from an electricity grid not covered by paragraph (a) or from a source other than an electricity grid:

(i) if the supplier of the electricity is able to provide an emissions factor that reflects the emissions intensity of the electricity (worked out in accordance with subsection (2)) and is applicable on the relevant day—that factor, in kilograms CO_2-e per kilowatt hour; or

(ii) otherwise—the emissions factor, in kilograms CO_2-e per kilowatt hour, for off-grid electricity included in the NGA Factors document in force on the relevant day.

(2) For subparagraph (b)(i) of the definition of $\boldsymbol{EF_{EP}}$ in subsection (1), the emissions factor must be worked out:

(a) on a sent-out basis; and

(b) using a measurement or estimation approach that is consistent with the NGER (Measurement) Determination.

(3) Section 8 does not apply to the parameter EF_{EP}.

(4) In this section:

NGA Factors document means the document entitled "National Greenhouse Accounts Factors", published by the Department and as in force from time to time.

relevant day means:

(a) for a new project or an expansion project—the day the project is declared to be an eligible offsets project; or

(b) for a transitioning project—the day the first new version of the NGA Factors document that is published after the ERF commencement day comes into force.

32 Emissions from the processing of eligible waste

The emissions from the processing of putrescible eligible waste during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 12***):

$$E_{PW} = \left(\frac{PW}{TPW} \right) \times \left(E_{Compost} + E_{AD} + E_{Com} \right)$$

where:

$\boldsymbol{E_{PW}}$ means the emissions from the processing of putrescible eligible waste during the reporting period, in tonnes CO_2-e.

PW means the quantity of putrescible eligible waste processed during the reporting period, in tonnes, worked out using equation 6.

TPW means the total quantity of putrescible waste processed during the reporting period, in tonnes, worked out using equation 13.

$E_{Compost}$ means the emissions from composting processes used during the reporting period, in tonnes CO_2-e, worked out in accordance with section 34.

E_{AD} means the emissions from anaerobic digesters used during the reporting period, in tonnes CO_2-e, worked out using equation 16.

E_{Com} means the emissions from combustion devices used during the reporting period, in tonnes CO_2-e, worked out using equation 20.

33 Total quantity of putrescible waste

The total quantity of putrescible waste processed during the reporting period, in tonnes, is worked out using the formula (***equation 13***):

$$TPW = Q_{TW} - Q_{RW} - Q_{NBP}$$

where:

TPW means the total quantity of putrescible waste processed during the reporting period, in tonnes.

Q_{TW} means the total quantity of waste received during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

Q_{RW} means the quantity of residual waste disposed of during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

Q_{NBP} means the quantity of non-biobased products manufactured during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

34 Emissions from composting processes

(1) The emissions from composting processes used during a reporting period, in tonnes CO_2-e, are worked out using:

(a) if enclosed composting technology used during the reporting period includes open windrow composting—sub-method 1 (see subsection (6)); or

(b) if enclosed composting technology used during the reporting period does not include open windrow composting—subject to subsections (2) to (5) and section 46, either:

(i) sub-method 1 (see subsection (6)); or

(ii) sub-method 2 (see subsection (7)).

Note 1: Sub-method 1 uses default emissions factors to calculate emissions and sub-method 2 uses direct measurement to calculate emissions.

Note 2: If, under subsection (5), sub-method 2 must be used to calculate the emissions but the project proponent fails to monitor the parameter $DM_{Compost,j}$ as required by the monitoring requirements, the emissions are to be worked out in accordance with section 46 (see section 46).

(2) If sub-method 1 is used to work out the emissions of methane for a reporting period, that sub-method must also be used to calculate the emissions of nitrous oxide for the reporting period.

(3) Sub-method 2 may only be used to work out the emissions for a reporting period if the parameter $DM_{Compost,j}$ is monitored as required by section 45 during the reporting period.

(4) If sub-method 2 is used to work out the emissions of nitrous oxide for a reporting period, that sub-method must also be used to work out the emissions of methane for the reporting period.

(5) If sub-method 2 is used to work out the emissions of a greenhouse gas type (whether methane or nitrous oxide) for a reporting period, that sub-method must be used to calculate the emissions of that greenhouse gas type for all subsequent reporting periods.

