BIDCARBON™

BCM001

BidCarbon (Pyrogenic Carbon Capture and Storage in Agricultural Systems) Methodology and Data Asset Value

made under subsection 90.(1) of the
BidCarbon (Carbon Farming) Standard 2025

Dated:	20 March 2026
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Statement on the Use of Artificial Intelligence

In the preparation of this document, namely the BidCarbon (Pyrogenic Carbon Capture and Storage in Agricultural Systems) Methodology and Data Asset Value, artificial intelligence (AI) tools were utilised in a supporting capacity.

AI-assisted processes contributed to approximately 30 per cent of the drafting activities, including, but not limited to, formula calibration, logical structuring, linguistic refinement, and multilingual translation. Such use was undertaken solely for the purpose of enhancing drafting efficiency and technical clarity.

Notwithstanding the foregoing, all substantive technical content, the methodological framework, and the conclusions set out in this document have been subject to independent review and validation by the authoring team. The authoring team retains full responsibility for the integrity, completeness, accuracy, and regulatory compliance of this document.

In light of the ongoing development of digital technologies, it is considered appropriate that the carbon market and its associated methodologies explore the potential application of such technologies to enhance reliability, transparency, and usability.

Accordingly, a pilot programme is intended to be undertaken in the People's Republic of China for the application of AI-enabled interpretative functions in relation to this methodology. The purposes of this pilot programme are:

(a) to collect empirical data from practical application, for the purpose of assessing the performance of such AI-enabled interpretative functions in real-world conditions, including their accuracy, operational practicality, and any identified limitations; and

(b) to inform the development of an appropriate governance framework, thereby supporting the future regulation, certification, and integration of such AI tools within existing legal and standardisation systems.

For the avoidance of doubt, any outputs generated through such AI-enabled interpretative functions shall be treated as non-authoritative and shall not form part of this methodology unless and until formally incorporated following further review and approval.

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1. Name

This methodology is the BidCarbon (Pyrogenic Carbon Capture and Storage in Agricultural Systems) Methodology and Data Asset Value.

2. Commencement

This methodology commences on the day after it is registered.

3. Authority

This methodology is made under subsection 90.(1) of the BidCarbon (Carbon Farming) Standard 2025.

4. Duration

This methodology remains in force for the period that:

(1) begins when this methodology commences; and

(2) unless this methodology is sooner revoked, ends on the day before it would otherwise be repealed under subsection (3);

(3) this subsection repeals a methodology on the first 1 October falling on or after the tenth anniversary of registration of the methodology.

5. Definitions

In this methodology:

(1) ***Accredited Data Service Providers*** —see subsection 90.(2).

(2) ***accredited AWT facility*** has the meaning given by Division 3 of Part 2 of the BPS Standard.

(3) ***activity area*** means the area that contains the specific location or locations at which a source separation activity is implemented.

Note: The activity area for a source separation activity must be in one State (or similar division) or Territory only (see subsection 17.(1)).

(4) ***Aboriginal land council*** has the meaning given by the Carbon Farming Standard.

(5) ***agricultural waste*** has the meaning given by subsection 7.(1) of the BPS Rule.

(6) ***APMP*** means the Asia Pacific Metrology Programme.

(7) ***applicable carbon sequestration right*** has the meaning given by the Carbon Farming Standard.

(8) ***application*** means one of the following:

(a) if a proponent is applying to the Working Body for declaration of a PyCCS project as an eligible offsets project under section 22 of the Carbon Farming Standard—that application;

(b) if a proponent is applying to vary a declaration in relation to the project area for the purposes of section 29 of the Carbon Farming Standard—that application.

(9) ***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 Weights and Measures Codes of Practice; or

(b) relevant standards and other requirements under the Weights and Measures Act 1985, or similar legislation issued by other countries.

(10) ***AWT facility*** or ***alternative waste treatment facility*** has the meaning given by the BPS Standard.

(11) ***agricultural waste activity*** has the meaning given by subsection 15.(3).

(12) ***Average Quantity System*** or **AQS** —see subsection 107.(1).

(13) ***AQS mark*** has the meaning given by section 1.2 of the Biochar Trade Rule.

(14) ***AQS biochar*** has the meaning given by section 1.2 of the Biochar Trade Rule.

(15) ***aggregated waste diversion activity*** has the meaning given by section 14.

(16) ***affected by closedowns*** —see the table in subsection 27.(2).

(17) ***bare fallowed***, in relation to land, means land that is not seeded and has less than 40% ground cover for 3 months or longer.

(20) ***belt weighers*** means the continuous totalising automatic weighing instruments.

(21) ***BidCarbon Mapping Guidelines*** means the BidCarbon Carbon Farming (BCF) Mapping Guidelines.

(22) ***BidCarbon Permanence Factor Calculator*** means the tool developed for estimating the permanence of biochar carbon storage. It may be used for trial calculations and is adapted from the Biochar Carbon Storage Persistence Calculator developed by the Swedish University of Agricultural Sciences (SLU).

Note : The website address for downloading the BidCarbon Persistence Coefficient Calculator is https://www.bidcarbon.org/document-F-C2024002D010.

(23) ***biochar*** means defined as a solid material generated by heating biomass to a temperature in excess of 350°C under conditions of controlled and limited oxidant concentrations to prevent combustion. These processes can be classified as either pyrolysis technology (in which oxidants are excluded), or gasification technology (in which oxidant concentrations are low enough to generate syngas).

(24) ***biochar type*** —see Table 2 in subsection 50.(2).

(25) ***biobased product*** means a product that:

(a) is manufactured by a waste treatment facility or unit; and

(b) contains material that was previously waste biomass type diverted from source by a source separation activity; and

(c) has been produced to a saleable quality.

Note: The BioPreferred® Programme of the United States Department of Agriculture designates categories of biobased products which are eligible for federal procurement preference, including the following:

(a) compost;

(b) landscape mulch;

(c) mine site remediation material;

(d) soil conditioner (including biochar).

(26) ***biochar production emission activity*** has the meaning given by subsection 5.(1) of the BPS Standard.

(27) ***biochar production systems*** has the same meaning as in the BPS Rule.

(28) ***Biochar Trade Rule*** means the Biochar Trade Measurement (Packaging) Rule 2025.

Note : For further information, please visit this methodology website at https://www.bidcarbon.org/methods-bcm001.

(29) ***biomass*** means organic matter other than fossilised biomass.

Examples of fossilised biomass: Coal, lignite.

(30) ***BITP 6*** means the BidCarbon Instrument Test Procedures for Non-automatic Weighing instruments.

(31) ***BITP 7*** means the BidCarbon Instrument Test Procedures for Continuous Totalising Automatic Weighing Instruments (Belt Weighers).

(32) ***BPS Standard*** means the Biomass Energy (Biochar Production Systems) Standard 2025.

Note: Any amendments affecting must be made available on the Standard Register (www.bidcarbon.org/standard-register).

(33) ***BPS Rule*** means the Biomass Energy (Biochar Production Systems) Rule 2025.

Note: Any amendments affecting must be made available on the Standard Register (www.bidcarbon.org/standard-register).

(34) ***CEA*** or ***carbon estimation area*** —see subsection 1.(1) of Schedule 1.

Note: A carbon estimation area may consist of a single area of land with an unbroken perimeter or of several adjacent or non-adjacent, discrete areas of land of differing sizes and shapes—see section 20.

(35) ***Carbon Farming Standard*** means the BidCarbon (Carbon Farming) Standard 2025.

Note: Any amendments affecting must be made available on the Standard Register (www.bidcarbon.org/standard-register).

(36) ***carbon storage***, in relation to greenhouse gases, means storage of the greenhouse gases in a CEA or non-CEA:

(a) in accordance with the relevant authority and any applicable Country, State (or similar division) or Territory legislation governing the use of the CEA or non-CEA; and

(b) in a way that the greenhouse gases would not be released into the atmosphere.

(37) ***clearing*** means the conversion of land with forest cover to land without forest cover through the destruction of trees or saplings by intentional burning, mechanical or chemical means.

(38) ***CO_2-e*** means the GWP of greenhouse gas emissions expressed as carbon dioxide equivalent.

(39) ***commercial and industrial waste*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(40) ***construction and demolition waste*** means waste generated from construction and demolition activities.

(41) ***cover crop*** means a crop that is planted for the purposes of improving the soil by providing ground cover.

(42) ***charity diversion activity*** has the meaning given by section 16.

(43) ***cropping*** means using land to grow agricultural crops for commercial purposes.

Note : Cropping includes growing woody horticulture such as vines in vineyards but does not include planting forests.

(44) ***Data Service Provider*** for a State (or similar division) or Territory, means a third-party service provider who engages in the activity of owning, controlling or operating an Data Management System in the State (or similar division) or Territory.

(45) ***determination of mass for commercial transactions*** means which deals with commercial transactions where goods are bought or sold by mass.

Note: For example: using a weighing instrument to weigh a load of timber.

(46) ***diverted from source*** means:

(a) diverted from landfill; or

(b) separated at the point of waste generation and transports to a waste treatment facility or unit.

(47) ***dry matter*** has the meaning given by the Fuel Supply Handbook for Biomass-Fired Power Projects. It was published by the World Bank Group on 2 September 2010.

Note: The Fuel Supply Handbook for Biomass-Fired Power Projects website was http://documents.worldbank.org/curated/en/546111468019170010/China-Biomass-Cogeneration-Development-Project-fuel-supply-handbook-for-biomass-fired-power-projects

(48) ***eligible land***—see subsection 18.(1).

(49) ***eligible biochar baseline*** has the meaning given by subsection 5.(1) of the BPS Standard.

(50) ***eligible waste treatment technology*** has the meaning given by subsection 5.(1) of the BPS Standard.

(51) ***eligible management activity***— see subsection 8.(4).

(52) ***emissions accounting area***—see subsection 1.(6) of Schedule 1.

(53) ***energy crops*** has the meaning given by section 10 of the BPS Rule.

Note 1: This category comprehends non-food, lignocellulosic crops, belonging to the 2nd generation feedstock. Species included are both herbaceous and woody: miscanthus, switchgrass, reed canary, giant reed, cardoon, willow, poplar and eucalyptus.

Note 2: Crops that are unsuitable for human or animal consumption and are grown exclusively or primarily for the purpose of producing biomass for energy purposes in an agricultural rather than a forestry context.

(54) ***exclusion area***—see subsection 1.(5) of Schedule 1.

(55) ***expansion waste diversion activity*** has the meaning given by section 13.

(56) ***fertiliser*** means any synthetic or non-synthetic substance that supplies key chemical elements to plants and soils to enhance plant growth and the fertility of soils.

(57) ***forestry residues*** has the meaning given by the BidCarbon Standard Biochar for Soils.

Note : For details on the BidCarbon Standard Biochar for Soils, please visit: https://www.bidcarbon.org/methods-bcm001

(58) ***fuel*** means a substance mentioned in column 2 of an item in Schedule 1 to the GHGR Rule other than a substance mentioned in items 58 to 66.

(59) ***garden and park*** or ***garden*** means waste includes whole trees and tree trimmings, and possibly some wood products such as fence posts or other wood products used in gardens or parks.

(60) ***gasification*** has the meaning given by subsection 2.(1) of the BPS Rule.

(61) ***gasification technology*** has the meaning given by subsection 2.(1) of the BPS Rule.

(62) ***GHGR Rule*** means the Greenhouse Gas Reporting Rule 2025.

(63) ***government body*** means the Country, a State, a Territory or an authority of the Country or of a State (or similar division) or Territory.

(64) ***GWP*** means the global warming potential of greenhouse gases.

(65) ***GWP_{N2O}*** means the global warming potential value of AR6 for nitrous oxide set out in section 2.2 of the GHGR Rule.

(66) ***gypsum*** means a product which is mainly composed of calcium sulfate dihydrate ($CaSO_4 \cdot 2H_2O$) and is used to manage soil sodicity or magnesic properties, or improve the structure of sodic clay soils.

(67) ***high-scale technology*** has the meaning given by subsection 2.(1) of the BPS Rule.

(68) ***high temperature*** means ≥600 °C.

(69) ***hypersulfidic material*** has the meaning given by the Australian Soil Classification (Second Edition) published by the Commonwealth Scientific and Industrial Research Organisation in 2016.

Note: In 2018, the second edition of the Australian Soil Classification could be accessed from http://www.clw.csiro.au/ with the glossary available at http://www.clw.csiro.au/aclep/asc_re_on_line_V2/soilglos.htm#br

(70) ***IBM® Envizi ESG Suite Emission Factors document*** means the management of all publicly available emissions factors by the IBM® Envizi ESG Suite, with data originating from 'emissions factor' files published by certain countries or organisations, which are subject to revision or update and take effect upon such changes.

Note: The IBM® Envizi ESG Suite Emissions Factors document website is located at https://www.ibm.com/docs/en/envizi-esg-suite?topic=reference-emission-factors

(71) ***ILAC*** means the International Laboratory Accreditation Cooperation- Mutual Recognition Arrangement.

(72) ***inert waste*** means waste materials that contain no more than a negligible volume of degradable organic carbon and includes the following waste:

(a) concrete;

(b) metal;

(c) plastic;

(d) glass;

(e) asbestos concrete;

(f) soil.

(73) ***information asset*** has the meaning given by the Guide to developing a data inventory.

(74) ***intention notice time*** has the meaning given by subsection 32.A.(6).

(75) ***inspection lot*** has the meaning given by section 1.2 of the Biochar Trade Rule.

(76) ***ineligible non-synthetic fertiliser***: a non-synthetic fertiliser is ineligible if it includes biomass that does not satisfy one of the following:

(a) the biomass previously formed part of a source separation activity;

(b) the biomass is sourced from within a carbon estimation area that is part of the project.

(77) ***irrigation infrastructure operator*** means a water service infrastructure is operated for the purposes of delivering water for the primary purpose of being used for irrigation:

(a) each infrastructure operator for the water service infrastructure is an irrigation infrastructure operator ; and

(b) the water service infrastructure is the irrigation network of each of those irrigation infrastructure operators.

(78) ***irrigation right*** means a right that:

(a) a person has against an irrigation infrastructure operator to receive water; and

(b) is not a water delivery right.

(79) ***irrigation efficiency savings*** means improvements to the efficiency of irrigated water that:

(a) results from improving the efficiency of one or both of the following:

(i) on-farm irrigation infrastructure;

(ii) management practices; and

(b) are not achieved by new or upgraded on-farm irrigation infrastructure funded by a Country, State (or similar division) or Territory program.

(80) ***laboratories licensed by the laboratory*** means an accredited laboratory licensed by the charity and such accreditation must be provided by a governmental authority or an ILAC member.

Note: The charity confers no endorsement or quality assurances regarding these laboratories, nor does it make any claims regarding the validity of the laboratory or its test results.

(81) ***land management strategy***—see subsection 25.(1).

(82) ***small-scale technology*** has the meaning given by subsection 2.(1) of the BPS Rule.

(83) ***low temperature*** means 350−450 °C.

(84) ***maintain***: maintaining a eligible management activity at a point in time includes the circumstance where a completed eligible management activity has a continuing impact on the storage of additional soil organic carbon in the land at that point in time.

(85) ***material deficiency*** means a concentration of one or more nutrients in the soil, where the concentration limits plant growth to 70% or less of the water limited yield potential, or of the water limited potential annual pasture growth, which could have been achieved.

Note: A material deficiency is assessed by a qualified person in accordance with industry best practice nutrient management.

(86) ***medium temperature*** means 450–600 °C.

(87) ***methane*** or ***CH_4*** means a potent GHG consisting of a single carbon atom and four hydrogen atoms.

(88) ***monitoring requirements*** means the requirements set out in Subdivision B of Division 3 of Part 5.

(89) ***municipal garden and park waste activity*** has the meaning given by subsection 15.(4).

(90) ***municipal solid waste*** or ***MSW*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(91) ***native forest*** means a local indigenous plant community:

- (a) the dominant species of which are trees; and
- (b) containing throughout its growth the complement of native species and habitats normally associated with that forest type or having the potential to develop those characteristics; and
- (c) including a forest with those characteristics that has been regenerated with human assistance following disturbance; and
- (d) excluding a plantation of native species or previously logged native forest that has been regenerated with non-endemic native species.

(92) ***Navigation Satellite System*** has the meaning given by the Supplement.

(93) ***net abatement amount***, for an eligible offsets project in relation to a reporting period, means the carbon dioxide equivalent net abatement amount for the project in relation to the reporting period for the purposes of paragraph 90.(1)(c) of the Carbon Farming Standard (see also section 41 of this methodology).

(94) ***network*** or ***network of facilities or units*** means two or more waste treatment facilities or units that form a network if:

- (a) each facility or unit is capable of producing biochar using a particular supply (the relevant supply) of a waste biomass type; and
- (b) the production of biochar at each such facility or unit, using the relevant supply, is capable of being coordinated in such a way as to enable a greater number of BidCarbon Removal Units to be created in respect of the total biochar produced during a year than would otherwise be created.

(95) ***new irrigation*** means applying new or additional irrigation to land which involves obtaining water from irrigation efficiency savings made after the declaration of the project, which may occur within the carbon estimation area on which the new or additional irrigation is carried out.

(96) ***new waste diversion activity*** has the meaning given by section 12.

(97) ***nominal quantity*** has the meaning given by section 1.2 of the Biochar Trade Rule.

(98) ***nominated waste treatment facility or unit***, for a source separation activity that is implemented by an PyCCS project, means a waste treatment facility or unit at which waste biomass type diverted from source by the activity will be processed, nominated as such in:

- (a) the application made under section 22 of the Carbon Farming Standard in relation to the project; or
- (b) a notification given to the Working Body by the project proponent under section 78 of this methodology.

(99) ***non-monitored period*** has the meaning given by subsection 96.(1).

(100) ***non-carbon estimation area*** *or* ***non-CEA*** means an area outside the project area that is not part of the carbon estimation area, where land management activity, as described in subparagraph 8.(4)(a)(i), are carried out.

Note: The non-carbon estimation area is not subject to the requirements of Subdivision B of Division 1 of Part 3.

(101) ***non-synthetic fertiliser*** means any biologically-derived solid or liquid substance that:
- (a) where relevant—must be applied to the surface of, or incorporated into, agricultural soils in accordance with the laws and regulations of the relevant State (or similar division), Territory or local government; and
- (b) is used to do one or both of the following:
  - (i) supply nutrients to plants and soils;
  - (ii) enhance plant growth and soil fertility; and
- (c) does not include:
  - (i) non-biodegradable substances, such as plastics, rubber or coatings; or
  - (ii) ineligible non-synthetic fertiliser; or
  - (iii) biochar.

(102) ***nutrient*** means one or more of the following elements:
- (a) nitrogen;
- (b) phosphorus;
- (c) potassium;
- (d) sulphur.

(103) ***off-taker*** means a person who purchases AQS biochar through an e-commerce transaction from a retailer, and who:
- (a) holds a legal or equitable estate or interest that constitutes a applicable carbon sequestration right in relation to land; and
- (b) the land referred to in paragraph (a) may be:
  - (i) recognised land; or
  - (ii) non-recognised land; and
- (c) the land referred to in paragraph (a) may be located within a carbon estimation area, an emissions accounting area, or a non-carbon estimation area; or
- (d) is a responsible landholder in relation to land within a carbon estimation area.

Note: For the purposes of this methodology, the owner or operator of a waste treatment facility or unit is not precluded from being an off-taker.

(104) ***OIML*** means the International Organization of Legal Metrology (Organisation Internationale de Métrologie Légale, OIML), 11, rue Turgot, F-75009 Paris, France.

(105) ***organic waste*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(106) ***original activity*** has the meaning given by subsection 31.(1).

(107) ***packaging*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(108) ***pasture*** means land that is continuously under any combination of perennials, annual grasses, or legumes, and on which production livestock is raised.

(109) ***permanent pasture*** means agricultural land that is:
- (a) continuously under pasture, including perennials and annual grasses and legumes; and
- (b) not bare fallowed.

(110) ***plantation*** means an intensively managed stand of trees of native or exotic species, created by the regular placement of seedlings or seed.

(111) ***potential activity*** has the meaning given by subsection 31.(2).

(112) ***primary processing waste activity*** has the meaning given by subsection 15.(2).

(113) ***Prepackaged Register*** has the meaning given by section 1.62 of the Biochar Trade Rule.

(114) ***primary processing waste*** means waste from processing of agricultural products.

(115) ***project declaration date*** means the date on which the declaration of a PyCCS project as an eligible offsets project under section 27 of the Carbon Farming Standard takes effect.

(116) ***project waste biomass type*** means a waste biomass type that is collected by the project at a network of facilities or units, and that is processed, comminuted and transportation for the purpose of carbon storage by the project, without being co-mingled with any waste that is processed, comminuted and transported for a purpose other than being carbon storage.

(117) ***project*** means a PyCCS project.

(118) ***production livestock*** means livestock managed for production purposes and from which commercial products or services are derived.

(119) ***prepackaged product*** has the meaning given by section 1.2 of the Biochar Trade Rule.

(120) ***PyCCS project*** (Pyrogenic Carbon Capture and Storage project) has the meaning given by subsection 8.(5).

(121) ***PyCCS project plan*** has the meaning given by subsection 10.(2).

(122) ***pyrolysis technology*** has the meaning given by subsection 2.(1) of the BPS Rule.