Sub-method 1

(6) The emissions from composting processes used during the reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 14***):

$$E_{Compost} = Q_{Compost} \times EF_{Compost,j} \times \left(1 - RE_{Compost}\right)$$

where:

$E_{Compost}$ means the emissions from composting processes used during the reporting period, in tonnes CO_2-e, being methane or nitrous oxide.

$Q_{Compost}$ means the quantity of waste composted during the reporting period, in tonnes, worked out in accordance with the monitoring requirements.

$EF_{Compost,j}$ means the emissions factor, in tonnes CO_2-e, mentioned in subsection 5.22(2) of the NGER (Measurement) Determination for greenhouse gas j and the composting process.

$RE_{Compost}$ means:

(a) if a biofilter is used to filter emissions from the composting processes before release to the atmosphere—10%; or

(b) otherwise—0.

j means a greenhouse gas type, being methane or nitrous oxide.

Sub-method 2

(7) The emissions from composting processes used during the reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 15***):

$$E_{Compost} = DM_{Compost,j} \times \left(1 - RE_{Compost}\right)$$

where:

$E_{Compost}$ means the emissions from composting processes used during the reporting period, in tonnes CO_2-e, being methane or nitrous oxide.

$DM_{Compost,j}$ means the direct measurement emissions from composting processes used during the reporting period, in tonnes CO_2-e, worked out in accordance with the monitoring requirements.

$RE_{Compost}$ means:

(a) if a biofilter is used to filter emissions from the composting processes before release to the atmosphere—10%; or

(b) otherwise—0.

j means a greenhouse gas type, being methane or nitrous oxide.

35 Emissions from anaerobic digesters

The emissions from an anaerobic digester used during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 16***):

$$E_{AD} = \gamma \times \left[\left(\frac{1}{CE} - 1 \right) \times \sum_{h} M_{Sent,h} + \sum_{q} M_{Vent,q} \right]$$

where:

E_{AD} means the emissions from an anaerobic digester used during the reporting period, in tonnes CO_2-e.

γ means the factor, mentioned in subsection 5.4(1) of the NGER (Measurement) Determination, that converts cubic metres of methane to tonnes CO_2-e at standard conditions.

CE means 0.98, being the biogas collection efficiency of an anaerobic digester.

$M_{Sent,h}$ means the volume of methane sent to combustion device h, in cubic metres, worked out in accordance with section 36.

$M_{Vent,q}$ means the volume of methane vented due to major venting event q, in cubic metres, worked out using equation 19.

h means a combustion device used during the reporting period.

q means a major venting event associated with the anaerobic digester.

36 Volume of methane sent to a combustion device

(1) The volume of methane sent to a combustion device during a reporting period, in cubic metres, is worked out using:

(a) for a combustion device that is not an internal combustion engine—sub-method 1 (see subsection (2)); or

(b) for a combustion device that is an internal combustion engine—either:

(i) sub-method 1 (see subsection (2)); or

(ii) sub-method 2 (see subsection (3)).

Note: Sub-method 1 uses the volume of biogas sent to a combustion device and sub-method 2 uses the electricity produced by an internal combustion engine.

Sub-method 1

(2) The volume of methane sent to a combustion device during the reporting period, in cubic metres, is worked out using the formula (***equation 17***):

$$M_{Sent,h} = Q_{BG,h} \times W_{BG,CH_4}$$

where:

$M_{Sent,h}$ means the volume of methane sent to combustion device h, in cubic metres.

$Q_{BG,h}$ means the volume of biogas sent to combustion device h, in cubic metres, worked out in accordance with the monitoring requirements.

W_{BG,CH_4} means:

(a) if this parameter is, or is required to be, monitored continuously—the fraction worked out in accordance with the monitoring requirements; or

(b) otherwise—the fraction mentioned in subsection 5.37(2) of the NGER (Measurement) Determination.

h means:

(a) a combustion device used during the reporting period; or

(b) if a single pipe is used to send methane to more than one combustion device during the reporting period and the combustion devices are of the same kind—all of those devices.

Sub-method 2

(3) The volume of methane sent to an internal combustion engine during the reporting period, in cubic metres, is worked out using the formula (***equation 18***):

$$M_{Sent,h} = \frac{Q_{EG,h} \times F_{MWh \rightarrow GJ}}{EE_h \times EC_{BG}}$$

where:

$M_{Sent,h}$ means the volume of methane sent to internal combustion engine h, in cubic metres.

$Q_{EG,h}$ means the quantity of electricity generated by internal combustion engine h (whether supplied to the grid or used on-site), in megawatt hours, worked out in accordance with the monitoring requirements.

$F_{MWh \rightarrow GJ}$ means 3.6, being the factor to convert megawatt hours to gigajoules.

EE_h means:

(a) the factor for the electrical efficiency of internal combustion engine h determined in accordance with:

(i) the manufacturer's specifications for the combustion of biogas; and

(ii) if the specifications set out a range of such efficiencies—the highest of those efficiencies; or

(b) if no such factor can be determined in accordance with the manufacturer's specifications—36%.

EC_{BG} means the energy content factor, in gigajoules per cubic metre, mentioned in Part 2 of Schedule 1 to the NGER (Measurement) Determination for sludge biogas that is captured for combustion (methane only).

h means:

(a) an internal combustion engine used during the reporting period; or

(b) if a single pipe is used to send methane to more than one internal combustion engine during the reporting period and those engines have the same electrical efficiency—all of those engines.

37 Volume of methane vented due to a major venting event

If a major venting event associated with an anaerobic digester occurs during a reporting period, the volume of methane vented due to the major venting event, in cubic metres, is worked out using the formula (***equation 19***):

$$M_{Vent,q} = \left(MS_{BCS} + \left(FR_q \times t_q \right) \right) \times W_{BG,CH_4}$$

where:

$M_{Vent,q}$ means the volume of methane vented due to major venting event q, in cubic metres.

MS_{BCS} means the maximum biogas storage capacity of the anaerobic digester, in cubic metres, worked out in accordance with the monitoring requirements.

FR_q means the average total daily flow of biogas from the anaerobic digester for the 7 days before major venting event q, in cubic metres per day, worked out in accordance with the monitoring requirements.

t_q means the number of days for all or part of which major venting event q is uncontrolled, worked out in accordance with the monitoring requirements.

W_{BG,CH_4} means:

(a) if this parameter is, or is required to be, monitored continuously—the fraction worked out in accordance with the monitoring requirements; or

(b) otherwise—the fraction mentioned in subsection 5.37(2) of the NGER (Measurement) Determination.

q means a major venting event associated with the anaerobic digester.

38 Emissions from combustion devices

The emissions from combustion devices used during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 20***):

$$E_{Com} = \frac{\sum_{h} M_{Sent,h} \times EC_{BG} \times \sum_{j} EF_{j}}{1\ 000}$$

where:

E**Com means the emissions from combustion devices used during the reporting period, in tonnes CO_2-e.

M**Sent,h means the volume of methane sent to combustion device h, in cubic metres, worked out in accordance with section 36.

EC**BG means the energy content factor, in gigajoules per cubic metre, mentioned in Part 2 of Schedule 1 to the NGER (Measurement) Determination for sludge biogas that is captured for combustion (methane only).

EF**j means the emission factor, in kilograms of CO_2-e per gigajoule, mentioned in Part 2 of Schedule 1 to the NGER (Measurement) Determination for greenhouse gas type j and sludge biogas that is captured for combustion (methane only).

h means a combustion device used during the reporting period.

j means a greenhouse gas type, being methane or nitrous oxide.

Division 4—Method for calculating legacy abatement portions

39 Summary

Legacy abatement portions are only relevant for transitioning projects.

The legacy abatement portions are worked out by dividing into 3 equal portions the abatement resulting from the transitioning project's activities before this determination becomes the applicable methodology determination for the project. Legacy abatement portions only include abatement that has not been reflected in unit entitlement specified in a certificate of entitlement for the project.

The legacy abatement portions are used to calculate the carbon dioxide equivalent net abatement amount for the first reporting period for the project and subsequent reporting periods as the portions accrue.

40 Timing of calculation

Legacy abatement portions for a transitioning project are worked out once, during the first reporting period for the project.

41 Calculation and accrual of legacy abatement portions

(1) The legacy abatement portions for a transitioning project, in tonnes CO_2-e, are worked out using the formula (***equation 21***):

$$A_{CFI,y} = \frac{A_{CFI,N} - A_{CFI,C}}{3}$$

where:

$A_{CFI,y}$ means legacy abatement portion $A_{CFI,1}$, $A_{CFI,2}$ or $A_{CFI,3}$, in tonnes CO_2-e.