(123) ***qualified person*** means a person who:

(a) natural person:

(i) have knowledge of agronomy and plant nutrition; and

(ii) have experience in the provision of agricultural production advice; and

(iii) have a good understanding of the influence of agricultural management on soil carbon; and

(iv) have no financial interest in the PyCCS project; and

(v) meet any requirements included in the Supplement.

Note: Being paid for preparing a land management strategy would not involve a breach of subparagraph (iv).

(b) BidCarbon Artificial Intelligence (AI) Interpretation Function.

Note: At present, the function is supported by artificial intelligence models, including DeepSeek, and is being piloted in China. Use of the function requires access through a WeChat mini-program.

(124) ***qualified small-scale technology unit*** means a small-scale technology unit registered in the Register of small-scale technology units.

(125) ***recognised land*** means an basic agricultural land in accordance with a recognised law of a State (or similar division) or Territory.

(126) ***recognised law of a State (or similar division) or Territory*** means a law that makes provision for regulating the implementation and carbon storage of biochar in a recognised land in that State (or similar division) or Territory. It must meet, or be part of a legislative framework that in combination meets, the following criteria:

(a) the law or legislative framework requires the owners or operators of proposed projects to provide detailed assessments and technical specifications of the proposed land to the person or body responsible for the administration of that law or framework. These must include the estimated sequestration capacity and the ability to use the land for carbon storage and biochar implementation;

(b) the law or legislative framework imposes requirements, or requires conditions to be imposed on or in relation to the recognised licence, about the biochar to be implementation, including technical specifications of the typology and eligible waste treatment technology of the PyCCS projects;

(c) the law or legislative framework requires monitoring and regular reporting of biochar intended for use in land for carbon storage, at a minimum for the duration of the relevant authority;

(d) the law or legislative framework requires all risks to public health and the surrounding environment to be identified in a detailed assessment;

(e) the law or legislative framework requires mitigation and management strategies to be developed and implemented to address identified risks;

(f) the law or legislative framework establishes criteria for when a proposed project will be required to be notified widely and be subject to public consultation;

(g) the law or legislative framework requires relevant stakeholders to be advised of the proposed project;

(h) the law or legislative framework provides for site plans (however described) of the proposed project to be regularly reviewed by the person or body responsible for the administration of that law or framework periodic reports regarding project operations to be provided to that person or body.

(127) ***recognised licence*** means an authorisation (however described) issued to use an eligible waste treatment technology, issued to a person under a recognised law of a State (or similar division) or Territory.

(128) ***registered charity*** means an entity that is registered under:

(a) the Companies Act 2006; or

Note : Including social enterprises.

(b) the Charities Act 2011; or

(c) a foreign law that corresponds to a law mentioned in paragraphs (a) and (b).

(129) ***registered aboriginal corporation*** has the same meaning as in the Carbon Farming Standard.

(130) ***relevant authority*** means, for an PyCCS project accordance with a recognised law of a State (or similar division) or Territory, a recognised licence issued under that law.

(131) ***responsible landholder*** means any person who, whether by reason of ownership or otherwise, has operational control, of the relevant land.

(132) ***responsible environmental protection agency***, for a State (or similar division) or Territory, means:

(a) if a government agency responsible for environmental protection in the State (or similar division) or Territory notifies the Regulator, in writing, that it is the only responsible soil agency for the State (or similar division) or Territory for the purposes of this definition—that agency; or

(b) if paragraph (a) does not apply—a government agency responsible for environmental protection in the State (or similar division) or Territory; or

(c) if neither paragraph (a) nor (b) applies, the Chief Executive Officer of the Aboriginal land council.

(133) ***saleable quality*** has the meaning given by subsection 47.(1) of the BPS Rule.

(134) ***scope 1 emissions*** and ***scope 2 emissions*** have the same meaning as in the Greenhouse Gas Reporting Standard.

(135) ***section 22 application***, in relation to an eligible offsets project, means the application under section 22 of the Carbon Farming Standard for the declaration of the project as an eligible offsets project.

(136) ***section 27 declaration***, in relation to an eligible offsets project, means the declaration under section 27 of the Carbon Farming Standard that the project is an eligible offsets project.

(137) ***section 29 application***, in relation to an area of land, means an application made under requirements or principles made for the purposes of section 29 of the Carbon Farming Standard to vary a section 27 declaration in relation to the area.

(138) ***section 99 application***, in relation to an eligible offsets project, means a request under subsection 99 (1) of the Carbon Farming Standard to approve the application of this methodology to the project with effect from the start of a reporting period.

(139) ***separated at the point of waste generation*** has the meaning given by section 6.

(140) ***shortfall*** —see section 7 of Schedule 2.

(141) ***small-scale technology unit*** has the meaning given by subsection 2.(2) of the BPS Rule.

(142) ***soil organic carbon*** means the carbon contained within soil organic matter, other than mineralised carbon.

(143) ***soil amendment*** means a substance to improve the health or quality of soil, such as fertiliser, biochar, gypsum or recycled organic materials.

(144) ***soil*** means the unconsolidated mineral or organic matter on the surface of the earth that has been subjected to and shows effects of genetic and environmental factors of: climate (including water and temperature effects), and macro- and microorganisms, conditioned by relief, acting on parent material over a period of time (ENVASSO, 2008).

(145) ***solid waste*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(146) ***source separation activity*** has the meaning given by subsection 9.(3).

(147) ***source separation bin*** means an area intended for the stockpiling of:

(a) a particular waste biomass type; or

(b) a particular combination of waste biomass type.

(148) ***source separation*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(149) ***stratum*** means an area in a carbon estimation area.

(150) ***stubble*** means the residue remaining on the soil surface after a crop has been harvested and prior to application of any management practice that incorporates the residues into the soil.

(151) ***stubble removal event*** means burning or baling that:

(a) occurs in a carbon estimation area that is under crops; and

(b) removes stubble from the area.

(152) ***subactivity*** has the meaning given by subsection 14.(2).

(153) ***substitute newness requirement*** has the meaning given by subsections 32.A.(2) and (3).

(154) ***Supplement*** means the document entitled 'The Supplement—for Pyrogenic Carbon Capture and Storage in Agricultural Systems', as amended from time to time and made available on this methodology website.

Note : This methodology website was https://www.bidcarbon.org/methods-bcm001

(155) ***surface soil*** means a depth of 0-10 centimetres.

(156) ***statutory declaration*** has the same meaning as in the Carbon Farming Standard.

(157) ***Sampling and Testing Procedures*** means the Sampling and Test Procedures for Prepackaged Products.

Note : For further information, please visit this methodology website at https://www.bidcarbon.org/methods-bcm001.

(158) ***synthetic fertiliser*** means any synthetic substance that:

(a) is used to supply nutrients to plants and soils to enhance plant growth and the fertility of soils; and

(b) where relevant—must be applied to the surface of, or incorporated into, agricultural soils in accordance with the laws of the relevant State (or similar division), Territory or local government; and

(c) does not include biochar.

(166) ***thinning*** has the meaning given by subsection 2.(1) of the BPS Rule.

(167) ***tillage*** means any form of mechanical preparation of the soil.

(168) ***transferring project*** means a PyCCS project to which this methodology applies as a result of an approval under section 101 of the Carbon Farming Standard.

(169) ***transportation*** includes conveyance, and ***transports*** has a corresponding meaning.

(170) ***TLUD stove*** means a Top-Lit UpDraft stove that converts biomass into cooking gas and biochar, producing lower GHG and particulate emissions than traditional cooking.

(171) ***user satisfaction surveys*** is part of the data quality, and potentially user feedback could be integrated into the planning process of monitoring requirements.

(172) ***waste treatment facility or unit*** or ***facility or unit*** has the meaning given by subsection 5.(1) of the BPS Standard.

(173) ***waste audit*** means a waste audit undertaken in accordance with section 98.

(174) ***waste biomass type*** means any of the types of biomass specified in paragraphs (i) to (q) of the definition of eligible renewable energy source in subsection 20.(1) of the BPS Standard.

(175) ***waste from processing of agricultural products*** has the meaning given by subsection 7.(5) of the BPS Rule.

(176) ***waste management*** has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

(177) ***waste*** means a material which has been purchased and paid for but which has not been turned into a marketable product.

(178) ***waste stream*** means an organic waste-stream from one of the following:

- (a) intensive animal production;
- (b) manufacturing;
- (c) primary processing waste;
- (d) sawmill residue;
- (e) municipal solid waste or commercial and industrial waste collection processes (other than processes involving human effluent).

(179) ***water access entitlement*** means a perpetual or ongoing entitlement, by or under a law of a State (or similar division), to exclusive access to a share of the water resources of a water resource plan area.

(180) ***water allocation*** means the specific volume of water allocated to water access entitlements in a given water accounting period.

(181) ***water delivery right*** means a right to have water delivered by an infrastructure operator.

(182) ***weighing instrument*** means a non-automatic weighing instrument, including a hanging scale, that may be used for trade and is not a road or rail weighbridge.

(183) ***weighted average quantity*** see section 5 of Schedule 2.

(184) ***Weights and Measures Codes of Practice*** means the Greenhouse Gas Reporting (Weights and Measures) Codes of Practice 2025.

Note: Any amendments affecting must be made available on the Standard Register (www.bidcarbon.org/standard-register).

(185) ***wetland*** has the same meaning as in the Ramsar Convention.

(186) ***wood waste*** has the same meaning as in the BPS Rule.

(187) ***wood and wood waste activity*** has the meaning given by subsection 15.(5).

(188) ***woody vegetation*** means trees and shrubs.

Note : Other words and expressions used in this methodology have the meaning given by the Carbon Farming Standard. These terms include:

BidCarbon Removal Unit
carbon abatement
Carbon Data Rights Certificate
carbon dioxide equivalent
crediting period
eligible carbon credit unit
eligible carbon abatement
eligible offsets project
emission

greenhouse gas
offsets project
offsets report
permanence period
project
project area
project proponent
quarter
reporting period
Taxpayer Identification Number
Working Body

6. Meaning of *separated at the point of waste generation*

(1) Subject to subsection (2), waste is ***separated at the point of waste generation*** if:
  (a) the waste is disposed of into a source separation bin located where the waste is generated; and
  (b) the waste consists of a waste biomass type that the bin is intended to contain.

(2) For the purposes of a charity diversion activity, agricultural waste or wood waste is ***separated at the point of waste generation*** if the agricultural waste or wood waste is separated from other waste at the location where the waste is generated.

7. References to factors and parameters from external sources

(1) If a calculation in this methodology 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.

Note: This means that calculations using historical data for a reporting period may not be correct for later reporting periods because reference instruments might have changed.

(2) Subsection (1) does not apply if:
  (a) this methodology 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.

(3) For the purposes of this methodology, EF_{elec} means the emission factor for electricity, in kilograms of carbon dioxide equivalent per kilowatt-hour (kg CO_2-e/kWh), determined as follows:
  (a) for electricity obtained from an electricity grid that is a grid in relation to which the IBM® Envizi ESG Suite Emission Factors document includes an emissions factor—that factor, in kilograms CO_2-e per kilowatt hour (or its equivalent of tonnes CO_2-e per megawatt hour); or
  (b) for electricity obtained from an electricity grid not covered by paragraph (a) or obtained 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 (4))—that factor, in kilograms CO_2-e per kilowatt hour (or its equivalent of tonnes CO_2-e per megawatt hour); or
    (ii) otherwise—the emissions factor, in kilograms CO_2-e per kilowatt hour (or its equivalent of tonnes CO_2-e per megawatt hours), for off-grid electricity included in the IBM® Envizi ESG Suite Emission Factors document in force at the end of the reporting period.

(4) For subparagraph (b)(i) of the definition of (EF_{elec}) in subsection (3), 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 Weights and Measures Codes of Practice.

(5) If the Weights and Measures Codes of Practice does not include any relevant measurement or estimation approach, the emissions factor must be worked out in a manner that is consistent with relevant standards and other requirements under:

(a) reporting and disseminating information relating to greenhouse gas emissions or greenhouse gas projects under any other law of the Country or of a State (or similar division) or Territory; or

(b) emissions trading under a law of the Country or of a State (or similar division) or Territory.

Part 2—PyCCS projects

8. PyCCS projects

(1) For paragraph 90.(1)(a) of the Carbon Farming Standard, this methodology applies to an offsets project that satisfies the following:

Carbon capture, processing and production

(a) the projects involve the implementation of one or more source separation activity to separate eligible organics from the point of waste generation; and

(b) eligible organics are transported to:

(i) an waste treatment facility or unit for processing into biochar; or

(ii) a biomass pellet facility where biomass is processed into pellets using eligible waste treatment technology, which are supplied to a waste treatment facility or unit for use as fuel, with biochar recovered as a by-product.

Carbon storage

(c) involves the sequestering of biochar in soil in an agricultural system must be carried out in accordance with subsection (4) or by adding additional eligible management activity; and

(d) can reasonably be expected to result in eligible carbon abatement; and

(e) has its project area is within an eligible country, with no external territories included.

(2) To avoid doubt, neither of the following is a PyCCS project:

(a) a project that involves or includes the injection of greenhouse gases into a storage site which has the effect of enhanced oil, gas or hydrocarbon recovery;

(b) a project that involves direct air capture and storage (that is, the capture from the atmosphere of greenhouse gases that would otherwise reside in the atmosphere and the injection of those greenhouse gases into, or their storage in, an underground geological formation, reservoir or site).

(3) Each of the following is a ***source separation activity***:

(a) an new waste diversion activity;

(b) an expansion waste diversion activity;

(c) an aggregated waste diversion activity;

(d) an charity diversion activity.

(4) For this methodology, a management activity is an ***eligible management activity*** if it:

(a) involves the application of AQS biochar to remediate soil and enhance carbon storage, and includes one or more of the following land management activities:

(i) applying nutrients to the land in the form of a synthetic fertiliser or non-synthetic fertiliser to address a material deficiency;

(ii) applying gypsum to remediate sodic or magnesic soils;

(iii) undertaking new irrigation;

(iv) re-establishing or rejuvenating a pasture by seeding;

(v) establishing, and permanently maintaining, a pasture where there was previously no pasture, such as on cropland or bare fallow;

(vi) altering the stocking rate, duration or intensity of grazing;

(vii) retaining stubble after a crop is harvested;

(viii) converting from intensive tillage practices to reduced or no tillage practices;

(ix) modifying landscape or landform features to remediate land;

Note : This may include, but is not limited to, practices implemented for erosion control, surface water management, drainage/flood control, or alleviating soil compaction. Practices may include controlled traffic farming, deep ripping, water ponding or other means.

(x) using mechanical means to add or redistribute soil through the soil profile; and

Note : This may include, but is not limited to, clay delving, clay spreading or inversion tillage.

(xi) using a cover crop to promote soil vegetation cover or improve soil health, or both; and

(b) is an improvement on the land management activities conducted in the agricultural system during the baseline period such that:

(i) at least one of the land management activities is new or materially different from the equivalent land management activity conducted during the baseline period; and

(ii) more carbon can reasonably be expected to be sequestered in that system as a result of carrying out that land management activity; and

Note : Paragraph (4)(b) is not intended to limit activities that may sequester carbon in soil, but to ensure that at least one new or materially different land management activity will be conducted for the project that can reasonably be expected to result in eligible carbon abatement.

(c) does not involve activities excluded by section 23 or the carrying out of activities restricted by section 24.

(5) A project covered by subsection (1) is a ***PyCCS project***.

(6) A land management activity covered by subparagraphs (4)(a)(ix) or (x) is a ***soil landscape modification activity***.

Part 3—Project requirements

Division 1—General

9. Operation of this Part

(1) For paragraph 90.(1)(b) of the Carbon Farming Standard, section 10 requires an application under section 22 of the Carbon Farming Standard (for a declaration that a PyCCS project is an eligible offsets project) to be accompanied by a PyCCS project plan for the project and makes related provisions.

(2) For paragraph 90.(1)(b) of the Carbon Farming Standard, sections 11 and 34 set out requirements that must be met for a PyCCS project to be an eligible offsets project.

(3) For subparagraph 27.(4)(A)(a)(ii) of the Carbon Farming Standard, section 32.A specifies a requirement in lieu of the newness requirement.

(4) For paragraph 59.(3)(b) of the Carbon Farming Standard, section 34 specifies the crediting period for a PyCCS project.

(5) Each project area and carbon estimation area of a PyCCS project must meet the requirements set out in Schedule 1 during each reporting period.

10. PyCCS project plan must accompany section 22 application

(1) A section 22 application for a PyCCS project must be accompanied by the PyCCS project plan for the project.

(2) The ***PyCCS project plan*** for a Pyrogenic Carbon Capture and Storage in agricultural systems project is a document that outlines aspects of the implementation of the project, including (but not limited to) the following:

(a) information about each relevant authority required for the project, including information about each relevant authority required for the project that has been obtained;

(b) a brief summary of the overall project operations, including the installation and operation.

(c) a detailed description of the manner and estimated capacity of biochar application at the carbon estimation area.

(d) a detailed description of the location and characteristics of each carbon estimation area to be used by the project, including its suitability for carbon storage, and the estimated capacity of biochar to be used at the carbon estimation area;

(e) a detailed description of the location of the carbon estimation area s to be used by the project, how the biochar will be applied to each carbon estimation area, and how they will be managed and monitored;

(f) a detailed description of the location and nature of the waste treatment facility or unit to be used by the project and, if a waste treatment facility or unit relates to waste biomass type collected from a landfill, a detailed description of the location of the landfill;

(g) a detailed description of the transport that will be used by the project for biochar between one or more waste treatment facility or unit and a carbon estimation area;

(h) details of the steps to be taken to ensure that biochar stored in a carbon estimation area will be carbon storage;

(i) a detailed description of how the risk of not applying biochar to CEAs will be monitored;

(j) an outline of how monitoring of a carbon estimation area, and reporting about that monitoring, will be undertaken;
(k) if multiple parties are involved in the project, a description of the project responsibilities of each party to the project;
(l) information required about any workplace health and safety plan covering the operations of the project. This is to be in place in accordance with the legal requirements of the country, State (or similar division) or Territory in which the project is being carried out.

(3) The project proponent must take reasonable steps to implement or oversee the implementation of the PyCCS project in accordance with the PyCCS project plan (as revised from time to time pursuant to subsection (4)) until the end of the crediting period.

(4) The project proponent must revise the PyCCS project plan if:
(a) the project proponent's implementation of the PyCCS project changes materially from that outlined in the PyCCS project plan; and
(b) the Working Body notifies the project proponent that a particular issue omitted from, or covered by the PyCCS project plan needs to be addressed—by the date specified in the notification (which must be at least three months from the date of the notification).

11. Requirements for waste treatment facilities or units

A PyCCS project must not use a waste treatment facility or unit for the processing and production of biochar if the waste treatment facility or unit has previously been identified as the waste treatment facility or unit for the second project in an offset report for another PyCCS project (the ***second project***) that has been submitted to the Working Body for the processing and production of biochar.

Subdivision A—Source separation activities

12. Requirements for new waste diversion activities

(1) An activity is a ***new waste diversion activity*** if:
(a) the requirements set out in subsections (2) and (3) are met; and
(b) the activity is not a subactivity in an aggregated waste diversion activity.

(2) The activity must involve waste biomass type being:
(a) separated at the point of waste generation from a single waste stream; and
(b) diverted from source; and
(c) transported to within the project area and:
(i) processed at a nominated waste treatment facility or unit; or
(ii) processed at a biomass pellet facility, where the biomass is converted into pellets using eligible waste treatment technology, and those pellets are supplied to a nominated waste treatment facility or unit for use as fuel, with biochar recovered as a by-product.

(3) During the relevant 24-month period for the project, material consisting of the same waste biomass type or types as the waste stream diverted from source by the activity must have been:
(a) generated in the activity area; and
(b) either:
(i) crushed and returned to farmland in an uncomposted state; or
(ii) disposed of in landfill; or
(iii) removed by burning; or

(iv) improperly disposed of as waste.

13. Requirements for expansion waste diversion activities

(1) An activity is an ***expansion waste diversion activity*** if:

(a) the requirements set out in subsections (2) and (3) are met; and

(b) the activity is not a subactivity in an aggregated waste diversion activity.

Expansion of an existing activity

(2) The activity must involve waste biomass type being:

(a) separated at the point of waste generation from a single waste stream; and

(b) diverted from source; and

(c) processed at a nominated waste treatment facility or unit.

as a result of the expansion of an existing activity.

(3) During the relevant 24-month period for the project, material consisting of the same waste biomass type or types as the waste stream diverted from source by the activity must have been:

(a) generated in the activity area; and

(b) diverted from source by the existing activity; and

(c) processed at a nominated waste treatment facility or unit.

14. Requirements for aggregated waste diversion activities

(1) A project proponent that undertakes 2 or more activities may choose to include some or all of the activities in an ***aggregated waste diversion activity*** if:

(a) were the activities not included, they would be new waste diversion activities or expansion waste diversion activities; and

(b) diverted from source; and

(c) the waste biomass type is processed at a nominated waste treatment facility or unit within the network.

(2) An activity that is included in an aggregated waste diversion activity is a ***subactivity***.

Note 1: An aggregated waste diversion activity may consist of both activities that would otherwise be new waste diversion activities and activities that would otherwise be expansion waste diversion activities.

Note 2: An aggregated waste diversion activity is a single source separation activity.

(3) If:

(a) the project proponent decides to no longer include a particular subactivity in an aggregated waste diversion activity; and

(b) as a result of that decision, the aggregated waste diversion activity consists of only one remaining subactivity;

the project proponent may continue to treat the remaining subactivity as an aggregated waste diversion activity.

Note : The project proponent must notify the Working Body if the project proponent decides to no longer include a particular subactivity in an aggregated waste diversion activity (see subdivision 81.(5)).

15. Requirements for particular kinds of new waste diversion activities, expansion waste diversion activities and aggregated waste diversion activities

(1) An activity that is a new waste diversion activity, an expansion waste diversion activity or a subactivity in an aggregated waste diversion activity may (but need not) be:

(a) a primary processing waste activity; or

(b) a agricultural waste activity; or
(c) a municipal garden and park waste activity; or
(d) a wood and wood waste activity.

Note : If a new waste diversion activity, an expansion waste diversion activity or a subactivity is of a kind mentioned in any of paragraphs (a) to (b), the table in section 57 may be used to work out the quantity of a waste biomass type present in material collected by the activity or subactivity (see sections 55 and 56).

(2) To be a ***primary processing waste activity***, the activity must meet the following requirements:
(a) the activity involves separating the waste biomass types – bagasse, nut shells and pits – at the separated at the point of waste generation from the waste stream;
(b) the primary processing waste must be primarily free of packaging when it is separated at the point of generation;
(c) the waste biomass type must be disposed of into a source separation bin that is intended to contain only that waste biomass type.

(3) To be a ***agricultural waste activity***, the activity must meet the following requirements:
(a) the activity must involve the waste biomass types branches and wheat straw being separated at the point of waste generation from a single waste stream;
(b) agricultural waste must be deposited in an area that is separate from the composting area.
(c) the implementation of the activity must include community education and engagement activities.

(4) To be a ***municipal garden and park waste activity***, the activity must meet the following requirements:
(a) the activity must involve the waste biomass type branches being separated at the point of waste generation from the waste stream;
(b) the branches must be disposed of into a source separation bin that is intended to contain only that waste biomass type.
(c) the implementation of the activity must include community education and engagement activities.

(5) To be a ***wood and wood waste activity***, the activity must meet the following requirements:
(a) the activity must involve the waste biomass type wood and wood waste being separated at the point of waste generation from the waste stream;
(b) the wood and wood waste must be disposed of into a source separation bin that is intended to contain only that waste biomass type.

16. Requirements for charity diversion activities

(1) An activity is considered a ***charity diversion activity*** if it meets the requirements set out in subsections (2) and (3).

(2) The activity must involve waste biomass type that is:
(a) separated at the point of waste generation from the waste stream; and
(b) diverted from source; and
(c) used by one or more registered charities for a charitable purpose.

Note : For the definition of ***charitable purpose***, see section 3 (1) of the Charities Act 2011.

(3) During the relevant 24-month period for the project, the waste biomass type must have been:
(a) generated in the activity area; and
(b) either:
(i) crushed and returned to farmland in an uncomposted state; or

(ii) disposed of in landfill; or
(iii) removed by burning; or
(iv) improperly disposed of as waste.

Note : Evidence provided with the application may include farm records or receipts from bales sold.

(4) In determining whether the requirement in paragraphs (3)(b) and (c) is met, simply disregard any activity of a kind mentioned in subsection (2) that was undertaken by the project proponent in the activity area during the relevant 24-month period for the project.

17. Implementation of source separation activities

(1) The activity area for a source separation activity must be in one State (or similar division) or Territory only.

(2) The activity area for a new waste diversion activity, an expansion waste diversion activity, or an aggregated waste diversion activity should be located:
(a) within approximately 200 kilometres round trip of a nnominated waste treatment facility or unit; or
(b) within approximately 100 kilometres one-way of a nominated waste treatment facility or unit.

Note : In cases where local distributed waste treatment facility or unit are established, a greater distance may be allowed if justified by transportation efficiency and environmental considerations.

(3) The project may involve the implementation of 2 or more source separation activities in the same activity area even if the activities (or any of them) are not subactivities in an aggregated waste diversion activity.

Subdivision B—Carbon estimation areas

18. Requirements for project area and eligible land

(1) The project area must include land (***eligible land***) meeting the following requirements:
(a) during the whole of the reporting period the land was used for one or more of the following agricultural uses:
(i) pasture;
(ii) cropping;
(iii) bare fallowed;
(b) there are no dwellings or other structures on the land;
(c) as at the end of the reporting period, it was reasonable to expect that carrying out the eligible management activities proposed by the relevant land management strategies will increase the carbon storage in the land.

(2) Land is not eligible land if:
(a) the land:
(i) is or becomes a project area or part of a project area of another eligible offsets project; and
(ii) is land with forest cover or land with forest potential; or

Note : Land with forest cover or land with forest potential may be eligible land provided it meets the requirements in subsection (1) and is not excluded by subsection (2).

(b) the land has been subject to:
(i) illegal clearing of a native forest, or illegal draining of a wetland; or

(ii) clearing of a native forest, or draining of a wetland (that was not an illegal clearing or draining), within:

(A) 7 years of the lodgement of the section 22 application for the project or the section 29 application for the land; or

(B) if there is a change in ownership of the land, after the clearing or the draining—5 years of the lodgement of the section 22 application for the project or the section 29 application for the land.

(3) The project area may include land which is not eligible land, provided that it will not form part of a carbon estimation area for the project or is to remain part of a carbon estimation area. Ineligible land may remain in a carbon estimation area if:

(a) less than the smaller of 1% or 5 hectares of the area of the carbon estimation area is covered by dwellings or other structures; or

(b) The Working Body may determine that land can continue to be mapped as a carbon estimation area if:

(i) the Working Body has consulted with the project proponent about making such a determination; and

(ii) the continued mapping of the carbon estimation area is unlikely to result in the crediting of non-genuine carbon abatement; and

(iii) the Working Body considers that the continued mapping of the carbon estimation area is appropriate, having regard to all the circumstances.

(4) A project area may be varied under the principles only if one or more of the following apply:

(a) the first offsets report for the project under subsection 63.(1) of the Carbon Farming Standard has not been submitted;

(b) the variation removes only areas that are exclusion areas or emissions accounting areas from the project area;

(c) the whole of the project area is removed from the project;

(d) one or more whole carbon estimation areas are removed in circumstances where:

(i) the removal is not for a purpose of increasing the credits issued under the Carbon Farming Standard in relation to the project area; and

(ii) if land management activities in a carbon estimation area to be removed from a project have moved biochar from that carbon estimation area to one or more other carbon estimation areas that are part of the project—all the carbon estimation areas that had received that biochar are also removed from the project;

(e) one or more whole carbon estimation areas or project areas are removed from the project after the end of the crediting period for the project.

19. Requirements for carbon estimation areas—general requirements

(1) A carbon estimation areas must consist of land which:

(a) during the 5 years immediately before the application, was grazed, cropped or bare fallowed at least once; and

(b) is entirely within a single carbon estimation area.

(2) A carbon estimation area must not include the following:

(a) forest land (except for the economy of agriculture under forests);

(b) settlements including dwellings or other structures;

(c) land that has been subject to:

(i) clearing of native forest cover; or

(ii) drainage of a wetland;

(d) land on which a eligible management activity could not be carried out.

(3) At the time of the application the project proponent must nominate one eligible management activity for each carbon estimation area, or each added or varied carbon estimation area.

20. Requirements for carbon estimation areas—boundaries and mapping

(1) A carbon estimation area must comprise:

(a) a single area of eligible land with an unbroken perimeter; or

(b) separate areas of eligible land.

(2) The geographic boundaries of each carbon estimation area must be defined in accordance with the BidCarbon Mapping Guidelines.

Note : A carbon estimation area may be modified after the project declaration date only in accordance with section 21.

21. Requirements for change of carbon estimation areas

(1) If changes are made to the number or boundaries of carbon estimation areas within a project, each changed or new carbon estimation area must comply meet the requirements set out in subsections 20.(1) to (3).

Note 1: Details regarding changes to the number or boundaries of carbon estimation areas must be provided in an offsets report in accordance with section 77.

Note 2: Compliance with subsection 21.(4) is required at the time of submission of the next offsets report—see subsection 77.(2).

(2) For the purposes of subsection (1), a reference to 'the application' in subsection 19.(3) is taken to be a reference to when the changes are made to the number or boundaries of the carbon estimation areas within a project.

(3) If changes are made to the number or boundaries of a carbon estimation area within a project, the changes must not result in any portion of a carbon estimation area that has been reported on in an offsets report no longer being within a carbon estimation area.

(4) If a eligible management activity has been undertaken in a particular carbon estimation area during a particular reporting period, changes must not be made to the boundaries of that carbon estimation area before the end of the reporting period.

22. Activities to be conducted

(1) The project proponent must, in all areas of land included in a carbon estimation area, carry out or maintain at least one eligible management activity.

Note : The kind of eligible management activity may change for an area of land over time, so long as during each reporting period at least one eligible management activity is conducted or maintained.

(2) The first eligible management activity on each area of land included in a carbon estimation area must begin:

(a) after the project is declared an eligible offsets project; and

(b) before the end of the first reporting period after the carbon estimation area was included in the project area for the project.

(3) If a carbon estimation area includes land that is a permanent pasture, or has been used as pasture for a period of at least 2 years, the pasture must be grazed, or intended to be grazed, by production livestock at least once every 2 years.

(4) The project proponent may undertake additional management activities provided those activities are not excluded under section 23 or would result in a breach of section 24.

23. Activities not to be conducted

(1) Activities excluded by this section must not be conducted on land that is, or is to be, part of a carbon estimation area in the crediting period for the project.

(2) The following activities must not be conducted:

(a) applying ineligible non-synthetic fertilisers;

(b) the application of soil amendments containing coal;

(c) the application of pyrolysised material that is not biochar.

(3) Land management activities must not be conducted on hypersulfidic material that would result in one or more of the following:

(a) drainage;

(b) physical disturbance;

(c) the application of lime to the land.

Note : Project proponents may choose to exclude soils with hypersulfidic material (ie acid sulfate soils) from carbon estimation areas to avoid the risks of breaching this subsection.

(4) An activity notified to the project proponent in writing by the Working Body under subsection (5) must not be conducted.

(5) The Working Body may notify a project proponent of one or more activities that must not be conducted if:

(a) the Working Body is satisfied that the activity may result in the crediting of non-genuine carbon abatement; and

(b) the Working Body has consulted the project proponent on the need to make such a notification.

24. Restricted activities

(1) Activities mentioned in this section must be conducted in accordance with this section on land that is, or is to be, part of a carbon estimation area in the period commencing on the date on which the section 22 application for the project is submitted and ending at the end of the crediting period for the project.

(2) Woody vegetation may be cleared only if:

(a) any clearing is undertaken in accordance with any applicable regional natural resource management plan and Country, State (or similar division), Territory or local government environmental and planning laws; and

(b) at least one of the following apply:

(i) the clearing is to manage woody horticulture crops, as part of standard business operations;

(ii) the clearing is required to manage woody horticulture crop, following a disturbance;

(iii) the clearing is to manage the growth of a known weed species as defined;

(iv) the clearing is required to reduce the risk of fire;

(v) the land was not forest cover in the 5 years prior to the lodgement of the section 22 application for the project or the section 29 application for the land.

Note : Declaration as an eligible offsets project may be dependent on obtaining regulatory approvals, including approvals, licences or permits under State (or similar division) or Territory law (see section 28 of the Carbon Farming Standard). Failure to obtain regulatory approvals may result in the declaration of the project being revoked (see section 34 of the Carbon Farming Standard).

(3) Thinning of the land is only permitted if:

(a) the thinning is to the extent necessary to comply with Country, State (or similar division), Territory or local government environmental and planning laws; or

(b) the thinning is of woody biomass to be used either:

(i) as firewood for personal use and the carbon stock in the land after the thinning would not be more than 5% less than it would have been if the biomass was not thinned; or

(ii) in accordance with traditional indigenous practices or native title rights; or

(c) at least one of the following apply:

(i) the thinning is to manage woody horticulture crop, as part of standard business operations;

(ii) the thinning is required to manage woody horticulture crop, following a natural disturbance;

(iii) the thinning is to manage the growth of a known weed species as defined;

(iv) the thinning is required to reduce the risk of fire;

(v) the land was not forest cover in the 5 years prior to the lodgement of the section 22 application for the project or the section 29 application for the land.

(4) Land management activities may involve the addition or redistribution of soil using mechanical means (including through clay delving, clay spreading or water ponding) only if:

(a) any soil is sourced from carbon estimation areas that are part of the project; and

(b) sampling is undertaken at a depth greater than the depth of any soil:

(i) sourced for the land management activities; and

(ii) added to the soil profile; and

(iii) incorporated through the soil profile; and

(c) the land where any soil is sourced is remediated as soon as is practical.

Note : Remediation could involve returning sandy topsoil to a clay pit immediately after the clay is extracted.

(5) Soil amendments containing biobased product may be added to soil within a carbon estimation area only if:

(a) the application of the biobased product is:

(i) in accordance with a license or permit from a State (or similar division) or Territory which specifically authorises the application of biobased product in relation to the area of land; or

(ii) soil improvers that are self-manufactured and used solely for personal purposes may be exempt from licensing or registration requirements; or

Note : For instance, in the mainland of China, if an individual produces a biobased product for their own use and applies it to their own farmland, there must be no requirement for registration or authorisation from the relevant rural administrative authorities.

(iii) if a licence or permit under subparagraph (i) is not available—authorised or approved in a written statement from the head (or delegate) of a responsible environmental protection agency in relation to the area of land that references this subparagraph; and

(b) the biochar was sourced or created from:

(i) project areas that are part of the project; or

(ii) biomass that was previously formed part of a source separation activity.

(c) the storage period for biochar shall not exceed 12 months or the expiry date of the product batch number, as stipulated by local statutory requirements.

(d) store the biochar in a secure place;

(e) store or spread the biochar at least 10 metres from any watercourse and 50 metres from any spring, well or borehole;

(f) not spread on land that:

(i) has been frozen for 12 hours or more in the preceding 24 hours;

(ii) is waterlogged, frozen or covered in snow.

Subdivision C— Land management strategy

25. Requirements for land management strategy

(1) An qualified person must prepare or review one or more written strategies (a ***land management strategy***) for the implementation of all eligible land management activities to be carried out as part of the PyCCS project until the end of the reporting period for the project that:

(a) demonstrates the eligible management activities satisfy the requirements in subsection 8.(4); and

(b) for all land included, or to be included, in a carbon estimation area, includes the carrying out or maintenance of at least one eligible management activity until the end of the reporting period for the project; and

(c) documents and takes into account each of the following:

(i) all the eligible management activities and other land management activities that will be conducted on the land; and

(ii) the limitations on increasing application of biochar within each carbon estimation area; and

Note : Limitations may include soil sodicity, soil structure, environmental factors and micronutrients.

(iii) risks to soil carbon stocks from environmental factors and the land management activities being carried out; and

Note : Environmental factors include changes in climate impacting the project area.

(d) specifies:

(i) whether the project proponent intends to use either or both of the following:

(A) AQS biochar;

(B) products containing human effluent;

as part of their project; and

(ii) the steps the project proponent needs to take in order to monitor the project's progress; and

(iii) the records the project proponent needs to keep relating to land management activities to verify that the overall objectives of the land management strategy are being achieved.

(e) includes a statement that, in the opinion of the qualified person:

(i) activities excluded by section 23, or in breach of section 24, are not being conducted or proposed to be conducted; and

(ii) the eligible management activities meet the requirements of paragraph 8.(4)(b); and

(iii) the overall impact of all land management activities conducted on the land could reasonably be expected to improve soil carbon stocks over time.

(2) The land management strategies must:

(a) cover all of the land included in the carbon estimation areas for the project; and

(b) cover all of the land in a given carbon estimation area in a single strategy.

(3) The initial land management strategies for the project must be prepared:

(a) if this determination is the applicable methodology determination as a result of a 99 application—before the first offsets report submitted after that application; or

(b) otherwise—before the section 22 application.

(4) If a project area is added to a project as a result of a section 29 application:

(a) one or more existing land management strategies must be revised to cover the additional project area before the section 29 application; or

(b) one or more new land management strategies must be prepared to cover the additional project area before the section 29 application.

(5) The project proponent and each relevant landholder must:

(a) sign and agree to implement, or oversee the implementation of, each land management strategy; and

(b) take reasonable steps to implement, or oversee the implementation of, the applicable land management strategies until the end of the reporting period for the project.

(6) An qualified person must review, and if necessary revise, each strategy:

(a) at least once every 5 years or more frequently; and

(b) if land management activities being conducted change materially from those outlined in the land management strategy; and

(c) if the Working Body notifies a project proponent that a particular issue needs to be addressed in the strategy—by the date specified in the notification (which must be at least 3 months from the date of the notification).

(7) In providing a notification under paragraph (6)(c), the Working Body must take into account whether the carrying out of the land management strategy could reasonably be expected to result in the crediting of non-genuine carbon abatement.

(8) In this section:

relevant landholder, in relation to a land management strategy, means any person other than the project proponent who, whether by reason of ownership or otherwise, is in lawful occupation or possession, or has lawful management or control, of land that is covered by the land management strategy.

Division 2—Requirements for waste treatment facility or unit within a network of facilities or units

26. Project proponent not to be actively involved in decision making

(1) The project proponent for the project must not be in a position to make decisions about the following:

(a) the amount of waste biomass type that is consumed at a waste treatment facility or unit within the network.

(b) the installation, replacement or removal of small-scale technology unit;

(c) changes to the shell of a building at the accredited AWT facility.

Note : This subsection (1) does not preclude the project proponent from also being a registered person as described in section 14 of the BPS Standard.

(2) However, subsection (1) does not apply to:

(a) the targeting of treatment to the waste treatment facility or unit; or

(b) activities relating to supplying waste biomass type to the waste treatment facility or unit.

Note : Disconnecting an waste biomass type service because of nonpayment.

27. Waste treatment facility or unit affected

(1) If a waste treatment facility or unit in a project is affected by closedowns during the crediting period, it must be excluded from the network from the day the closedowns begin until the end of the crediting period.

(2) A waste treatment facility or unit is ***affected by closedowns*** if:

(a) the consumption of the waste biomass type at the waste treatment facility or unit has been measured as part of the project through other projects relating, resulting in data about waste biomass type consumption at the CEAs to be available for at least one waste biomass type source chosen for the waste treatment facility or unit under section 28; or

(b) for a reason beyond the control of the project proponent for the project:

(i) the occupant of the waste treatment facility or unit submits a written request to the project proponent not to use waste biomass type consumption data from the waste treatment facility or unit to calculate the net carbon dioxide equivalent reduction for the project; or

(ii) the project proponent otherwise ceases to have a legal right to the waste biomass type selected for the waste treatment facility or unit under section 28, and will not be able to access and use data on the production of biochar from the waste biomass type; or

(c) A waste treatment facility or unit that is affected by closedowns is no longer considered a waste treatment facility or unit within that network of facilities or units.

Note : Reasons for affected by closedowns include relocating to a different site.

28. Choosing waste biomass type sources

Initial Selection

(1) By the time of initial selection of a waste treatment facility or unit within the network, the project proponent shall determine whether the consumption of the waste biomass type is to be measured at that facility or unit at that time.
By the time of the initial selection of a waste treatment facility or unit within the network, the project proponent shall determine whether the consumption of the waste biomass type will be measured at that facility or unit.

Subsequent Selections

(2) By the time of a subsequent selection of a waste treatment facility or unit within the network, the project proponent must have chosen whether to measure the consumption of the waste biomass type in the waste treatment facility or unit at that time for which no waste biomass type source has been selected.

29. Measuring waste biomass type consumption

(1) The project proponent for the project must not change, or cause to be changed:
- (a) the method under section 86 for monitoring the consumption of waste biomass type at a waste treatment facility or unit within the network; or
- (b) the metering arrangements for monitoring the consumption of the waste biomass type at a waste treatment facility or unit;

if subsection (2) applies.

(2) This subsection applies if the change mentioned in subsection (1) is likely to:
- (a) result in an increased measured consumption of the waste biomass type at a waste treatment facility or unit within the network, compared to what would have occurred otherwise; or
- (b) result in a decreased measured consumption of the waste biomass type at a waste treatment facility or unit within the network, compared to what would have occurred otherwise.

30. Legal right to access and use data about PyCCS project

Where the project proponent for a PyCCS project utilises data concerning the consumption of waste biomass types at a waste treatment facility or unit within the network for the purpose of calculating the net abatement amount of the project in accordance with Part 4, the project proponent shall have a legal right to:

(c) access the data; and

(d) use the data for that purpose.

Note : If there is more than one project proponent for a project, it is not necessary for each project proponent to have a legal right to access and use the data. A project proponent is required to have that legal right only if the project proponent will access and use the data to calculate the net abatement amount for the project.

Division 3—Other requirements

31. Information to be included in applications relating to the project

Information to be included in application for declaration—original activities

(1) The application made under section 22 of the Carbon Farming Standard in relation to the project must include the following for each of the project's source separation activities (an ***original activity***) identified at the time of making the application:

(a) a detailed description of the nature of:

(i) the activity; or

(ii) for aggregated waste diversion activities—each subactivity in the aggregated waste diversion activity;

(b) a detailed description of the kind of waste biomass type that will be diverted from source by the activity;

(c) details of the activity area;

(d) for expansion waste diversion activities and subactivities that would otherwise be expansion waste diversion activities—information about the existing activity, that is to be expanded and the nature of the expansion;

(e) for new waste diversion activities, expansion waste diversion activities and aggregated waste diversion activities —a description of each eligible waste treatment technology to be used to process the waste biomass type diverted from source by the activity and details of each waste treatment facility or unit nominated as a facility at which the waste biomass type will be processed;

(f) for charity diversion activities—a description of the process by which branches will be separated at the point of waste generation and details of the registered charity or charities to which the branches will be diverted.