$A_{CFI,N}$ means the carbon dioxide equivalent net abatement amount, in tonnes CO_2-e, that was:

(a) the carbon dioxide equivalent net abatement amount for the project in relation to the reporting period that started when the declaration of the project as an eligible offsets project under section 27 of the Act took effect; and

(b) worked out under the applicable equation for the project that was in force for the purposes of calculating that amount for that reporting period.

$A_{CFI,C}$ means the amount that is the sum of the number of unit entitlement specified in each certificate of entitlement issued in respect of the project for each reporting period that ended before this determination became the applicable methodology determination for the project, in tonnes CO_2-e.

Note 1: $A_{CFI,N}$ will generally be the carbon dioxide equivalent net abatement amount included in the offsets report about the project for the reporting period that started when the

declaration of the project as an eligible offsets project under section 27 of the Act took effect.

Note 2: The result of subtracting $A_{CFI,C}$ from $A_{CFI,N}$ is divided by 3 because this is the number of years remaining, after 1 July 2014, in the 7-year period that started on 1 July 2010.

(2) The legacy abatement portions accrue as follows:

(a) $A_{CFI,1}$ accrues 1 year after the start of the first reporting period for the project;

(b) $A_{CFI,2}$ accrues 2 years after the start of the first reporting period for the project;

(c) $A_{CFI,3}$ accrues 3 years after the start of the first reporting period for the project.

(3) Section 8 does not apply to a calculation under this section.

(4) In this section:

applicable equation, for a transitioning project in relation to a reporting period, means:

(a) if the *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste from Landfill for Process Engineered Fuel Manufacture) Methodology Determination 2012* was the applicable methodology determination for the project during the reporting period—equation 9 of that determination; or

(b) if the *Carbon Credits (Carbon Farming Initiative) (Avoided Emissions from Diverting Legacy Waste through a Composting Alternative Waste Technology) Methodology Determination 2013* was the applicable methodology determination for the project during the reporting period—equation 11 of that determination; or

(c) if the *Carbon Credits (Carbon Farming Initiative) (Diversion of Legacy Waste to an Alternative Waste Treatment Facility) Methodology Determination 2013* was the applicable methodology determination for the project during the reporting period—equation 15 of that determination; or

(d) if the *Carbon Credits (Carbon Farming Initiative) (Enclosed Mechanical Processing and Composting Alternative Waste Treatment) Methodology Determination 2013* was the applicable methodology determination for the project during the reporting period—equation 11 of that determination.

Part 5—Reporting, record-keeping and monitoring requirements

Note: Other reporting, record-keeping and monitoring requirements are set out in regulations and rules made under the Act.

Division 1—Offsets report requirements

42 Operation of this Division

For paragraph 106(3)(a) of the Act, this Division sets out information that must be included in an offsets report about an AWT project that is an eligible offsets project.

43 Determination of certain factors and parameters

(1) If, in the circumstances described in paragraph 8(2)(b), a factor or parameter is defined or calculated for a reporting period by reference to an instrument or writing as in force from time to time, the offsets report about the project for the reporting period must include the following information for the factor or parameter:

(a) the versions of the instrument or writing used;

(b) the start and end dates of each use;

(c) the reasons why it was not possible to define or calculate the factor or parameter by reference to the instrument or writing as in force at the end of the reporting period.

(2) If a parameter is determined under section 46 for the purpose of working out the activity abatement portions for an AWT project for a reporting period, the offsets report about the project for the reporting period must include the following information for the parameter:

(a) the name of the parameter;

(b) the start and end of the non-monitored period for which the parameter was determined;

(c) the reasons why the project proponent failed to monitor the parameter as required by the monitoring requirements;

(d) either:

(i) if the parameter is $DM_{Compost,j}$—the value of the parameter $E_{Compost}$ and how that value was determined; or

(ii) otherwise—the value of the parameter and how that value was determined.

Division 2—Monitoring requirements

44 Operation of this Division

For paragraph 106(3)(d) of the Act, this Division sets out:

(a) requirements to monitor an AWT project that is an eligible offsets project (see section 45); and

(b) certain consequences if the project proponent fails to monitor the project as required (see section 46).