Note : If the activity is a new waste diversion activity, an expansion waste diversion activity or an aggregated waste diversion activity, the information provided for the purpose of paragraph (1)(c) may identify the activity area by reference to the area in which the activity is to be implemented rather than each site at which a source separation bin is to be located.

(2) For each of the project's original activities, the application must be accompanied by appropriate evidence of the following:

(a) that the requirement set out in subsection 12.(3), 13.(3), 13.(5) or 16.(3), as applicable to the activity, has been met by:

(i) the activity; or

(ii) if the activity is an aggregated waste diversion activity—each subactivity in the aggregated waste diversion activity;

(b) for charity diversion activities, new waste diversion activities and subactivities that would otherwise be new waste diversion activities—the landfill that, during the relevant 24-month period for the project, received material consisting of the same waste biomass type or types as the waste biomass type to be diverted by the activity or subactivity (if such evidence is available);

(c) for expansion waste diversion activities and subactivities that would otherwise be expansion waste diversion activities—the number and volume of source separation bins used by the existing activity, during the relevant 24-month period for the project, and the waste biomass types collected in those bins during that period.

Note : A project that does not have the required appropriate evidence for each original activity or for the whole of the relevant 24-month period for the project does not meet the requirements to be an eligible offsets project.

(3) For paragraph (2)(a), the appropriate evidence must consist of:
  (a) weighing instrument shall comply with the requirements of subsection 4.(1) of the BITP 6; or
  (b) belt weighers shall comply with the requirements of the BITP 7; or
  (c) weighing instrument or belt weighers evidence from an accepted industry weighing instrument or belt weighers that meets appropriate measuring requirements.

(4) For paragraph (2)(c), the appropriate evidence must consist of waste management records for the existing activity, that provide details of the service arrangement, including the number and volume of source separation bins.

Information to be included in application for declaration—potential activities

(5) This section applies to the application made under section 22 of the Carbon Farming Standard in relation to the project if there are one or more activities (a ***potential activity***) that are:
  (a) source separation activities that the project is likely to implement but that are not able to be identified at the time the application is made; or
  (b) if the project's original activities include an aggregated waste diversion activity—activities that the project proponent is likely to include in the aggregated waste diversion activity but that are not able to be identified at the time the application is made.

(6) The application must include a description of:
  (a) the likely nature of the potential activity; and
  (b) the waste biomass type likely to be diverted from source by the potential activity.

Note : If a potential activity is included in the calculation of the project's activity capture portions for a reporting period because of paragraph 43.(1)(b), the offsets report about the project for the reporting period must include the same information and evidence as would be required to be provided under section 31 if the potential activity were able to be identified at the time the application under section 22 of the Carbon Farming Standard is made in relation to the project (see section 76).

Information to be included in application for declaration— network of facilities or units

(7) Information that must be included in an offsets report during the crediting period:
  (a) a summary of the calculation of the components of the net abatement amount, including, without limitation, a description of the method used to calculate emissions from each waste treatment facility or unit in the network of facilities or units;
  (b) a description of any changes to the network of facilities or units occurring during the reporting period, including, if applicable, a description of any newly added waste treatment facility or unit.
  (c) a description of any increase or decrease in the number of facilities or units used at a waste treatment facility or unit in the network of facilities or units during the reporting period, including, where applicable, the location of any newly added facility or unit.
  (d) a description of any change to any waste treatment facility or unit within the network of facilities or units, or any material change in the operation of a waste treatment facility or unit, during the reporting period.
  (e) if during the reporting period, the project operated in a manner that deviated from that described in the PyCCS project plan—a description of the deviation, including the duration and frequency of the deviation.

Information to be included in application for declaration—land management strategy

(8) The section 22 application, section 29 application or section 99 application for the project must include:

(a) a detailed description of the land management activities that were carried out during the reporting period; and

(b) a detailed description of the eligible management activities that will be carried out as part of the project.

(c) a detailed explanation of how the eligible management activities to be carried out satisfy the requirements in subsection 8.(4); and

(d) evidence that all of the land included, or to be included, in a carbon estimation area is eligible land; and

(e) if AQS biochar is to be applied to the soil—evidence that the requirements of subsection 24.(5) have been met.

(9) The section 22 application or section 29 application must include copies of the land management strategies prepared for the project.

(10) However, if the Working Body is not satisfied that the land management strategies included under subsection (2) meet the requirements of section 25, the project is not an eligible offsets project or covered by this determination unless one or more revised land management strategies are provided which satisfy the Working Body that the requirements of section 25 have been met.

Division 4—Additionality

32. Demonstrating Additionality

(1) For the purposes of paragraph 27.(4)(A)(a) of the Carbon Farming Standard, a PyCCS project demonstrates additionality where the requirements set out in this section are met.

(2) The additionality requirement shall be satisfied by means of:

(a) the use of an accredited AWT facility that has an eligible biochar baseline determined in accordance with the BPS Rule; and

(b) a project-level test in accordance with section 32.A (the "newness requirement").

(3) In this section:

eligible biochar baseline has the meaning given by section 6 of the BPS Rule;

Note : The eligible biochar baseline for an accredited AWT facility may be varied in the circumstances prescribed by section 47 of the BPS Standard and section 46 of the BPS Rule.

32.A. Newness requirement

(1) For subparagraph 27.(4)(A)(a)(ii) of the Carbon Farming Standard, a requirement in lieu of the substitute newness requirement for a PyCCS project is that the project complies with subparagraph 27.(4)(A)(a)(i) of the Carbon Farming Standard, disregarding the preparation of any land management strategy before the eligible management activity commences.

(2) Subject to subsection (3), a project meets the ***substitute newness requirement*** if it has not begun to be implemented.

(3) The project also meets the ***substitute newness requirement*** if:

(a) a final investment decision has not been made for the project at the time of the making of a declaration under subsection 27.(2) of the Carbon Farming Standard that the project is an eligible offsets project that is covered by this methodology; and

(b) the project proponent or project proponents for the project have notified the Working Body in writing of their intention to submit an application in respect of the project:

(i) paragraphs 33.(1)(a) to (d); or

(ii) paragraphs 33.(2)(a) to (d); or

(c) the project had not begun to be implemented at the intention notice time.

(4) For the purpose of paragraph (3)(a), ***final investment decision***:

(a) has the meaning generally accepted within the corporate finance community; and

(b) does not include a decision to proceed with an offsets project that is contingent on the project being declared to be an eligible offsets project that is covered by this methodology.

(5) A determination as to whether a project has begun to be implemented at a particular time is to be done as if for the purposes of subparagraph 27.(4)(A)(a)(i) of the Carbon Farming Standard (so that subsections 27.(4)(B) to (4)(E) of the Carbon Farming Standard apply).

(6) In this section:

intention notice time has the meaning given by section 33.

33. Intention notice time

Transitional--newness requirement (single project proponent)

(1) This item applies to an offsets project (within the meaning of the Carbon Farming Standard) if:

(a) a person is the only project proponent for the project (within the meaning of the Carbon Farming Standard); and

(b) at a particular time (the ***intention notice time***) during the period:

(i) beginning at the start of 24 April 2024; and

(ii) ending immediately before the commencement of this item;

the person gave the Working Body written notice of the person's intention to make an application during the period:

(iii) beginning at the commencement of this item; and

(iv) ending immediately before the start of 31 December 2026;

for the declaration of the project as an eligible offsets project; and

(c) the notice sets out:

(i) the name of the project; and

(ii) a description of the project; and

(iii) the location of the project; and

(d) the notice is accompanied by documentary evidence that the person is the only project proponent for the project (within the meaning of the Carbon Farming Standard); and

(e) during the period:

(i) beginning at the commencement of this item; and

(ii) ending immediately before the start of 31 December 2026;

the person makes an application for the declaration of the project as an eligible offsets project.

Transitional--newness requirement (multiple project proponents)

(2) This item applies to an offsets project (within the meaning of the Carbon Farming Standard) if:

(a) each of 2 or more persons is a project proponent for the project (within the meaning of the Carbon Farming Standard); and

(b) at a particular time (the ***intention notice time***) during the period:

(i) beginning at the start of 1 July 2024; and

(ii) ending immediately before the commencement of this item;

those persons jointly gave the Working Body written notice of their intention to make an application during the period:

(iii) beginning at the commencement of this item; and

(iv) ending immediately before the start of 31 December 2026;

for the declaration of the project as an eligible offsets project; and

(c) the notice sets out:

(i) the name of the project; and

(ii) a description of the project; and

(iii) the location of the project; and

(d) the notice is accompanied by documentary evidence that each of those persons is a project proponent for the project (within the meaning of the Carbon Farming Standard); and

(e) during the period:

(i) beginning at the commencement of this item; and

(ii) ending immediately before the start of 31 December 2026;

those persons make (or are taken by section 107 of the Carbon Farming Standard to make) an application for the declaration of the project as an eligible offsets project.

34. Crediting period

For paragraph 59.(3)(b) of the Carbon Farming Standard, the period of 25 years is specified for a PyCCS project.

36. Promoting government programs disproportionately

(1) The project proponent for the project must not:

(a) offer goods or services that are funded or supported under:

(i) a government program or scheme; or

(ii) another eligible offsets project; or

(b) advise or facilitate the uptake of goods or services that are funded or supported under a government program or scheme or another eligible offsets project; or

(c) cause the offer, advice or facilitation to be given;

(2) In this section:

government program or scheme means:

(a) a government program or scheme, specified in principles (if any) made under subparagraph 27.(4)(A)(c)(ii) of the Carbon Farming Standard, under which an offsets project must not receive funding or support for activities undertaken as part of that project; or

(b) a government program or scheme that funds or supports an activity that, under principles (if any) made for subparagraph 27.(4)(A)(c)(ii) of the Carbon Farming Standard, must not be included in an eligible offsets project.

Part 4—Net abatement amount

Division 1—Preliminary

37. Operation of this Part

For paragraph 90.(1)(c) of the Carbon Farming Standard, this Part specifies the method for working out the net abatement amount for a reporting period for a PyCCS project that is an eligible offsets project.

38. 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 net abatement amount for a PyCCS project.

Table 1
Greenhouse gases and emissions sources

Item	Relevant emissions calculation	Emissions source	Greenhouse gas	Included?
1	Project emissions	Fuel consumption (stationary)	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☑
2	Project emissions	Electricity consumption (stationary)	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☑
3	Project emissions	Processing and comminution emissions	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☑
4	Project emissions	biochar production emissions	Carbon dioxide (CO_2)	☐
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☐
5	Project emissions	Fuel consumption (as transport fuel)	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☑
6	Project emissions	Electricity consumption (as transport fuel)	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑

			Nitrous oxide (N_2O)	☑
7	Project emissions	Irrigation energy	Carbon dioxide (CO_2)	☑
			Methane (CH_4)	☑
			Nitrous oxide (N_2O)	☑

39. Baseline emissions

The biochar was sourced or created from, in which case baseline emissions are taken to be zero:

(a) CEAs that are part of the project; or

(b) both of the following:

  (i) organic matter that previously formed part of a source separation activity; and

  (ii) either:

    (A) the application of the biochar to the CEA is carried out in accordance with the laws and regulations of the relevant State (or similar division), Territory, or local government; or

    (B) the biochar is sold as AQS biochar to the off-taker for use in a non-CEA.

Division 2—Method for calculating net abatement amount

40. Summary

The net abatement amount for a reporting period for the project is taken to be the increase in carbon storage resulting from the off-taker's application of AQS biochar, minus the project emissions.

41. Net abatement amount for a reporting period in the crediting period

(1) For paragraph 90.(1)(c) of the Carbon Farming Standard, the net abatement amount for a reporting period, A, is given by the following (***equation 1***):

$$A = \left(CS_{Rc,Proj} \times 0.95 \times IF_n\right) - TPE$$

where:

A means the net abatement amount for the reporting period, in tonnes CO_2-e.

$CS_{Rc,Proj}$ means the amount of carbon storage resulting from the application of AQS biochar to a CEA or non-CEA by the project during the reporting period, in tonnes CO_2-e, worked out using equation 2.

0.95 means that the abatement amount is multiplied by a factor of 0.95 to withhold 5% of BidCarbon Removal Units to manage the longer-term risk of reversal. The withheld portion is refundable upon completion of the project.

Note : Following the application of AQS biochar to the soil, an incident of open burning of crop residues occurred, without prior intention, during the subsequent harvest season.

IF_n means the improvement factor for the reporting period, worked out in accordance with section 73.

TPE means the sum of the following:

(a) the emissions from new irrigation for the reporting period, in tonnes of CO_2-e, worked out using equation 21;

(b) the emissions from the transportation of waste biomass type diverted from source for a reporting period, in tonnes CO_2-e, worked out using equation 24;

(c) The emissions from the transportation of AQS biochar to the off-taker for a reporting period, in tonnes CO_2-e, worked out using equation 32;

(d) the emissions from the processing and comminution associated with the production of biochar for a reporting period, in tonnes CO_2-e, worked out using equation 40;

(e) the emissions from biochar production for the reporting period, in tonnes CO_2-e, worked out using equation 44 (sub-method 1);

(f) the emissions from TLUD stoves for biochar production for the reporting period, in tonnes CO_2-e, worked out using equation 46 (sub-method 2);

(g) the emissions from accredited AWT facility for biochar production for the reporting period, in tonnes CO_2-e, worked out using equation 48 (sub-method 3).

(2) Under the requirements of subsection (3), it is permissible to purchase and cancel eligible carbon credit unit to offset scope 1 emissions, and renewable energy certificates (RECs) to

offset scope 2 emissions, through the BidCarbon marketplace, in which case the emissions calculated under the monitoring requirements are taken to be zero.

Note : A request for the issue of Carbon Data Rights Certificates must not be made unless the emissions referred to in paragraphs (1)(a) to (g) have been offset in accordance with paragraph (2).

(3) The emissions described in paragraphs (1)(a) to (g) must be offset, and a carbon neutrality certificate issued by the Environmental Development Center of the Ministry of Ecology and Environment of China must be obtained, before applying for a Carbon Data Rights Certificate.

Note 1: The official website of the carbon neutrality program administered by the Environmental Development Center of the Ministry of Ecology and Environment of China is available at http://cn.edcmep.org.cn/

Note 2: A request for the issue of Carbon Data Rights Certificates must not be made unless the emissions referred to in paragraphs (1)(a) to (g) have been offset in accordance with paragraph (2).

(4) The activity abatement portions for the reporting period are taken to be zero if the reporting period is not included in a crediting period for the project.

Division 3—Method for calculating pyrogenic carbon capture and storage

Subdivision A — Calculation of carbon storage

42. Summary

(1) This methodology accounts for carbon abatement from undertaking eligible management activities, crediting abatement from the carbon dioxide that is removed from the atmosphere and storage in soils through the application of AQS biochar.

(2) A project covered by this methodology is a offsets project, and is therefore subject to the obligations under the Carbon Farming Standard that relate to the crediting period.

(3) The net abatement amounts from the PyCCS project during the reporting period are derived from the CO_2-e removed by the applied AQS biochar in the soil within the non-CEA and the project area, which is implementing eligible management activities, minus the project emissions in the project area.

(4) The calculation of project emissions in the reporting period is done in accordance with Subdivision C of this Part.

(5) If the project has 2 or more project areas, the abatement amount is calculated separately for each project area and added together.

(6) Biochar produced at a waste treatment facility or unit within the network may be applied in CEAs within multiple project areas.

43. Activities to be included in calculations

(1) The calculation for waste treatment facility or unit in the network for a reporting period must include:

(a) each of the project's original activities; and

(b) if one or more of the project's potential activities are implemented during the reporting period—each potential activity implemented.

(2) Despite subsection (1), the project proponent may choose not to include an activity or subactivity in the calculation of the waste treatment facility or unit in the network of facilities or units for a reporting period if the activity or subactivity ceases being implemented during the reporting period.

(3) If, under subsection (2), the project proponent elects not to include an activity or subactivity in the calculation for a waste treatment facility or unit within the network of facilities or units for a reporting period, that activity or subactivity must not be included in the calculation for that facility or unit for any subsequent reporting period.

(4) An activity must not be included in the calculation for a waste treatment facility or unit within the network of facilities or units for a reporting period if:

(a) it is not an original activity or a potential activity identified in the application made under section 22 of the Carbon Farming Standard in relation to the project; or

(b) the project has been divided into 2 or more specified parts for the purpose of section 65 of the Carbon Farming Standard and the activity is not included in the part of the project to which the calculation relates.

44. Amount of carbon storage

The amount of carbon storage resulting from the application of AQS biochar to a CEA or non-CEA, in tonnes CO_2-e, is worked out using the formula (***equation 2***):

$$CS_{Rc,Proj} = \frac{CS_{Rc,NCEA,u_s} + CS_{Rc,CEA,u_s}}{1000}$$

where:

$CS_{Rc,Proj}$ means the amount of carbon storage from the application of biobased product at the project during the reporting period , in tonnes CO_2-e.

$CS_{Rc,NCEA,u_s}$ means the quantity of carbon storage resulting from the application of AQS biochar in one or more non-CEAs ($NCEA$) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e, worked out using equation 3.

CS_{Rc,CEA,u_s} means the quantity of carbon storage resulting from the application of AQS biochar in one or more CEAs (CEA) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e, worked out using equation 4 or equation 5.

45. Amount of carbon storage for each non-CEA

(1) The quantity of AQS biochar type applied by the project in one or more of its non-CEAs during a reporting period in the crediting period, in kilograms of CO_2-e, is calculated using the following:

(a) in accordance with paragraph (2), the off-taker must provide the quantity of AQS biochar type applied in the non-carbon estimation area during the reporting period;

(b) add up the quantity of AQS biochar type applied to each carbon estimation area outside the project area.

(2) For equation 2, $CS_{Rc,NCEA,u_s}$ is given by the following (***equation 3***):

$$CS_{Rc,NCEA,u_s} = \sum_{NCEA} CS^{100\text{yr}}_{Rc,NCEA,A,u_s} \times 0.95$$

where:

$CS_{Rc,NCEA,u_s}$ means the quantity of carbon storage in the application of AQS biochar type to non-CEA ($NCEA$) during the reporting period (Rc), in kilograms CO_2-e.

$CS^{100\text{yr}}_{Rc,NCEA,A,u_s}$ means the quantity of carbon storage in the quantity of AQS biochar type (A) used by the off-taker in the non-CEA ($NCEA$) during the reporting period (Rc), in kilograms CO_2-e, as determined by the project proponent, worked out using equation 8 or equation 9.

A means an AQS biochar type in respect of which a prepackaged form is published in the Prepackaged Register.

$NCEA$ means a non-carbon estimation area.

Rc means current reporting period.

0.95 means confidence level —0.95.

(3) If the quantity of carbon storage in the non-CEA calculated in accordance with paragraph (2) is less than zero, it is deemed to be zero in the reporting period.

46. Amount of carbon storage for each CEA

(1) This section sets out the calculation of carbon storage resulting from the application of AQS biochar type in CEAs within the project area. Two sub-methods are provided, depending on the selected carbon storage time horizon:

(a) Sub-method 1 – 100-year time horizon, as specified in subsection (3); or

(b) Sub-method 2 – 200-year time horizon, as specified in subsection (4).

(2) The quantity of AQS biochar type applied by the project through off-takers from CEAs within the project area for eligible management activities purposes during the reporting period is worked out as follows:

(a) in accordance with paragraph (2), the off-taker must provide the quantity of AQS biochar type applied in the CEA within the project area during the reporting period;

(b) add up the quantity of AQS biochar type applied to each CEA within the project area.

Sub-method 1

(3) For equation 2, CS_{Rc,CEA,u_s} is given by the following (***equation 4***):

$$CS_{Rc,CEA,u_s} = \sum_{CEA} CS^{100\text{yr}}_{Rc,CEA,f,A,u_s} \times 0.95$$

where:

$CS^{100\text{yr}}_{Rc,CEA,A,u_s}$ means the quantity of carbon storage over a 100-year time horizon resulting from the application of AQS biochar type (A) in the CEA (CEA) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e, as determined by the project proponent, worked out using equation 6 or equation 7.

CEA means a carbon estimation areas within the project area used in eligible management activities (x).

Rc means current reporting period.

A means an AQS biochar type in respect of which a prepackaged form is published in the Prepackaged Register.

0.95 means confidence level —0.95.

Sub-method 2

(4) For equation 2, CS_{Rc,CEA,u_s} is given by the following (***equation 5***):

$$CS_{Rc,CEA,u_s} = \sum_{CEA} CS^{200\text{yr}}_{Rc,CEA,f,A,u_s} \times 0.95$$

where:

$CS^{200\text{yr}}_{Rc,CEA,A,u_s}$ means the quantity of carbon storage over a 200-year time horizon resulting from the application of AQS biochar type (A) in the CEA (CEA) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e, as determined by the project proponent, worked out using equation 10.

47. Calculating carbon storage over a 100-year time horizon from AQS biochar application in CEAs

(1) The quantity of carbon storage over a 100-year time horizon attributable to the application of AQS biochar type in a CEA for the soil end-use category must be worked out using one of the following methods, as applicable:

(a) Sub-method 1 in subsection (2), according to paragraph 51.(2)(a); or

(b) Sub-method 2 in subsection (3), according to paragraph 51.(2)(b).

Sub-method 1

(2) For equation 4, $CS^{100yr}_{Rc,CEA,A,u_s}$ is given by the following (***equation 6***):

$$CS^{100yr}_{Rc,CEA,A,u_s} = Q_{Apply,CEA,A,u_s} \times C_{org,f,A,y} \times \frac{\min\left(M_{T_s} - a_{T_s} \times \left(\left(H/C_{org}\right)^{annual}_{f,A,y}\right)^{c_T}, 100\right)}{100} \times \frac{44}{12}$$

where:

$CS^{100\text{yr}}_{Rc,CEA,A,u_s}$ means the quantity of carbon storage over a 100-year time horizon resulting from the application of AQS biochar type (A) in the CEA (CEA) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e.

Q_{Apply,CEA,A,u_s} means the quantity of AQS biochar type (A) applied by the off-taker in the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, in kilograms, worked out using equation 50.

$C_{org,f,A,y}$ means the organic carbon content, in percentage (%), worked out using equation 12.

$\left(H/C_{org}\right)^{annual}_{f,A,y}$ means the annual weighted average H/Corg ratio, worked out using equation 13A-1.

T_S means the mean annual soil temperature at the non-CEA, rounded up from zero, in degrees centigrade (°C), determined in accordance with the monitoring requirements.

$M_{T_s}, a_{T_s}, c_{T_s}$ are the power regression parameters corresponding to the soil temperature (T_S), obtained from the BidCarbon Permanence Factor Calculator.

$\frac{44}{12}$ means molar ratio of carbon dioxide to carbon.

Sub-method 2

(3) For equation 4, $CS^{100\text{yr}}_{Rc,CEA,A,u_s}$ is given by the following (***equation 7***):

$$CS^{100\text{yr}}_{RC,CEA,A,u_s} = Q_{RC,CEA,A,u_s} \times C_{org,Table2} \times \frac{\min\left(M_{T_s} - a_{T_s} \times (0.2)^{c_{T_s}}, 100\right)}{100} \times \frac{44}{12}$$

where:

$C_{cog,Table2}$ means the organic carbon ratio, determined in accordance with the default values in Table 2 as specified in paragraph 50.(1)(b).

0.2 means the molar ratio of hydrogen to organic carbon, with a default value of 0.2 as required under subparagraph 51.(2)(b)(ii).

48. Calculating carbon storage over a 100-year time horizon from AQS biochar application in non-CEAs

(1) The quantity of carbon storage over a 100-year time horizon attributable to the application of AQS biochar type in a non-CEA for the soil end-use category must be worked out using one of the following methods, as applicable:

(a) Sub-method 1 in subsection (2), according to paragraph 51.(2)(a); or

(b) Sub-method 2 in subsection (3), according to paragraph 51.(2)(b).

Sub-method 1

(2) For equation 3, $CS^{100\text{yr}}_{Rc,NCEA,A,u_s}$ is given by the following (***equation 8***):

$$CS^{100yr}_{Rc,NCEA,f,A,u_s} = Q_{Apply,NCEAf,,A,u_s} \times C_{org,f,A,y} \times \frac{\min\left(M_{T_s} - a_{T_s} \times \left(\left(H/C_{org}\right)^{annual}_{f,A,y}\right)^{cT}, 100\right)}{100} \times \frac{44}{12}$$

where:

$CS^{100\text{yr}}_{Rc,NCEA,f,A,u_s}$ means the quantity of carbon storage over a 200-year time horizon resulting from the application of AQS biochar type (A) produced by waste treatment facility or unit (f) in the non-CEA ($NCEA$) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e.

$Q_{Apply,NCEA,f,A,u_s}$ means the quantity of AQS biochar type (A) produced by waste treatment facility or unit (f) and applied by the off-taker in the non-CEA ($NCEA$) for the soil end-use category (u_s) during the reporting period, in kilograms, worked out using equation 51.

$\left(H/C_{org}\right)^{annual}_{f,A,y}$ means the annual weighted average H/Corg ratio, worked out using equation 13A-1.

T_S means the mean annual soil temperature at the non-CEA, rounded up from zero, in degrees centigrade (°C), determined in accordance with the monitoring requirements.

$M_{T_s}, a_{T_s}, c_{T_s}$ are the power regression parameters corresponding to the soil temperature (T_S), obtained from the BidCarbon Permanence Factor Calculator.

$\frac{44}{12}$ means molar ratio of carbon dioxide to carbon.

Sub-method 2

(3) For equation 3, $CS^{100\text{yr}}_{Rc,NCEA,A,u_s}$ is given by the following (***equation 9***):

$$CS^{100\text{yr}}_{RC,NCEA,f,A,u_s} = Q_{Apply,NCEA,f,A,u_s} \times C_{cog,Table2} \times \frac{\min\left(M_{T_s} - a_{T_s} \times (0.2)^{c_{T_s}}, 100\right)}{100} \times \frac{44}{12}$$

where:

$C_{cog,Table2}$ means the organic carbon ratio, determined in accordance with the default values in Table 2 as specified in paragraph 50.(1)(b).

0.2 means the molar ratio of hydrogen to organic carbon, with a default value of 0.2 as required under subparagraph 51.(2)(b)(ii).

49. Calculating carbon storage over a 200-year time horizon from AQS biochar application in CEAs

(1) The quantity of carbon storage over a 200-year time horizon attributable to the application of AQS biochar type in a CEA for the soil end-use category must be worked out using one of the following methods, as applicable:

(2) For equation 5, $CS^{200\text{yr}}_{Rc,CEA,A,u_s}$ is given by the following (***equation 10***):

$$CS^{200yr}_{Rc,CEA,f,A,u_s} = Q_{Apply,CEA,f,A,u_s} \times C_{org,f,A,y} \times F^{annual}_{durable,200} \times \frac{44}{12}$$

where:

$CS^{200\text{yr}}_{Rc,CEA,f,A,u_s}$ means the quantity of carbon storage over a 200-year time horizon resulting from the application of AQS biochar type (A) produced by waste treatment facility or unit (f) in the CEA (CEA) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms CO_2-e.

Q_{Apply,CEA,f,A,u_s} means the quantity of AQS biochar type (A) produced by waste treatment facility or unit (f) and applied by the off-taker in the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, in kilograms, worked out using equation 50.

$C_{org,f,A,y}$ means the organic carbon content of AQS biochar type (A) produced at waste treatment facility or unit (f) in year (y), in percentage (%), worked out using equation 12.

$F^{annual}_{durable,200}$ means the carbon persistence factor over a 200-year time horizon calculated using the annual weighted average H/C_{org} ratio, worked out using equation 11.

(3) For equation 10, $F^{annual}_{durable,200}$ is given by the following (***equation 11***):

$$F^{annual}_{durable,200} = \min\left(0.95, \max\left(0, 0.885 - 0.137 \cdot \left(\left(H/C_{org}\right)^{annual}_{f,A,y}\right)^{0.5} - 0.002 \cdot T_s\right)\right)$$

where:

$\left(H/C_{org}\right)^{annual}_{f,A,y}$ means the annual weighted average H/Corg ratio, worked out using equation 13A-1.

0.885 represents the intercept parameter for the 200-year persistence function. It is derived from the 100-year intercept parameter (α_{100} = 0.90) of the Swedish University of Agricultural Sciences (SLU) model. This derivation scales the decomposition fraction (1−α_{100}) by the logarithmic time factor $\ln(201)/\ln(101) = 1.1491$), a transformation based on established decomposition kinetics principles.

0.137 represents the H/C sensitivity coefficient for the 200-year timescale. It is derived from the corresponding 100-year coefficient (β_{100}= 0.1195) in the SLU model, scaled by the same logarithmic time factor $\ln(201)/\ln(101) = 1.1491$ used for the intercept.

0.5 means the power function exponent applied to the H/C ratio. This value is recommended by SLU research (Azzi et al. 2024) as it provides the optimal empirical fit for long-term biochar persistence predictions.

0.002 means the temperature sensitivity coefficient, expressed in per °C, representing a conservative estimate of the impact of temperature on biochar persistence based on SLU's finding that temperature adjustments have "less impact" (Azzi et al. 2024).

T_S means the mean annual soil temperature at the CEA, rounded up from zero, in degrees centigrade (°C), determined in accordance with the monitoring requirements.

(4) For the 200-year time horizon, the organic carbon content $C_{org,f,A}$ must be determined by laboratory report data in accordance with equation 12.

50. Organic carbon calculated from the sample

(1) The organic carbon content of a biochar sample may be determined using the following methods, in order of preference:

(a) **Laboratory report data** — worked out in accordance with the monitoring requirements; or

(b) **Default value** — the provisions of paragraph (1)(a) are replaced by the values specified by the default organic carbon content factor for organic material in the table in subsection (2) in the reporting period.

Note : For gasification-derived biochar in which the ash component has been fully or partially removed, the carbon content values in the table in subsection (2) should not be used, and the carbon content should instead be measured directly.

(2) The organic carbon content of a biochar sample is calculated using the following formula (***equation 12***):

$$C_{org,f,A,y} = C_{tot,f,A,y} - C_{inorg,f,A,y}$$

where:

$C_{org,f,A,y}$ means the organic carbon content of AQS biochar type (A) produced at waste treatment facility or unit (f) in year (y), in percentage (%).

$C_{tot,f,A,y}$ means the total carbon content of AQS biochar type (A) produced at waste treatment facility or unit (f) in year (y), including both organic and inorganic carbon, in percentage (%), determined in accordance with the monitoring requirements.

$C_{inorg,f,A,y}$ means the inorganic carbon content of AQS biochar type (A) produced at waste treatment facility or unit (f) in year (y), in percentage (%), determined in accordance with the monitoring requirements.

(3) For the purposes of paragraph (1)(b), the default organic carbon (C_{org}) content values are set out in Table 2.

Table 2
The following values represent the default organic carbon content factor for organic material

item	Biochar classification type	Organic material			Production device	Default values for	
		Category	Biochar type	Biochar sub-type		C_{org}	Source
1	HCB (High Carbon low ash biochar)	Wood and wood waste, energy crops or garden and park.	Wood and wood waste	Sawdust, wood chips, wood scrap, etc.	Pyrolysis technology	0.76	(1)
					Gasification technology	0.63	(1)
2			Vegetation	Shrubs, branches, logs, etc.	Pyrolysis technology	0.76	(1)
					Gasification technology	0.63	(1)
3				bamboo	Pyrolysis technology	0.71	(1)
					Gasification technology	0.51	(1)
4		Waste from processing of agricultural products	nut shells and pits		Pyrolysis technology	0.72	(1)
					Gasification technology	0.52	(1)
5		Energy crops	herbaceous		Pyrolysis technology	0.64	(1)
					Gasification technology	0.38	(1)
6	MCB (Medium Carbon medium ash biochar)	Agricultural waste	wheat straw		Pyrolysis technology	0.63	(1)
					Gasification technology	0.38	(1)
7			maize stover		Pyrolysis technology	0.67	(1)
					Gasification technology	0.45	(1)
8			bagasse		Pyrolysis technology	0.61	(1)

				Gasification technology	0.43	(1)
9	LCB (Low Carbon high ash);	Biosolids	Paper sludge / Sewage sludge	Pyrolysis technology	0.35	(2)
				Gasification technology	0.07	(2)

Note 1: If coffee grounds are used as a raw material, the factor 'nut shells and pits' must be used.

Note 2: If grape branch are used as a raw material, the factor 'vegetation' must be used.

Source :
(1) Ippolito, J.A. et al. (2020) 'Feedstock choice, pyrolysis temperature and type influence biochar characteristics: a comprehensive meta-data analysis review', Biochar, 2(4), pp. 421-438. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC8567415/table/tbl2/

(2) IPCC (2019) '2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories', Vol.4, Chapter 2, Annex 4. Available at: https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch02_Ap4_Biochar.pdf

51. Calculating hydrogen to organic carbon molar ratios

(1) The hydrogen (H) to organic carbon (C_{org}) molar ratio for AQS biochar produced in a given year is calculated as follows (***equation 13***):

$$\left(H/C_{org}\right)_{f,A,y} = \frac{H_{f,A,y}/1.00784}{C_{org,f,A,y}/12.011}$$

where:

$\left(H/C_{org}\right)_{f,A,y}$ means the hydrogen to organic carbon molar ratio for samples from production batches of AQS biochar type (A) produced at waste treatment facility or unit (f) in year (y).

$H_{f,A,y}$ means the hydrogen (H) content of AQS biochar type (A) in samples from waste treatment facility or unit (f) in year (y), in percentage (%), determined in accordance with subsection (2).

$C_{org,f,A,y}$ means the organic carbon (C_{org}) ratio of AQS biochar type (A) in samples from waste treatment facility or unit (f) in year (y), in percentage (%), worked out using equation 12.

f means a waste treatment facility or unit within the network.

A means an AQS biochar type.

y means calendar year.

(2) The value of $\left(H/C_{org}\right)_{f,A,y}$ must be determined in accordance with the following provisions:

(a) **Laboratory report data** — worked out in accordance with the monitoring requirements, and once this option is selected for the first time, it must be implemented annually for the next 3 years; or

(b) **Default values** — where laboratory analysis is not practicable, a default value may be applied subject to the following requirements:

(i) Operational requirement:

(A) must select a qualified small-scale technology unit from the network, and the project activities must be carried out using the selected unit;

(B) Use eligible waste treatment technology five times within the first month of each quarter;

(C) With no more than one occasion counted within any continuous 24-hour period; and

(D) During each counted occasion, temperature must be measured using a pyrometer.

Note : Calibrated in accordance with section 113 for use with a pyrometer.

(ii) Default value application:

(A) Where the measured temperature satisfies the high temperature requirement, a conservative default value of 0.2 may be applied only for agricultural waste activity and charity diversion activity;

Note : Biochar produced at 600 °C exhibited H/C and O/C atomic ratios of <0.2, suggesting higher stability. (Almutairi et al., 2023). Source: https://doi.org/10.1016/j.jssas.2022.05.005

(B) The default value must not be applied for more than 3 consecutive years.

(3) For the purposes of this methodology, cut-offs are defined at 0.1 intervals for H/C_{org} values between 0.2 and 0.7 for biochar samples, as set out in Table 3.

Table 3
H/C_{org} cut-offs

Item	Waste treatment facility or unit temperature	H/C_{org} (mol/mol)	Default H/C_{org} value
1	High temperature	< 0.2	0.2
2	Medium temperature	0.2 - 0.4	N/A
3	Low temperature	0.4 - 0.7	N/A

(4) For the purposes of this methodology, organic material with a H/C_{org} value greater than 0.7 is not considered biochar.

(5) The H/C_{org} ratio directly affects the stability of the biochar and is a key parameter in determining the permanence coefficient for carbon storage calculations (see equations 6, 8 and 11).

51.A.Calculating hydrogen to organic carbon molar ratios

(1) For the purposes of equations 6, 8 and 11, the annual weighted average H/C_{org} ratio for AQS biochar type produced at waste treatment facility or unit in year shall be calculated as follows (***equation 13A-1***):

$$\left(H/C_{org}\right)_{f,A,y}^{annual} = \frac{\sum_{BAT \in B_{f,A,y}} \left(Q_{BAT,y}^{sold} \times \left(H/C_{org}\right)_{BAT}\right)}{\sum_{BAT \in B_{f,A,y}} Q_{BAT,y}^{sold}}$$

where:

$\left(H/C_{org}\right)_{f,A,y}^{annual}$ means the annual weighted average H/C_{org} ratio for AQS biochar type (A) sold from waste treatment facility or unit (f) in calendar year (y).

$B_{f,A,y}$ means the set of all packaging batches of AQS biochar type (A) from waste treatment facility or unit (f) from which biochar was sold in year (y).

BAT means a packaging batch from waste treatment facility or unit (f) defined by its prepackaging date. The batch serves as the unit for AQS testing and determination of BF_{BAT} and $\left(H/C_{org}\right)_{BAT}$.

$Q_{BAT,y}^{sold}$ means the total quantity of biochar from packaging batch (BAT) sold in year (y), in kilograms, worked out using equation 53.

$\left(H/C_{org}\right)_{BAT}$ means the representative H/C_{org} ratio for packaging batch (BAT), worked out using equation 13A-2.

(2) The representative H/C_{org} ratio for a packaging batch shall be determined from samples selected in accordance with section 114.(5), and is calculated as follows (***equation 13A-2***):

$$\left(H/C_{org}\right)_{BAT} = \frac{\sum_{k=1}^{m}\left(H/C_{org}\right)_{k}}{m}$$

where:

$\left(H/C_{org}\right)_{BAT}$ means the representative H/C_{org} ratio for packaging batch (BAT).

$\left(H/C_{org}\right)_{k}$ means the H/C_{org} ratio of sample (k) from packaging batch (BAT), worked out using equation 13.

m means the number of samples selected from packaging batch (BAT) for H/C_{org} analysis, determined in accordance with section 114.(5).

k means an individual sample selected from packaging batch (BAT).

52. Calculate the moisture

Calculate the moisture content as follows (***equation 14***):

$$M_{f,b,y} = \left[\frac{\left(m_{sr} - m_{sd}\right)}{\left(m_{sr} - m_{v}\right)}\right] * 100$$

where:

$M_{f,b,y}$ means the moisture content of the batch (b) produced at the waste treatment facility or unit (f) in year (y), in percentage (%), worked out in accordance with the monitoring requirements.

m_{sr} means mass of vessel and as received sample, in grams.

m_{sd} means mass of vessel and dried sample, in grams.

m_v means mass of vessel, in grams.

53. Permanence coefficients for carbon storage as a function of soil temperature

(1) The soil temperature data for the reporting period in question was reported using the following data, provided by Accredited Data Service Providers:

Applicable to carbon estimation areas

(i) the historical average annual soil temperature for the CEA coordinates over the previous 24 months (surface soil, 0–10 centimetres depth); or

Applicable to non-carbon estimation areas

(ii) the historical annual average soil temperature, at a depth of 0–10 centimetres, for the 24 months preceding the reporting period in the administrative district in which the coordinates are located.

Round a number up

(2) The mean annual soil temperature (T_S) are rounds a number up, away from 0 (zero).

Note : For example:

- if T_S =3.2°C, rounding up to zero decimal places gives 4°C
- if T_S =15.6°C, rounding up gives 16°C

Subdivision B — Calculation of source separation activity

54. Quantity of a waste biomass type—sub-method 1

(1) Subject to subsection (2), the quantity of waste biomass type present under subsection 16.(2)(b) by a charity diversion activity during the reporting period are worked out using the formula (***equation 15***):

$$EO_W = \left(Q_{MC,w} - Q_{RJ,w}\right) \times W_{EO,w}$$

where:

EO_w means the quantity of waste biomass type (w) in the diverted from source by the activity during the reporting period, the determination of mass for commercial transactions, in kilograms.

$Q_{MC,w}$ means the quantity of waste biomass type (w) in the collected (MC) by the activity during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$Q_{RJ,w}$ means the quantity of waste biomass type (w) in the collected by the activity that is rejected (RJ) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$W_{EO,w}$ means the proportion of waste biomass type (w) in the material collected by the activity during the reporting period, worked out:

(a) if the activity is of a kind mentioned in the table in section 57 and $W_{EO,w}$ for the activity has not been worked out in accordance with the monitoring requirements for a previous reporting period—in accordance with:

(i) the table in section 57; or

(ii) the monitoring requirements; or

(b) otherwise—in accordance with the monitoring requirements.

w means a waste biomass type.

(2) If the amount worked out under subsection (1) for a waste biomass type is less than zero, the quantity of the waste biomass type diverted from source by the activity during the reporting period is taken to be zero.

If the amount worked out under subsection (1) for a waste biomass type is less than zero, the quantity of the waste biomass type diverted from source by the activity during the reporting period will be considered zero.

55. Quantity of a waste biomass type—sub-method 2

(1) The quantity of waste biomass type (w) diverted from source by a new waste diversion activity or an expansion waste diversion activity during a reporting period is worked out as follows:

(a) in accordance with subsection (2), work out the quantity of waste biomass type (w) diverted from source by the activity to each nominated waste treatment facility or unit in the network for the activity during the reporting period;

(b) add together the quantity worked out for each waste treatment facility or unit.

Note : The project proponent must notify the Working Body if there is a change to which waste treatment facility or unit will process the waste biomass type diverted from source (see subsection 81.(3)).

(2) Subject to subsection (3), the quantity of waste biomass type (w) diverted from source by a new waste diversion activity or an expansion waste diversion activity to a waste treatment facility or unit during a reporting period are worked out using the formula (***equation 16***):

$$EO_{W,f} = \left(Q_{MC,f} - Q_{RJ,f}\right) \times W_{EO,w} \times EX$$

where:

$EO_{W,f}$ means the quantity of waste biomass type (w) in the waste biomass type diverted from source by the activity to waste treatment facility or unit (f) during the reporting period, the determination of mass for commercial transactions, in kilograms.

$Q_{MC,f}$ means the quantity of material collected by the activity and sent to waste treatment facility or unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$Q_{RJ,f}$ means the quantity of material collected by the activity and sent to waste treatment facility or unit (f) that is rejected during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$W_{EO,w}$ means the proportion of waste biomass type (w) in the material collected by the activity during the reporting period, worked out:

(a) if the activity is of a kind mentioned in the table in section 57 and $W_{EO,w}$ for the activity has not been worked out in accordance with the monitoring requirements for a previous reporting period—in accordance with:

(i) the table in section 57; or

(ii) the monitoring requirements; or

(b) otherwise—in accordance with the monitoring requirements.