45 Requirements to monitor certain parameters

(1) The project proponent for an AWT project must monitor and determine a parameter set out in an item of the following table in accordance with the instructions in the item.

Monitored parameters

	Parameter	Description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
1	$DM_{Compost,j}$	Direct measurement emissions from composting processes	t	If monitored continuously, measured in a manner that is consistent with Part 1.3 of the NGER (Measurement) Determination. Frequency—if sub-method 2 must be used to calculate $E_{Compost}$ under subsection 34(5), continuous	Cumulative value for the reporting period
2	FR_q	Average total daily flow of biogas from an anaerobic digester for the 7 days before a major venting event	m^3/day	Calculated from $Q_{BG,h}$, as monitored in accordance with item 4 of this table	For each major venting event
3	MS_{BCS}	Maximum biogas storage capacity of anaerobic digesters	m^3	Either: (a) measured directly; or (b) calculated using the	At the following times: (a) when the anaerobic digesters are installed;

Section 45

Monitored parameters

	Parameter	Description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
				manufacturer's specifications for the anaerobic digesters	(b) when the anaerobic digesters are upgraded in a way that changes the storage capacity
4	$Q_{BG,h}$	Volume of biogas sent to combustion devices	m^3	Estimated in accordance with Division 2.3.6 of the NGER (Measurement) Determination. Frequency—continuous	If W_{BG,CH_4} is monitored continuously, the cumulative value for the time interval used to determine W_{BG,CH_4} for equation 17. Otherwise, the cumulative value for the reporting period
5	$Q_{C\&D}$	Quantity of eligible waste that is construction and demolition waste	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of eligible waste delivered to the AWT facility	Cumulative value for the reporting period
6	$Q_{C\&I}$	Quantity of eligible waste that is commercial and industrial waste	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of eligible waste delivered to the AWT facility	Cumulative value for the reporting period
7	$Q_{Compost}$	Quantity of waste composted	t	Measured using an accepted industry weighbridge that meets appropriate measuring	Cumulative value for the reporting period

Monitored parameters

	Parameter	Description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
				requirements. Frequency—for each load of compost produced	
8	$Q_{EG,h}$	Quantity of electricity generated by internal combustion engines (whether supplied to the grid or used on-site)	MWh	Estimated in accordance with Part 6.1 of the NGER (Measurement) Determination. Frequency—continuous	Cumulative value for the reporting period
9	Q_{EP}	Quantity of electricity purchased	kWh or GJ	Evidenced by invoices, contractual arrangements or industry metering records. If Q_{EP} is measured in gigajoules, the quantity of kilowatt hours must be calculated by dividing the amount of gigajoules by the conversion factor of 0.0036. Frequency—continuous	Cumulative value for the reporting period
10	$Q_{F,i}$	Quantity of each fuel type used	Either: (a) t (for solid fuel); or (b) m^3(for gas fuel); or (c) kL (for liquid fuel); or (d) GJ	Either: (a) monitored in accordance with section 2.25, 2.36 or Division 2.4.6 of the NGER (Measurement) Determination (as applicable to the fuel type); or (b) evidenced by invoices, contractual arrangements or industry metering	Cumulative value for the reporting period

Monitored parameters

	Parameter	Description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
				records. Frequency—continuous	
11	Q_{MSW}	Quantity of eligible waste that is municipal solid waste	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of eligible waste delivered to the AWT facility	Cumulative value for the reporting period
12	Q_{NBP}	Quantity of non-biobased products manufactured	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of non-biobased products manufactured	Cumulative value for the reporting period
13	Q_{RW}	Quantity of residual waste disposed of	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of residual waste disposed of	Cumulative value for the reporting period
14	Q_{TW}	Quantity of waste received	t	Measured using an accepted industry weighbridge that meets appropriate measuring requirements. Frequency—for each load of waste delivered to the AWT facility	Cumulative value for the reporting period
15	t_q	Number of days for all or part of	Whole days		For each major venting event

Monitored parameters

	Parameter	Description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
		which a major venting event is uncontrolled			
16	W_{BG,CH_4}	Fraction of the volume of biogas sent to combustion devices that is methane	Fraction	If monitored continuously, estimated in accordance with Division 2.3.6 of the NGER (Measurement) Determination. Frequency—subject to subsection (2), continuously or not at all	If monitored continuously: (a) for equation 17, the average value for a time interval not greater than 1 hour must be paired to measurements of $Q_{BG,h}$ for the same time interval; and (b) for equation 19, the average value for the period of 7 days before a major venting event

(2) If the project proponent decides to monitor parameter W_{BG,CH_4} continuously, the project proponent must monitor the parameter at that frequency for the remainder of the project.