EX means:

(a) if the activity is an expansion waste diversion activity—the expansion proportion for the waste biomass type diverted from source by the activity during the reporting period, worked out using equation 18; or

(b) otherwise—1.

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

w means a waste biomass type.

(3) If the quantity worked out under subsection (2) for a waste biomass type (w) is less than zero, the quantity of the waste biomass type diverted from source by the activity to the waste treatment facility or unit during the reporting period is taken to be zero.

56. Quantity of a waste biomass type—sub-method 3

(1) The quantity of waste biomass type (w) diverted from source by an aggregated waste diversion activity during a reporting period (EO_W) is worked out as follows:

(a) in accordance with subsection (2), work out the quantity of waste biomass type (w) diverted from source by the activity to each nominated waste treatment facility or unit for the activity during the reporting period;

(b) add together the quantity worked out for each waste treatment facility or unit.

Note : The waste biomass type diverted from source by the subactivities included in the aggregated waste diversion activity must be processed at a nominated waste treatment facility or unit (see paragraph 14.(1)(b)). However, the facility that processes the material diverted by the subactivities may change during a reporting period.

Note : The project proponent must notify the Working Body if there is a change to which waste treatment facility or unit is to process the waste biomass type diverted from source (see subsection 81.(3)).

(2) Subject to subsection (3), the quantity of waste biomass type (w) diverted from source by an aggregated waste diversion activity to a waste treatment facility or unit during a reporting period are worked out using the formula (***equation 17***):

$$EO_{w,f} = \sum_{sa} \left[\left(Q_{MC,sa,f} - Q_{RJ,sa,f} \right) \times W_{EO,w,sa} \times EX_{sa} \right]$$

where:

$EO_{W,f}$ means the quantity of waste biomass type (w) diverted from source by the aggregated waste diversion activity to waste treatment facility or unit (f) during the reporting period, the determination of mass for commercial transactions, in kilograms.

$Q_{MC,sa,f}$ means the quantity of material collected by subactivity (sa) and sent to waste treatment facility or unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$Q_{RJ,sa,f}$ means the quantity of material collected by subactivity (sa) and sent to waste treatment facility or unit (f) that is rejected during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$W_{EO,w,sa}$ means the proportion of waste biomass type (w) in the material collected by subactivity (sa) during the reporting period, worked out:

(a) if the subactivity is of a kind mentioned in the table in section 57 and $W_{EO,w,sa}$ for the subactivity has not been worked out in accordance with the monitoring requirements for a previous reporting period—in accordance with:
(i) the table in section 57; or
(ii) the monitoring requirements; or
(b) otherwise—in accordance with the monitoring requirements.

EX_{sa} means:
(a) if subactivity (sa) would otherwise be an expansion waste diversion activity—the expansion proportion for the waste biomass type diverted from source by the subactivity during the reporting period, worked out as EX using equation 18; or
(b) otherwise—1.

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the aggregated waste diversion activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

sa means a subactivity included in the aggregated waste diversion activity, other than a subactivity that is not included in the calculation of the accredited AWT facility for the reporting period in accordance with section 43.

w means a waste biomass type.

(3) If the quantity worked out under subsection (2) for a waste biomass type is less than zero, the quantity of the waste biomass type diverted from source by the aggregated waste diversion activity to the waste treatment facility or unit during the reporting period is taken to be zero.

57. Default proportion of waste biomass type w in material collected

The following table sets out the default proportion of waste biomass type (w) in material collected by a new waste diversion activity, an expansion activity, or a subactivity in an aggregated waste diversion activity, of a particular kind.

Table 4
Proportion of waste biomass type w in material collected ($W_{EO,w}$)

Item	Kind of activity or subactivity	Proportion of waste biomass type (w)			
		Nut shells and pits	branches	bagasse	Wood and wood waste
1	Agricultural waste	0.00	1.00	0.00	0.00
2	Municipal garden and park waste	0.00	0.96	0.00	0.00
3	Primary processing waste	1.00	0.00	1.00	0.00
4	Wood and wood waste	0.00	0.00	0.00	1.00

58. Expansion waste diversion activity proportion

The expansion proportion for the waste biomass type diverted from source by an expansion waste diversion activity, or a subactivity that would otherwise be an expansion waste diversion activity, during a reporting period are worked out using the formula (***equation 18***):

$$EX = 1 - \frac{\sum_s \left(HQ_{B,s} \times V_{B,s}\right)}{\sum_s \left(Q_{B,s} \times V_{B,s}\right)}$$

where:

EX means the expansion proportion for the waste biomass type diverted from source by the activity or subactivity during the reporting period.

$HQ_{B,s}$ means the greatest quantity of source separation bins of bin size (s) that, on any one day during the relevant 24-month period for the project, were used in the activity area to divert the waste biomass type from landfill, worked out using the appropriate evidence that accompanied the application under subsection 31.(2).

$V_{B,s}$ means the volume of source separation bins of bin size (s).

$Q_{B,s}$ means the quantity of source separation bins of bin size (s) that are used in implementing the activity or subactivity during the reporting period, worked out in accordance with the monitoring requirements.

s means a source separation bin size.

59. Total quantity of waste

The total quantity of waste processed at a waste treatment facility or unit during a reporting period, in kilograms, are worked out using the formula (***equation 19***):

$$TW_{w,f} = Q_{TWC,w,f} - \mathrm{Q}_{TRW,w,f}$$

where:

$TW_{w,f}$ means the total quantity of waste processed at waste treatment facility or unit (f) during the reporting period, in kilograms.

$Q_{TWC,w,f}$ means the quantity of waste biomass type (w) returned by waste treatment facility or unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$Q_{TRW,w,f}$ means the quantity of waste biomass type (w) returned to the soil or otherwise not processed during the reporting period, in kilograms, calculated in accordance with the monitoring requirements.

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the source separation activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

w means a waste biomass type.

60. Calculate biochar yield

(1) The mass yield of biochar type (b) produced by the waste treatment facility or unit during the reporting period will be calculated using the following (***equation 20***):

$$Yield_{f,b} = \left(\frac{Q_{f,b}}{TW_{f,w}}\right) \times 100$$

where:

$Yield_{f,b}$ means the mass yield of biochar type (b) produced by the waste treatment facility or unit (f), expressed as a percentage (%).

$Q_{f,b}$ means the quantity of biochar type (b) produced by the waste treatment facility or unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

$TW_{f,w}$ means the quantity of waste biomass type (w) processed at waste treatment facility or unit (f) during the reporting period, in kilograms, worked out using equation 19.

f means an waste treatment facility or unit for the reporting period that is not affected by closures under subsection 27.(2).

w means a waste biomass type.

b means the biochar type produced by the waste treatment facility or unit (f).

(2) The eligible biochar baseline for an accredited AWT facility is 1,500,000 kilograms per calendar year.

Subdivision C—Calculation of project emissions

61. Emissions from irrigation energy use

(1) Emissions from the use of fuel and electricity to irrigate a carbon estimation area must be calculated if new irrigation is an eligible management activity.

(2) The total emissions from irrigation energy in carbon estimation area for the reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 21***):

$$E_{IEnergy,Rc,CEA} = E_{IFuel,Rc,CEA} + E_{IP,Rc,CEA}$$

$E_{IEnergy,Rc,CEA}$ means the total emissions from irrigation energy in carbon estimation area (CEA) for a reporting period (Rc), in tonnes CO_2-e.

$E_{IFuel,Rc,CEA}$ means the emissions from irrigation fuel in the reporting period (Rc) for the carbon estimation area (CEA), in tonnes of CO_2-e, worked out using equation 22.

$E_{IP,Rc,CEA}$ means the emissions from irrigation electricity in the reporting period (Rc) for the carbon estimation area (CEA), in tonnes of CO_2-e, worked out using equation 23.

(3) For equation 21, $E_{IFuel,Rc,CEA}$ is given by the following (***equation 22***):

$$E_{IFuel,Rc,CEA} = \sum_{g=1}^{n} \left(\frac{Q_{I,Rc,CEA} \times EC_F \times EF_{fg}}{1000} \right)$$

where:

$E_{IFuel,Rc,CEA}$ means emissions from irrigation fuel in the reporting period in carbon estimation area (CEA); in tonnes CO_2-e.

$Q_{I,Rc,CEA}$ means quantity of fuel used to irrigate carbon estimation area (CEA) in the reporting period, in kilolitre.

EC_F is the energy content factor for diesel fuel set out in the Weights and Measures Codes of Practice, in gigajoules per kilolitre.

EF_{Fg} is the emissions factor for each gas type g for diesel fuel set out in the Weights and Measures Codes of Practice, in kilograms CO_2-e per gigajoule.

n means number of gas groups g.

Note : The values for EC_F and EF_{Fg} are set out in 'Fuel combustion—liquid fuels and certain petroleum-based products for stationary energy purposes' in 'Schedule — Energy content factors and emission factors' to the Weights and Measures Codes of Practice.

(4) For equation 21, $E_{IP,Rc,CEA}$ is given by the following (***equation 23***):

$$E_{IP,Rc,CEA} = Q_{IP,Rc,CEA} \times \frac{EF_{IP}}{1000}$$

where:

$E_{IP,Rc,CEA}$ means emissions from irrigation electricity in the reporting period in carbon estimation area (CEA), in tonnes CO_2-e.

$Q_{IP,Rc,CEA}$ means quantity of electricity used to irrigate carbon estimation area (CEA) in the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{IP} means emission factor for scope 2 electricity use, in kilograms CO_2-e per kWh.

CEA means a carbon estimation areas within the project area.

(5) For $E_{IP,Rc,CEA}$, if the electricity purchased is measured in gigajoules, the quantity of kilowatt hours must be calculated by dividing the amount of gigajoules by 0.0036.

Note : Values for emission factors for the relevant Country/State/Territory/region are set out in 'Schedule 1—Energy content factors and emission factors' to the Weights and Measures Codes of Practice.

(6) Where there is no new irrigation, $E_{IEnergy,Rc,CEA}$ in subsection (2) is 0.

62. Calculating emissions from transportation of waste biomass type diverted from source

(1) The emissions from the transportation of waste biomass type diverted from source for the reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 24***):

$$E_{Waste} = \sum_{f} E_{T,f}$$

where:

E_{Waste} means the emissions from the transportation of waste biomass type diverted from source for the reporting period, in tonnes CO_2-e.

$E_{T,f}$ means the emissions from the transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) for the reporting period, in tonnes CO_2-e, worked out using equation 25.

f means a waste treatment facility or unit in a network.

(2) For equation 24, $\mathrm{E}_{\mathrm{T,f}}$ is given by the following (***equation 25***):

$$E_{T,f} = ET_{Scope1,f} + ET_{Scope2,f} + ET_{Scope3,f}$$

where:

$E_{T,f}$ means the emissions from the transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) for the reporting period, in tonnes CO_2-e.

$ET_{Scope1,f}$ means scope 1 emissions from transportation of waste biomass type to the waste treatment facility or unit (f) for the reporting period, in tonnes CO_2-e, worked out as follows:

(a) In accordance with the monitoring requirements, if the round-trip road transportation distance is within the threshold specified in paragraph 17.(2)(a), the emissions are 0; or

(b) If the round-trip road transportation distance exceeds the threshold specified in paragraph 17.(2)(a), the emissions must be calculated using one of the following methods, in order of preference:

(i) Fuel consumption method — worked out using equation 26; or

(ii) Distance-based method — where actual fuel consumption data is not available, emissions must be calculated in accordance with CDM Tool 12 — Project and Leakage Emissions from Transportation of Freight, as in force from time to time.

$ET_{Scope2,f}$ means scope 2 emissions from transportation of waste biomass type diverted from source to the waste treatment facility or unit (*f*) for the reporting period, in tonnes CO_2-e, worked out using equation 27.

$ET_{Scope3,f}$ means scope 3 emissions from transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) by third-party logistics companies for the reporting period, in tonnes CO_2-e, worked out using equation 28.

(3) For equation 25, $ET_{Scope1,f}$ is given by the following (***equation 26***):

$$ET_{Scope1,\mathrm{f}} = \sum_{j} \sum_{i} \frac{Q_{F,i,f} \times EC_i \times EF_{i,j}}{1000}$$

where:

$Q_{F,i,f}$ means the quantity of fuel type (*i*) used for transportation of waste biomass type to the waste treatment facility or unit (*f*) for the reporting period, in kilolitres, cubic metres, or gigajoules, determined in accordance with the monitoring requirements;

EC_i means the energy content factor in gigajoules per kilolitre or other appropriate units for fuel type (*i*) determined in accordance the monitoring requirements.

Note : If $Q_{F,i,f}$ is measured in gigajoules, then $EC_i = 1$.

$EC_{i,j}$ means the emissions factor in kilograms of CO_2-e per gigajoule for each gas type (*j*) for fuel type (*i*) determined in accordance with the monitoring requirements.

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the source separation activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

i means a fuel type.

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

(4) For equation 25, $ET_{Scope2,f}$ is given by the following (***equation 27***):

$$ET_{Scope2,f} = \max\left(0, Q_{EC,f} - Q_{Ren,f}\right) \times \frac{EF_{Elec}}{1000}$$

where:

$Q_{EC,f}$ means the quantity of electricity consumed by electric vehicles used for transportation of waste biomass type diverted from source to the waste treatment facility or unit (*f*) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

$Q_{Ren,f}$ means the quantity of eligible renewable electricity used to operate or power vehicles for transportation of waste biomass type to the waste treatment facility or unit (*f*) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{Elec} means the emission factor for electricity, as defined in subsection 7.(3).

(5) For equation 25, $ET_{Scope3,f}$ is given by the following (***equation 28***):

$$ET_{Scope3,f} = \mathrm{E}^{\mathrm{Logistics}}_{T,Scope3,f}$$

where:

$E^{\mathrm{Logistics}}_{T,Scope3,f}$ means scope 3 emissions from transportation of waste biomass type diverted from source to the waste treatment facility or unit by third-party logistics companies, in tonnes CO_2-e, worked out using equation 29.

(6) For equation 28, $E^{\mathrm{Logistics}}_{T,Scope3,f}$ is given by the following (***equation 29***):

$$E^{\mathrm{Logistics}}_{T,Scope3,\mathrm{f}} = E^{\mathrm{Logistics,Fuel}}_{T,Scope3,\mathrm{f}} + E^{\mathrm{Logistics,EV}}_{T,Scope3,\mathrm{f}}$$

where:

$E^{\mathrm{Logistics,Fuel}}_{T,Scope3,\mathrm{f}}$ means scope 3 emissions from the transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) by third-party logistics companies using fuel-powered vehicles, in tonnes of CO_2-e, worked out as follows:

(a) In accordance with the monitoring requirements, if the one-way road transportation distance is within the threshold specified in paragraph 17.(2)(b), the emissions are 0; or

(b) If the one-way road transportation distance exceeds the threshold specified in paragraph 17.(2)(b), the emissions must be calculated using one of the following methods, in order of preference:

(i) Fuel consumption method — worked out using equation 30; or

(ii) Distance-based method — where actual fuel consumption data is not available, emissions must be calculated in accordance with CDM Tool 12 — Project and Leakage Emissions from Transportation of Freight, as in force from time to time.

$E^{\mathrm{Logistics,EV}}_{T,Scope3,f}$ means scope 3 emissions from the transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) by third-party logistics companies using electric vehicles, in tonnes CO_2-e, worked out using equation 31.

(7) For equation 29, $E^{\mathrm{Logistics,Fuel}}_{T,Scope3,\mathrm{f}}$ is given by the following (***equation 30***):

$$E_{T,Scope3,f}^{\text{Logistics,Fuel}} = \sum_{j} \sum_{i} \frac{Q_{F,i,f} \times EC_i \times EF_{i,j}}{1000}$$

where:

$Q_{F,i,\text{f}}$ means the quantity of fuel type (i) used for transportation of waste biomass type to the waste treatment facility or unit (f) for the reporting period, in kilolitres, cubic metres, or gigajoules, determined in accordance with the monitoring requirements;

EC_i means the energy content factor in gigajoules per kilolitre or other appropriate units for fuel type (i) determined in accordance the monitoring requirements.

Note : If $Q_{\text{F,i,f}}$ is measured in gigajoules, then $\text{EC}_\text{i} = 1$.

$EF_{i,j}$ means the emissions factor in kilograms of CO_2-e per gigajoule for each gas type (j) for fuel type (i) determined in accordance with the monitoring requirements.

(8) For equation 29, $E_{T,Scope3,f}^{\text{Logistics,EV}}$ is given by the following (***equation 31***):

$$E_{T,\text{Scope3},f}^{\text{Logistics,EV}} = \max\left(0, Q_{EC,f}^{\text{Logistics}} - Q_{Ren,f}^{\text{Logistics}}\right) \times \frac{EF_{Elec}}{1000}$$

where:

$Q_{EC,f}^{\text{Logistics}}$ means the quantity of electricity consumed by electric vehicles used for transportation of waste biomass type diverted from source to the waste treatment facility or unit (f) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

$Q_{Ren,f}^{\text{Logistics}}$ means the quantity of eligible renewable electricity used to operate or power vehicles for transportation of waste biomass type to the waste treatment facility or unit (f) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

63. Calculating emissions from transportation of AQS biochar to off-taker

(1) The emissions from the transportation of AQS biochar to the off-taker for the reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 32***):

$$E_{Biochar} = \sum_{f} \sum_{d} E_{T,f,d}$$

where:

$E_{Biochar}$ means the total emissions from the transportation of AQS biochar to all off-takers for the reporting period, in tonnes CO_2-e.

$E_{T,f,d}$ means the emissions from transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in tonnes CO_2-e, worked out using equation 33.

f means a waste treatment facility or unit in a network.

d means each delivery destination (off-taker location).

(2) For equation 32, $E_{T,f,d}$ is given by the following (***equation 33***):

$$E_{T,f,d} = ET_{Scope1,f,d} + ET_{Scope2,f,d} + ET_{Scope3,f,d}$$

where:

$ET_{Scope1,f,d}$ means scope 1 emissions from transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d), in tonnes CO2-e, worked out as follows:

(a) In accordance with the monitoring requirements, if the round-trip road transportation distance is within the threshold specified in paragraph 17.(2)(a), the emissions are 0; or

(b) If the round-trip road transportation distance exceeds the threshold specified in paragraph 17.(2)(a), the emissions must be calculated using one of the following methods, in order of preference:

(i) Fuel consumption method — worked out using equation 34; or

(ii) Distance-based method — where actual fuel consumption data is not available, emissions must be calculated in accordance with CDM Tool 12 — Project and Leakage Emissions from Transportation of Freight, as in force from time to time.

$ET_{Scope2,f,d}$ means scope 2 emissions from transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in tonnes CO_2-e, worked out using equation 35.

$ET_{Scope3,f,d}$ means scope 3 emissions from transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in tonnes CO_2-e, worked out using equation 36.

(3) For equation 33, $ET_{Scope1,f,d}$ is given by the following (***equation 34***):

$$ET_{\text{Scope1},f,d} = \sum_{j} \sum_{i} \frac{Q_{F,i,f,d} \times EC_i \times EF_{i,j}}{1000}$$

where:

$Q_{F,i,f,d}$ means the quantity of fuel type (i) used for transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in kilolitres, cubic metres, or gigajoules, worked out in accordance with the monitoring requirements.

EC_i means the energy content factor in gigajoules per kilolitre or other appropriate units for fuel type (i) determined in accordance with the monitoring requirements.

Note : If $Q_{F,i,f,d}$ is measured in gigajoules, then $EC_i = 1$.

$EF_{i,j}$ means the emissions factor in kilograms of CO_2-e per gigajoule for each gas type (j) for fuel type (i) determined in accordance with the monitoring requirements.

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the source separation activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

i means a fuel type.

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

(4) For equation 33, $ET_{Scope2,f,d}$ is given by the following (***equation 35***):

$$ET_{Scope2,f,d} = \max\left(0, Q_{EC,f,d} - Q_{Ren,f,d}\right) \times \frac{EF_{Elec}}{1000}$$

where:

$Q_{EC,f,d}$ means the quantity of electricity consumed by electric vehicles used for transportation of AQS biochar from waste treatment facility or unit (*f*) to off-taker destination (d) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

$Q_{Ren,f,d}$ means the quantity of eligible renewable electricity used to operate or power vehicles for transportation of AQS biochar from waste treatment facility or unit (*f*) to off-taker destination (*d*) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{Elec} means the emission factor for electricity, as defined in subsection 7.(3).

(5) For equation 33, $ET_{Scope3,f,d}$ is given by the following (***equation 36***):

$$ET_{Scope3,f,d} = \mathrm{E}^{\mathrm{Logistics}}_{T,Scope3,f,d}$$

where:

$E^{\mathrm{Logistics}}_{T,Scope3,f,d}$ means the Scope 3 emissions from transportation of AQS biochar from waste treatment facility or unit (*f*) to off-taker destination (*d*) by third-party logistics companies for the reporting period, in tonnes CO_2-e, worked out using equation 37.

(6) For equation 36, $E^{\mathrm{Logistics}}_{T,Scope3,f,d}$ is given by the following (***equation 37***):

$$E^{\mathrm{Logistics}}_{T,Scope3,f,d} = E^{\mathrm{Logistics,Fuel}}_{T,Scope3,f,d} + E^{\mathrm{Logistics,EV}}_{T,Scope3,f,d}$$

where:

$E^{\mathrm{Logistics,Fuel}}_{T,Scope3,f,d}$ means the scope 3 emissions from transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) by third-party logistics companies using fuel-powered vehicles, in tonnes of CO_2-e, worked out as follows:

(a) In accordance with the monitoring requirements, if the one-way road transportation distance is within the threshold specified in paragraph 17.(2)(b), the emissions are 0; or

(b) If the one-way road transportation distance exceeds the threshold specified in paragraph 17.(2)(b), the emissions must be calculated using one of the following methods, in order of preference:

(i) Fuel consumption method — worked out using equation 38; or

(ii) Distance-based method — where actual fuel consumption data is not available, emissions must be calculated in accordance with CDM Tool 12 — Project and Leakage Emissions from Transportation of Freight, as in force from time to time.

$\mathrm{E}^{\mathrm{Logistics,EV}}_{T,Scope3,f,d}$ means the scope 3 emissions from the transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) by third-party logistics

companies using electric vehicles for the reporting period, in tonnes CO_2-e, worked out using equation 39.

(7) For equation 37, $E^{\text{Logistics,Fuel}}_{T,Scope3,f,d}$ is given by the following (***equation 38***):

$$E^{\text{Logistics,Fuel}}_{T,Scope3,f,d} = \sum_{j} \sum_{i} \frac{Q_{F,i,f,d} \times EC_i \times EF_{i,j}}{1000}$$

where:

$Q_{F,i,f,d}$ means the quantity of fuel type (i) used for transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in kilolitres, cubic metres, or gigajoules, worked out in accordance with the monitoring requirements.

EC_i means the energy content factor in gigajoules per kilolitre or other appropriate units for fuel type (i) determined in accordance with the monitoring requirements.

Note : If $Q_{F,i,f,d}$ is measured in gigajoules, then $EC_i = 1$.

$EF_{i,j}$ means the emissions factor in kilograms of CO_2-e per gigajoule for each gas type (j) for fuel type (i) determined in accordance with the monitoring requirements.

(8) For equation 37, $E^{\text{Logistics,EV}}_{T,Scope3,f,d}$ is given by the following (***equation 39***):

$$E^{\text{Logistics,EV}}_{T,Scope3,f,d} = \max\left(0, Q^{\text{Logistics}}_{EC,f,d} - Q^{\text{Logistics}}_{Ren,f,d}\right) \times \frac{EF_{Elec}}{1000}$$

where:

$Q^{\text{Logistics}}_{EC,f,d}$ means the quantity of electricity consumed by electric vehicles operated by third-party logistics companies for the transportation of AQS biochar from waste treatment facility or unit (f) to off-taker destination (d) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

$Q^{\text{Logistics}}_{Ren,f,d}$ means the quantity of eligible renewable electricity used to operate or power vehicles for transportation of waste biomass type to the waste treatment facility or unit (f) for the reporting period, in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{Elec} means the emission factor for electricity, as defined in subsection 7.(3).

64. Calculating processing and comminution emissions

(1) The emissions from processing and comminution for a specific end-use category, in tonnes CO_2-e, are worked out using the following formula (***equation 40***):

$$E_{PC,u} = \sum_{f} E_{PC,f,u}$$

where:

$E_{PC,u}$ means emissions from processing and comminution attributable to end-use category (u) for the reporting period, in tonnes CO_2-e.

$E_{PC,f,u}$ means emissions from processing and comminution of project waste biomass type collected at a waste treatment facility or unit (*f*) attributable to end-use category (u) for the reporting period, in tonnes CO_2-e, worked out using equation 41.

f means a waste treatment facility or unit in a network.

u means an end-use category, being one of the following, with corresponding subscripts used in equations throughout this methodology:

(a) u_s — soil: application of biochar to agricultural soil;

(b) u_c — concrete: incorporation of biochar into concrete or cement-based materials (not currently applicable under this methodology);

(c) u_a — asphalt: incorporation of biochar into asphalt or bituminous materials (not currently applicable under this methodology);

(2) For equation 40, $E_{PC,f,u}$ is given by the following (***equation 41***):

$$E_{PC,f,u} = \left(EPC_{Scope1,f} + EPC_{Scope2,f} \right) \times AF_{f,u}$$

where:

$E_{PC,f,u}$ means the emissions from processing and comminution of project waste biomass type collected at the waste treatment facility or unit (*f*) attributable to end-use category (u) for the reporting period, in tonnes CO_2-e.

$EPC_{Scope1,f}$ means the scope 1 emissions relating to the processing and comminution of project waste biomass type collected at the waste treatment facility or unit (*f*) for the reporting period, in tonnes CO_2-e, worked out using equation 42.

$EPC_{Scope2,f}$ means the scope 2 emissions relating to the processing and comminution of project waste biomass type collected at a waste treatment facility or unit (*f*) for the reporting period, in tonnes CO_2-e, worked out using equation 43.

$AF_{f,u}$ means the allocation factor for end-use category (u) at waste treatment facility or unit (*f*), expressed as a decimal fraction, worked out using equation 51.

(3) For equation 41, $EPC_{Scope1,f}$ is given by the following (***equation 42***):

$$EPC_{Scope1,f} = \sum_{i} \sum_{j} \frac{Q_{F,i,f} \times EC_{\mathrm{i}} \times EF_{ij}}{1000}$$

where:

$EPC_{Scope1,f}$ means the emissions from fuel used by waste treatment facility or unit (*f*) during the reporting period, in tonnes CO_2-e.

$Q_{F,i,f}$ means the quantity of fuel type (*i*) used by waste treatment facility or unit (*f*) during the reporting period, worked out in accordance with the monitoring requirements.

EC_i means:

(a) if $Q_{F,i,f}$ 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 Weights and Measures Codes of Practice 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 to the Weights and Measures Codes of Practice for greenhouse gas type (*j*) fuel type (*i*).

f means an waste treatment facility or unit that is a nominated waste treatment facility or unit for the source separation activity during the reporting period and that is not subject to affected by closedowns under subsection 27.(2).

i means a fuel type.

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

(4) For equation 41, $EPC_{Scope2,f}$ is given by the following (***equation 43***):

$$EPC_{Scope2,f} = Q_{EPC,f} \times \frac{EF_{Elec}}{1000}$$

where:

$EPC_{Scope2,f}$ means scope 2 emissions relating to the processing and comminution of project waste biomass type collected at the waste treatment facility or unit (*f*) for the reporting period, in tonnes CO_2-e.

$Q_{EPC,f}$ means the quantity of electricity used during the reporting period in relation to the processing and comminution of project waste biomass type collected at the waste treatment facility or unit (*f*), in kilowatt hours, worked out in accordance with the monitoring requirements.

EF_{Elec} means the emission factor for electricity, as defined in subsection 7.(3).

(5) Where there is no processing and comminution of biochar, E_{PC} in subsection (1) is 0.

65. Calculation of emissions from biochar production

(1) The emissions of a waste treatment facility or unit for biochar production during a reporting period, in tonnes CO_2-e, are calculated using:

(a) Sub-method 1 in subsection (3), when the small-scale technology unit only produces biochar; or

(b) Sub-method 2 in subsection (5), when biochar is produced incidentally from TLUD stoves, whose primary purpose is cooking; or

(c) Sub-method 3 in subsection (7), when the AWT facility only produces biochar.

(2) Sub-method 2 applies to methane emissions from TLUD stoves as small-scale technology units and adopts a pro-rata approach, apportioning emissions between cooking and biochar production and accounting only for the proportion attributable to biochar production.

Sub-method 1

(3) For the purposes of apportioning these emissions to specific end-use categories, the emissions attributable to end-use category, are worked out using the formula (***equation 44***):

$$E_{prod,u} = E_{prod} \times AF_{f,u}$$

where:

$E_{prod,u}$ means the emissions from small-scale technology units attributable to end-use category (u) for the reporting period, in tonnes CO_2-e.

E_{prod} means the total emissions of small-scale technology units for biochar production in a reporting period, in tonnes CO_2-e, worked out using equation 45.

$AF_{f,u}$ means the allocation factor for end-use category (u) at small-scale technology unit (f), worked out using equation 49.

(4) For equation 44, E_{prod} is given by the following (***equation 45***):

$$E_{prod} = \sum_{i,f} \left[EF_{j,f} \times Q_{f,b} \times \gamma_j \right] \times GWP_{CH4}$$

where:

$EF_{j,f}$ means the total emission factor for greenhouse gas type (j) from biochar production at small-scale technology unit (f), in grams greenhouse gas / kilograms of biochar, worked out in accordance with the monitoring requirements.

$Q_{f,b}$ means the quantity of biochar type (b) processed and produced by the small-scale technology unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

f means a small-scale technology unit within a network.

j means a greenhouse gas type, being CH_4.

b means the biochar type produced by the small-scale technology unit (f).

γ_j means the factor to the coefficient that converts grams to tonnes of greenhouse gas type (j) — 0.000001.

GWP_{CH4} means the global warming potential value of AR6 for methane set out in section 2.2 of the GHGR Rule.

Sub-method 2

(5) The emissions from TLUD stoves, considered small-scale technology units, for biochar production during a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 46***):

$$E_{prod,u} = E_{prod} \times AF_{f,u}$$

where:

$E_{prod,u}$ means the emissions from TLUD stoves attributable to end-use category (u) for the reporting period, in tonnes CO_2-e.

E_{prod} means the total emissions of small-scale technology units for biochar production in a reporting period, in tonnes CO_2-e, worked out using equation 47.

$AF_{f,u}$ means the allocation factor for end-use category (u) at small-scale technology unit (f), worked out using equation 49.

(6) For equation 46, E_{prod} is given by the following (***equation 47***):

$$E_{prod} = Q_{f,b} \times \left(EF_{j,f} \times 1.2 \right) \times \frac{Q_{f,b} \times LLV_b}{m_w \times LLV_w} \times GWP_{CH_4} \times \gamma_j$$

where:

E_{prod} means the total emissions from production for the reporting period, in tonnes CO_2-e.

$EF_{j,f}$ means the emission factor for greenhouse gas type (j) from biochar production at small-scale technology unit (f), in grams greenhouse gas / kilograms of biochar, worked out in accordance with the monitoring requirements.

$Q_{f,b}$ means the quantity of biochar type (b) produced by the small-scale technology unit (f) during the reporting period, in kilograms, worked out in accordance with the monitoring requirements.

1.2 means the security margin factor, calculated as the mean CH_4 emissions of the test runs plus a 20% security margin.

LLV_b means the lower calorific value (LLV) of biochar type (b), in kilojoules per kilogram (kJ/kg), worked out in accordance with the monitoring requirements.

LLV_w means the lower caloric value (LLV) of waste biomass type (w), in kilojoules per kilogram (kJ/kg), worked out in accordance with the monitoring requirements.

m_w means the dry matter mass of waste biomass type (w), in kilograms.

w means a waste biomass type.

Sub-method 3

(7) The emissions of accredited AWT facility for biochar production in a reporting period, in tonnes CO_2-e, are worked out using the formula (***equation 48***):

$$E_{prod} = 0$$

where:

E_{prod} means the emissions from production at an accredited AWT facility for the reporting period, in tonnes CO_2-e.

(7)(A) For the purposes of apportioning these emissions to specific end-use categories, $E_{prod,u}$ = 0 for all end-use categories (u).

Subdivision D — Allocation of emissions for multiple end-use applications

66. Allocation factor for multiple end-use categories

(1) For the purposes of apportioning emissions to specific end-use categories, the allocation factor must be worked out using the following formula (***equation 49***):

$$AF_{f,u} = \frac{Q_{Apply,CEA,f,A,u_s} + Q_{Apply,NCEA,f,A,u_s}}{\sum_c Q_{f,A,c}}$$

where:

$AF_{f,u}$ means the allocation factor for end-use category (u) at waste treatment facility or unit (f), expressed as a decimal fraction.

Q_{Apply,CEA,f,A,u_s} means the quantity of AQS biochar type (A) applied by the off-taker in the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, in kilograms, worked out using equation 50.

$Q_{Apply,NCEA,f,A,u_s}$ means the quantity of AQS biochar type (A) applied by the off-taker in the non-carbon estimation area ($NCEA$) for the soil end-use category (u_s) during the reporting period, in kilograms, worked out using equation 51.

$\sum_{c} Q_{f,A,c}$ means the total quantity of biochar produced at waste treatment facility or unit (f) for all end-use categories during the reporting period, in kilograms, determined in accordance with the monitoring requirements.

u and c denote end-use categories, being those listed in subsection 64.(1). with subscripts u_s, u_c , u_a as applicable.

(2) Where a waste treatment facility or unit produces biochar for a single end-use category only, the allocation factor $AF_{f,u}$ = 1.

Note : Under this methodology, AQS biochar may only be used for the end-use category specified in paragraph 64.(1)(a) (u_s—soil application of biochar to agricultural soil).

Subdivision E—Calculation of the quantity of AQS Biochar applied

67. Calculation of the quantity of AQS biochar applied by off-takers in the carbon estimation area

(1) The quantity of AQS biochar applied by off-taker during the reporting period was calculated using the following (***equation 50***):

$$Q_{Apply,CEA,f,A,u_s} = \sum_{BAT=1}^{TotalBAT_f} \sum_{o \in O_{BAT}} \left[\left(DD_{BAT,o}^{CEA} - NBA_{BAT,o}^{CEA} \right) \times W_{BAT} \times BF_{BAT} \right]$$

where:

Q_{Apply,CEA,f,A,u_s} means the quantity of AQS biochar type (A) applied by the off-taker in the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, in kilograms.

f means a waste treatment facility or unit within the network.

$TotalBAT_f$ means the total number of batches transferred during the reporting period.

O_{BAT} means the set of all orders generated from batch (BAT).

BAT means a packaging batch from waste treatment facility or unit (f) defined by its prepackaging date. The batch serves as the unit for AQS testing and determination of BF_{BAT} and $\left(H/C_{org} \right)_{BAT}$.

$DD_{BAT,o}^{CEA}$ means the number of bags of AQS biochar type (A) from batch (BAT) allocated to order (o) and ***delivered*** to the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, with the determination of mass for commercial transactions, determined in accordance with the monitoring requirements.

$NBA_{BAT,o}^{CEA}$ means the number of bags from batch (BAT) allocated to order (o) and delivered to the carbon estimation area (CEA) that have ***not been applied*** by the off-taker

for the soil end-use category (u_s) as at the end of the reporting period, and such bags shall be permanently disqualified from carbon removal and shall not be carried forward to any future reporting periods, determined in accordance with the monitoring requirements.

W_{BAT} means the nominal quantity per bag of AQS biochar type, as marked on the package, in kilograms, determined in accordance with the monitoring requirements.

BF_{BAT} means the AQS adjustment factor for batch (BAT), determined in accordance with equation 52.

A means an AQS biochar type in respect of which a prepackaged form is published in the Prepackaged Register.

Note : All biochar must be transferred to the off-taker in packages that are registered in accordance with the Biochar Trade Rule.

CEA means a carbon estimation areas within the project area.

u_s denotes the end-use category for soil application of biochar to agricultural soil, as listed in paragraph 64.(1)(a).

(2) For a specific order, the following circumstances shall result in all bags from that order being included in $NBA^{CEA}_{BAT,o}$ (i.e., treated as not applied):

(a) where no AQS biochar has been transferred to off-takers outside the project area; or

(b) where, for a specific order or delivery, the off-taker has not applied any of the AQS biochar received; or

Note: The treatment of unapplied bags, including those exceeding the storage period or expiry date, is set out in subsections 71.(3) and (4).

(c) where AQS biochar has not been applied in accordance with the requirements of paragraph 24.(5)(c).

68. Calculation of the quantity of AQS biochar applied by off-takers in the non-carbon estimation area

(1) The quantity of AQS biochar applied by off-takers in the non-CEA during the reporting period was calculated using the following (***equation 51***):

$$Q_{Apply,NCEA,f,A,u_s} = \sum_{BAT=1}^{TotalBAT_f} \sum_{o \in O_{BAT}} \left[\left(DD^{NCEA}_{BAT,o} - NBA^{NCEA}_{BAT,o} \right) \times W_{BAT} \times BF_{BAT} \right]$$

where:

$Q_{Apply,NCEA,f,A,u_s}$ means the quantity of AQS biochar type (A) applied by the off-taker in the non-carbon estimation area ($NCEA$) for the soil end-use category (u_s) during the reporting period (Rc), in kilograms.

$DD^{NCEA}_{BAT,o}$ means the number of bags of AQS biochar type (A) from batch (BAT) allocated to order (o) and delivered to the non-carbon estimation area ($NCEA$) for the soil end-use category (u_s) during the reporting period, with the determination of mass for commercial transactions, determined in accordance with the monitoring requirements.

$NBA^{NCEA}_{BAT,o}$ means the number of bags from batch (BAT) allocated to order (o) and delivered to the non-carbon estimation area ($NCEA$) that have not been applied by the off-taker for the soil end-use category (u_s) as at the end of the reporting period, and such bags shall be permanently disqualified from carbon removal and shall not be carried

forward to any future reporting periods, determined in accordance with the monitoring requirements.

f, u_s, W_{BAT}, BF_{BAT}, $TotalBAT_f$, BAT and O_{BAT} has the meaning given by section 67.

$NCEA$ means a non-carbon estimation area.

(2) For a specific order, the following circumstances shall result in all bags from that order being included in $NBA_{BAT,o}^{NCEA}$ (i.e., treated as not applied):

(a) where no AQS biochar has been transferred to off-takers outside the project area; or

(b) where, for a specific order or delivery, the off-taker has not applied any of the AQS biochar received; or

Note: The treatment of unapplied bags, including those exceeding the storage period or expiry date, is set out in subsections 71.(3) and (4).

(c) where AQS biochar has not been applied in accordance with the requirements of paragraph 24.(5)(c).

69. Batch consistency and adjustment factors

The AQS adjustment factor BF must be determined as follows (***equation 52***):

$$BF_{BAT} = \begin{cases} 0 & \text{for shortfall under section 4, Schedule 2} \\ 0.975 & \text{for shortfall under section 3, Schedule 2} \\ 1 & \text{for no shortfall} \end{cases}$$

where:

BF_{BAT} means the AQS adjustment factor for packaging batch (BAT), determined based on AQS test results in accordance with Schedule 2.

Scenario		Value of BF_{BAT}
(a)	The shortfall of AQS biochar type (A) according to the Average Quantity System including testing under section 4 of Schedule 2	0
(b)	The shortfall of AQS biochar type (A) according to the Average Quantity System, including testing under section 3 of Schedule 2	0.975
(c)	There's no shortfall	1

Note : AQS provides a 97.5% assurance that AQS biochar are the correct quantity within the prescribed tolerances. These tolerances are proportional to the quantity of biochar and related difficulty of accurate filling.

70. Calculation of physical quantity sold from a packaging batch

The AQS adjustment factor BF must be determined as follows (***equation 53***):

$$Q_{BAT}^{sold} = \sum_{o \in O_{BAT}} \left[\left(n_{BAT,o}^{CEA} + n_{BAT,o}^{NCEA} \right) \times W_{BAT} \right]$$

where:

Q_{BAT}^{sold} means the total quantity sold from packaging batch (BAT), in kilograms (physical quantity, prior to AQS adjustment).

O_{BAT} means the set of all orders generated from batch (BAT).

$DD_{BAT,o}^{CEA}$ means the number of bags of AQS biochar type (A) from batch (BAT) allocated to order (o) and delivered to the carbon estimation area (CEA) for the soil end-use category (u_s) during the reporting period, with the determination of mass for commercial transactions, determined in accordance with the monitoring requirements.

$DD_{BAT,o}^{NCEA}$ means the number of bags of AQS biochar type (A) from batch (BAT) allocated to order (o) and delivered to the non-carbon estimation area ($NCEA$) for the soil end-use category (u_s) during the reporting period, with the determination of mass for commercial transactions, determined in accordance with the monitoring requirements.

W_{BAT} means the nominal quantity per bag, as marked on the package, in kilograms, determined in accordance with the monitoring requirements.

BAT means a packaging batch from waste treatment facility or unit (*f*) defined by its prepackaging date. The batch serves as the unit for AQS testing and determination of BF_{BAT} and $\left(H/C_{org}\right)_{BAT}$.

71. Treatment of unapplied bags and batch definition

Batch definition

(1) A production batch consists of biochar produced on a single day under consistent operating conditions. One or more production batches may be combined and prepackaged on the same date to form a packaging batch, provided that all biochar within the packaging batch is prepackaged on that same date.

(2) Each packaging batch of AQS biochar shall be assigned a unique batch identifier based on its prepackaging date. This identifier shall be recorded on all prepackaged bags and associated documentation, and shall be used to trace the packaging batch back to its constituent production batches.

Treatment of unapplied bags

(3) $NBA_{BAT,o}^{CEA}$ and $NBA_{BAT,o}^{NCEA}$ include all bags that have not been applied by the end of the reporting period, irrespective of whether they have exceeded the storage period or expiry date as specified in paragraph 24.(5)(c).

(4) Bags that have exceeded the storage period or expiry date:

- (a) Shall not be counted towards carbon removal in any reporting period;
- (b) Are already deducted from the application quantity through $NBA_{BAT,o}^{CEA}$ and $NBA_{BAT,o'}^{NCEA}$.
- (c) Shall not be carried forward to subsequent reporting periods.