Note 1: If the project proponent initially decides not to monitor the parameter continuously, the project proponent may subsequently decide to monitor the parameter continuously. However, once the project proponent decides to monitor the parameter continuously, that is how the parameter must be monitored.

Note 2: If the project proponent initially decides not to monitor the parameter continuously, the fraction mentioned in subsection 5.37(2) of the NGER (Measurement) Determination is used for the purposes of equations 17 and 19. However, if the project proponent initially or subsequently decides to monitor the parameter continuously and then, during a reporting period, fails to do so, the parameter is determined in accordance with section 46 of this determination.

(3) Any equipment or device used to monitor a parameter must be calibrated by an accredited third party technician at intervals, and using methods, that are in accordance with the manufacturer's specifications.

(4) In this section:

appropriate measuring requirements, in relation to a measurement or estimate, means requirements that are consistent with:

(a) requirements that apply in relation to similar measurements or estimates under the NGER (Measurement) Determination; or

(b) relevant standards and other requirements under the *National Measurement Act 1960*.

46 Consequences of not meeting requirement to monitor certain parameters

(1) If, during a particular period (the ***non-monitored period***) in a reporting period, a project proponent for an AWT project fails to monitor a parameter as required by the monitoring requirements, the value of the parameter for the purpose of working out the activity abatement portions for the reporting period is to be determined for the non-monitored period in accordance with the following table.

Consequence of not meeting requirement to monitor certain parameters

Item	Parameter	Determination of parameter for non-monitored period
1	W_{BG,CH_4} (see subsection 36(2) and section 37)	The parameter is: (a) for any cumulative period of up to 3 months in any 12 months of a crediting period for the project—the amount set out in section 5.14C of the NGER (Measurement) Determination multiplied by 1.1; and (b) for any period in excess of that 3 months—the amount set out in section 5.14C of the NGER (Measurement) Determination multiplied by 1.5
2	Each of the following: (a) FR_q (see section 37); (b) $Q_{BG,h}$ (see subsection 36(2)); (c) $Q_{Compost}$ (see subsection 34(6)); (d) $Q_{EG,h}$ (see subsection 36(3)); (e) Q_{EP} (see subsection 31(1)); (f) $Q_{F,i}$ (see section 30); (g) t_q (see section 37)	The project proponent must make a conservative estimate of the parameter having regard to: (a) any relevant measurement or estimation approaches or requirements that apply to the parameter under the NGER (Measurement) Determination; and (b) any relevant historical data for the project; and (c) any other data for the project that relates to the parameter; and (d) any other matter the project proponent considers relevant

(2) If, during the non-monitored period, the project proponent fails to monitor parameter $DM_{Compost,j}$ as required by the monitoring requirements, the emissions ($E_{Compost}$) from enclosed composting technology used during the non-monitored period, in tonnes CO_2-e, are worked out as follows:

(a) for any cumulative period of up to 3 months in any 12 months of a crediting period for the project—using sub-method 1 in subsection 34(6), but multiplying the parameter $EF_{Compost,j}$ by 1.1; and

(b) for any period in excess of that 3 months—using sub-method 1 in subsection 34(6), but multiplying the parameter $EF_{Compost,j}$ by 1.5.

(3) To avoid doubt, this section does not prevent the Regulator from taking action under the Act, or regulations or rules made under the Act, in relation to the project proponent's failure to monitor a parameter as required by the monitoring requirements.

Note: Examples of action that may be taken include the following:

(a) if the failure constitutes a breach of a civil penalty provision in section 194 of the Act (which deals with project monitoring requirements), the Regulator may apply for a civil penalty order in respect of the breach;

(b) if false or misleading information was given to the Regulator in relation to the failure, the Regulator may revoke the project's section 27 declaration under regulations or rules made for the purposes of section 38 of the Act;

(c) if the giving of false or misleading information in relation to the failure led to the issue of Australian carbon credit units, the Regulator may require all or some of those units to be relinquished under section 88 of the Act.