Minimum transfer requirement

(5) At least 80% of the AQS biochar produced under the project during a reporting period must be transferred to off-takers within the project area.

Note : Where AQS biochar is used for internal purposes, such use must be evidenced by accounting vouchers prepared in accordance with the requirements set out in the relevant accounting legislation.

Division 4—Calculation of improvement factor

72. Summary

The improvement factor for a reporting period accounts the PyCCS project over time.

73. Improvement factor

The improvement factor for a reporting period is the improvement factor set out in the following table for the crediting period year in which the reporting period ends.

Table 5
Improvement factors

Item	Crediting period year	Improvement factor
1	1	1.000
2	2	0.979
3	3	0.958
4	4	0.937
5	5	0.916
6	6	0.895
7	7	0.874
8	8 to 25	0.874

Note : The improvement factor applies a yearly decay rate of 2.1% for each of the first seven years only, to account for business-as-usual improvements in waste management and resource recovery.

Part 5— Reporting, Record-keeping, notification and monitoring requirements

The reporting, notification and monitoring requirements in this Part supplement the general requirements relating to those matters set out in requirements and principles made under the Carbon Farming Standard.

Division 1—Reporting requirements

74. Operation of this Division

For paragraph 90.(3)(a) of the Carbon Farming Standard, this Division sets out the information that must be included in each offsets report about a PyCCS project that is an eligible offsets project.

75. Information that must be included in offsets reports— processing and comminution

An offsets report for a reporting period in the crediting period for a PyCCS project must include all of the following information:

(a) a summary of how the components of the net abatement amount have been calculated. It includes a description of the method used to calculate the emissions from the collection of waste from each waste treatment facility or unit that is the source of biochar by the project (under Subdivision D of Division 3 of Part 4);

(b) a description of any changes to the network of facilities or units occurring during the reporting period, including, if applicable, a description of any newly added waste treatment facility or unit.

(c) a description of any increase or decrease in the number of CEAs used in the project during the reporting period, including the location of any new CEAs;

(d) a description of any change to any carbon estimation area used in the project, or any material change in the operation of a carbon estimation area, during the reporting period;

(e) if during the reporting period the project operated in a manner that deviated from that described in the PyCCS project plan—a description of the deviation, including the duration and frequency of the deviation.

76. Information that must be included in offsets reports—source separation activity

(1) The offsets report about an PyCCS project for a reporting period must:

(a) identify each source separation activity (whether an original activity or a potential activity) included in the calculation of the carbon capture for the reporting period; and

(b) include the following information for each such activity:

(i) the local in which the activity area is located (if not included in a previous offsets report about the project);

(ii) for charity diversion activities, new waste diversion activities, and aggregated waste diversion activities that include a subactivity which would otherwise be a new waste diversion activity—the landfill that, during the relevant 24-

month period for the project, received material consisting of the same waste biomass type(s) as the waste biomass type diverted by the activity during the reporting period (if known and not included in a previous offsets report about the project);

(iii) for new waste diversion activities, expansion waste diversion activities and aggregated waste diversion activities, the same is true for each waste treatment facility or unit that was a nominated waste treatment facility or unit for the activity during the reporting period.

(iv) each waste biomass type diverted from source by the activity during the reporting period;

(v) the value of parameter EO_W for the activity for the reporting period, worked out in accordance with section 54 or subsection 55.(1) or 56.(1) (as applicable);

(vi) for charity diversion activities—the value of parameter $Q_{MC,w}$ for the activity for the reporting period, worked out in accordance with the monitoring requirements;

(vii) for new waste diversion activities and expansion waste diversion activities—the value of parameter $Q_{MC,f}$ for each nominated waste treatment facility or unit for the activity for the reporting period, worked out in accordance with the monitoring requirements;

(viii) for aggregated waste diversion activities—the value of parameter $Q_{MC,sa,f}$ for each nominated waste treatment facility or unit for each subactivity for the reporting period, worked out in accordance with the monitoring requirements;

(ix) if the value of parameter $W_{EO,w}$ for the activity, or the value of parameter $W_{EO,w,sa}$ for each subactivity if the activity is an aggregated waste diversion activity, was worked out for the reporting period using waste audits, the results of the waste audits (including a value for each proportion mentioned in paragraphs 98.(5)(a) to (d)); and

(2) if a potential activity has been included in the calculation of the AWT facility for the reporting period because of paragraph 43.(1)(b)—include the same information and evidence as would have been required to be provided under section 31 if the activity were able to be identified at the time the application under section 22 of the Carbon Farming Standard was made in relation to the project; and

(3) if, under subsection 43.(2), the project proponent chooses not to include a particular activity in the calculation of the AWT facility for the reporting period—identify the activity not included and the reasons why it was not included.

77. Information that must be included in offsets reports— Land management strategies and AQS biochar applied to soils

(1) Each offsets report must include the following for the project:

(a) copies of the land management strategies applicable to the project during the reporting period;

(b) a description of the land management activities undertaken during the reporting period including an explanation of:

(i) how eligible management activities have been undertaken in each carbon estimation area during the reporting period; and

(ii) the extent to which the land management activities undertaken have implemented the relevant land management strategies;

(c) in respect of the application of AQS biochar conducted during the reporting period:

(i) any spatial data files required to be created by the Supplement;

(ii) the accuracy of the Navigation Satellite System used to locate and record the location for the application of AQS biochar;

(iii) photographs and videos clearly showing AQS biochar in the carbon estimation area;

(d) the amount of each input and component of each equation or calculation that, under this methodology, is used to work out the net abatement amount for the reporting period;

(e) if activities are undertaken in a reporting period that were restricted under section 24—evidence that those requirements were met;

(f) if the Supplement requires a matter to be documented—that matter;

(g) a written statement from the project proponent verifying that the activities or calculation approaches, have not been undertaken which could be reasonably expected to result in the crediting of non-genuine carbon abatement;

(2) If an offsets report is the first report after the declaration of the project as an eligible offsets project, it must include the following:

(a) the date the eligible management activities started in each carbon estimation area relating to the area added to the project; and

(b) a description of all management undertaken during the reporting period in each carbon estimation area relating to the area added to the project, including the timing and duration of each activity.

Changing carbon estimation areas

(3) If changes are made to the number or boundaries of CEAs within a project, the new CEAs or new boundaries must be identified in the next offsets report that is submitted to the Working Body and that reports on those CEAs.

(4) The map referred to in subsection 20.(4) must be provided to the Working Body with the offsets report referred to in subsection 74.(3).

78. Determination of certain factors and parameters

(1) If, in the circumstances described in paragraph 7.(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 98 for the purpose of working out the AWT facility for an PyCCS 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 value of the parameter and how that value was calculated.

Division 2—Notification requirements

79. Operation of this Division

For paragraph 90.(3)(b) of the Carbon Farming Standard, this Division sets out requirements to notify the Working Body of certain matters relating to a PyCCS project that is an eligible offsets project.

80. Obligation to notify Working Body about changes in project's regulatory approvals

(1) The project proponent must notify the Working Body in writing of any change to the project proponent's relevant authority or other regulatory approvals that has had or may have an impact on the project proponent's ability to continue to implement the PyCCS project, including (without limitation) any such change that occurs during the crediting period.

(2) The project proponent must notify the Working Body of that change as soon as practicable after the project proponent becomes aware that the change has occurred.

81. Notification requirements— Source separated organic waste

Implementation of potential activities

(1) This section applies if:

(a) one or more of an PyCCS project's potential activities are implemented during a reporting period; and

(b) the potential activity is a new waste diversion activity, an expansion waste diversion activity or an aggregated waste diversion activity.

(2) The project proponent must, within 14 days after the potential activity starts to be implemented, notify the Working Body, in writing, of:

(a) each waste treatment facility or unit nominated as a facility at which waste biomass type diverted from source by the activity will be processed; and

(b) each eligible waste treatment technology to be used to process the waste biomass type.

Change to nominated waste treatment facility or unit

(3) If:

(a) an PyCCS project involves the implementation of a new waste diversion activity, an expansion waste diversion activity or an aggregated waste diversion activity; and

(b) there is a change to which waste treatment facility or unit are to process waste biomass type diverted from source by the activity;

the project proponent must, within 14 days after the change occurs, notify the Working Body, in writing, of the change.

(4) A notification under subsection (1) must include:

(a) details of each waste treatment facility or unit that, as a result of the change, is to be nominated as a waste treatment facility or unit at which waste biomass type diverted from source by the activity is to be processed; and

(b) details of each waste treatment facility or unit that has previously been, but is no longer, a nominated waste treatment facility or unit for the activity; and

(c) a description of each eligible waste treatment technology that was, or is to be, used to process the waste biomass type at each waste treatment facility or unit mentioned in paragraph (a) or (b).

Change to sub-activities included in aggregated waste diversion activities

(5) If:

(a) an PyCCS project involves the implementation of an aggregated waste diversion activity; and

(b) the project proponent decides to no longer include a particular subactivity in the aggregated waste diversion activity;

the project proponent must, within 30 days after making the decision, notify the Working Body, in writing, of the decision.

82. Notification requirements—carbon estimation area

(1) The project proponent must notify the Working Body within 60 days of becoming aware that an activity contrary to section 23 or 24 is conducted in the area of a carbon estimation area.

(2) If a land management strategy for the project changes, the project proponent must, within 60 days after the change, notify the Working Body of the change and within 9 months after the change, provide a copy of the new land management strategy to the Working Body.

(3) If the eligible management activities on land that is part of a carbon estimation area changes materially after the end of the first reporting period for the project, the project proponent must, within 60 days after the change, notify the Working Body of:

(a) the nature of the change; and

(b) whether the change is likely to materially impact the application of AQS biochar in the project area.

Division 3—Record-keeping and project monitoring requirements

Note : Other Record-keeping and project monitoring requirements are prescribed in the principles .

Subdivision A—Record-keeping requirements

83. Operation of this Division

For paragraph 90.(3)(d) of the Carbon Farming Standard, this Division sets out:

(d) a requirement to monitor relevant parameters relating to a PyCCS project that is an eligible offsets project (see section 91); and

(e) in the event that the project proponent fails to monitor any parameter as required, a requirement that the project proponent estimates the parameter (see section 99).

84. Record-keeping requirements— land management strategy

(1) The project proponent must keep records of the following:

(a) each land management strategy prepared for the project;

Note : This includes the initial land management strategy and all subsequent revised strategies.

(b) the identity, relevant experience and qualifications of all qualified persons involved in the creation of the land management strategies under section 25;

(c) material and evidence used in the preparation of a land management strategy;

(d) material and evidence supporting any eligible management activities;

(e) material to demonstrate that each eligible management action nominated for a carbon estimation area has been carried out;

(f) each input and calculation used to determine the net abatement amount for the project;

(g) records which demonstrate that the requirements of this methodology and Supplement have been met;

(h) anything which is specified in a land management strategy for the project under paragraph 25.(1)(f);

(i) if activities restricted by section 24 are conducted—evidence that the requirements of section 24 have been met;

(2) The proponent must create and keep records of the result of every calculation completed in accordance with Part 4.

(3) If a project proponent changes an eligible management activity, or any other land management activity, from that set out in the land management strategy, the project proponent must provide the information and evidence required under Subdivision C of Division 1 of Part 3 in relation to the change.

85. Record-keeping requirements—waste audits

(1) If the project proponent chooses to use waste audits to monitor one or more of the project's source separation activities or subactivities, the project proponent must keep a record of evidence that each waste audit undertaken consists of at least 2 audit periods that occur at times representative of relevant seasonal variation.

(2) Records must be kept in accordance with accounting voucher preparation standards to prove that the project was conducted in accordance with this methodology.

86. Record-keeping requirements— accredited AWT facility and qualified small-scale technology unit

Information about accredited AWT facility or qualified small-scale technology unit

(1) The project proponent must also keep a record of the following information about facility or unit:

(a) the address, in the form approved by the Working Body, of every site that is or has been included in a population in the project;

(b) for a site added to the population during the project—the circumstances in which the site was added.

Disposal of qualified small-scale technology unit and components

(2) If, as part of the treatment under the project, the project proponent, the project proponent's agent, or a person contracted by the project proponent:

(a) removes qualified small-scale technology unit (the ***removed system unit***) that is not being directly replaced; or

(b) delivers, installs, or facilitates the delivery or installation of, small-scale technology unit, and that unit replaces other qualified small-scale technology unit (the ***replaced system unit***);

the project proponent must also keep a record of evidence that the removed system unit, or replaced system unit, was disposed of in accordance with relevant State (or similar division) or Territory legislative requirements or the BPS Standard.

(3) If:

(a) as part of the treatment under the project, the project proponent, the project proponent's agent, or a person contracted by the project proponent, (the ***relevant person***) removes a unit component or other equipment that is not removed system unit or replaced system unit; and

(b) the relevant person disposes of the unit component or other equipment; the project proponent must also keep a record of evidence that the disposal of the unit component or other equipment was in accordance with section 87.

87. Disposing of removed or replaced qualified small-scale technology unit

(1) This section applies if the project proponent for the project, the project proponent's agent, or a person contracted by the project proponent, (the ***relevant person***):

(a) removes qualified small-scale technology unit, that is not being directly replaced, as part of the treatment under the project; or

(b) delivers, installs, or facilitates the delivery or installation of, small-scale technology unit (the ***new small-scale technology unit***) as part of the treatment under the project.

(2) The relevant person must take reasonable steps to ensure that the qualified small-scale technology unit that is being removed under paragraph (1)(a), or any qualified small-scale technology unit that is being replaced by the new small-scale technology unit under paragraph (1)(b), is:

(a) disposed of; and

(b) not refurbished, reused or sold.

(3) However, the qualified small-scale technology unit that is being removed or replaced may be sold to a third party to be broken down and recycled as described in subsection (4).

(4) This section does not prevent the metering equipment, pyrometer or waste treatment facility or unit from being broken down into components and recycled.

Subdivision B—Monitoring requirements

88. Monitoring waste biomass type consumption

(1) The waste biomass type consumption from the waste biomass type source or sources chosen for a accredited AWT facility in a population in the project under section 28 must be monitored for the accredited AWT facility for all time periods in the crediting period for the project.

(2) However, there is no requirement to monitor waste biomass type consumption for the following activities that use a qualified small-scale technology unit:
  (a) agricultural waste activity; or
  (b) charity diversion activity.

(3) For the purposes of subsection (2), a qualified small-scale technology unit is used by seasonal smallholder farmers for agricultural waste activity or charity diversion activity, and does not use biomass pellets sold by a waste treatment facility or unit.

(4) Subsection (2) requires the submission of a statutory declaration in support.

89. Monitoring waste biomass type consumption using metering equipment data

(1) This section applies if the project proponent for the project monitors waste biomass type consumption at a accredited AWT facility in the network using metering equipment data.

(2) The project proponent must monitor the consumption of the waste biomass type in the accredited AWT facility during each reporting period using metering equipment that meets the requirements of subsection 31.(3).

90. Data services required for monitoring

(1) Any entity operating a data service that is compliant with Part 5, audited annually and approved by the Working Body, is authorised to act as an Accredited Data Service Providers for waste treatment facility or unit or soil temperature data under this methodology (including Registrants).

(2) The following companies are ***Accredited Data Service Providers***. They provide complex data integration, de-identification and secure data access services to support data sharing:
  (a) the BidCarbon Data Limited; or
  (b) the Dream & Company; or
  (c) a state and territory government bodies.

(3) In this section:
BidCarbon Data Limited means the BidCarbon Big Data Chengdu Limited (Registered in the mainland of China, Taxpayer Identification Number 91510100MA65RX6J3L).
Dream & Company means the Dream Aerospace Industries Limited (Registered in the mainland of China, Taxpayer Identification Number 91510105MA65R0Y9XT).

91. Requirement to monitor certain parameters

(1) The project proponent must, during a reporting period, monitor and determine any parameter that is required to calculate the net abatement amount for the reporting period or a future reporting period:
  (a) in a manner that is consistent with the Weights and Measures Codes of Practice; or
  (b) if the Weights and Measures Codes of Practice does not include any relevant requirements, in a manner that is consistent with relevant standards and other requirements under:

(i) reporting and disseminating information relating to greenhouse gas emissions or greenhouse gas projects under any other law of the Country or of a State (or similar division) or Territory; or

(ii) emissions trading under a law of the Country or of a State (or similar division) or Territory.

(2) Any equipment or device used to monitor a parameter must be calibrated:

(a) in a manner that is consistent with the Sampling and Testing Procedures; and

(b) in a manner that is consistent with the Weights and Measures Codes of Practice; or

(c) if the Weights and Measures Codes of Practice does not include any relevant requirements, by an accredited third-party technician at intervals, and using methods, that are in accordance with the manufacturer's specifications.

92. Requirements to monitor certain parameters—charity diversion activities

(1) The project proponent for an PyCCS project must, for each of the project's charity diversion activities, monitor and determine a parameter set out in an item of the following table in accordance with the instructions in the item.

Table 6
Monitored parameters

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
1	$Q_{MC,w}$ (see equation 15)	Quantity of material collected	Kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—for each load of material collected. **Exemption** Apply for exemption under subsection 88.(2).	Cumulative value for the activity for the reporting period

2	$Q_{RJ,w}$ (see equation 15)	Quantity of rejected material disposed of	Kg	Either: (a) the weighing instrument shall comply with the requirements of subsection 4.(1) of the BITP 6; or (b) the belt weighers shall comply with the requirements of the BITP 7; or (c) Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—for each load of rejected material disposed of. **Exemption** Apply for exemption under subsection 88.(2).	Cumulative value for the activity for the reporting period

(2) Any equipment or device used to monitor a parameter must:

(a) be certified in accordance with the BPS Rule; and

(b) be calibrated by an accredited third party technician at intervals, and using methods, that are in accordance with the manufacturer's specifications.

93. Requirements to monitor certain parameters—other source separation activities

Parameters to be monitored for each nominated waste treatment facility or unit

(1) The project proponent for an PyCCS project must, for each nominated waste treatment facility or unit for each of the project's new waste diversion activities, expansion waste diversion activities and aggregated waste diversion activities, monitor and determine a parameter set out in an item of the following table in accordance with the instructions in the item.

Table 7
Monitored parameters for each nominated waste treatment facility or unit

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements

1	$Q_{MC,f}$ (see equation 16)	Quantity of material collected and sent to the facility or unit	Kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—for each load of material received by the facility, Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation.	Cumulative value for the facility or unit for the reporting period
2	$Q_{RJ,f}$ (see equation 16)	Quantity of rejected material disposed of	Kg	Either: (a) the weighing instrument shall comply with the requirements of subsection 4.(1) of the BITP 6; or (b) the belt weighers shall comply with the requirements of the BITP 7; or (c) Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—for each load of rejected material disposed of	Cumulative value for the facility or unit for the reporting period

3	$Q_{MC,sa,f}$ (see equation 17)	Quantity of material collected by subactivity and sent to the waste treatment facility or unit	Kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—for each load of material received by the facility, Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Exemption** Apply for exemption under subsection 88.(2).	Cumulative value for the facility or unit for the reporting period
4	$Q_{R,sa,f}$ (see equation 17)	Quantity of rejected material disposed of	Kg	Either: (a) the weighing instrument shall comply with the requirements of subsection 4.(1) of the BITP 6; or (b) the belt weighers shall comply with the requirements of the BITP 7; or (c) Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—for each load of rejected material disposed of	Cumulative value for the facility or unit for the reporting period

5	$Q_{TRW,f,w}$ (see equation 19)	Quantity of waste biomass type comminution and returned to the soil in an waste treatment facility or unit.	Kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—for each load of residual waste disposed, it must be comminuted and returned to the soil by the facility or unit.	Cumulative value for the facility or unit for the reporting period
6	$Q_{TWC,f,w}$ (see equation 19)	Quantity of waste received by the facility or unit.	Kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—for each load of waste received by the facility or unit	Cumulative value for the facility or unit for the reporting period
7	$Q_{IP,Rc,CEA}$ (see equation 23)	Quantity of electricity used to irrigate carbon estimation area in the reporting period	kWh or GJ	This is evidenced by compliance with the requirements for preparing accounting vouchers and is apportioned based on the fraction of hectares of the carbon estimation area that are irrigated, as a percentage of the total hectares of irrigated land, and the fuel used to run all the pumps on that land. Where electricity purchased is measured in gigajoules, the quantity of kWh must be calculated by dividing the amount of GJ by 0.0036.	

Parameters to be monitored for each activity or subactivity

(2) The project proponent for an PyCCS project must, for each of the project's new waste diversion activities and expansion waste diversion activities and each subactivity included in each of the project's aggregated waste diversion activities, monitor and determine a parameter set out in an item of the following table in accordance with the instructions in the item.

Table 8
Monitored parameters for each activity or subactivity

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements
1	$Q_{B,s}$ (see equation 18)	Quantity of each size of source separation bins used by the activity or subactivity		Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation.	Total number of source separation bins of each bin size for the activity or subactivity for the reporting period
2	$W_{EO,w}$ (see equation 15 or equation 16)	Proportion of a waste biomass type in material collected by the activity or subactivity	Fraction	If waste audits are undertaken to monitor the activity or subactivity, calculated using the results of the waste audits. **Frequency**—subject to subsection (4), in accordance with section 98.	Either: (a) the waste audit or audits undertaken during the reporting period to monitor the activity or subactivity; or (b) if no waste audits were undertaken during the reporting period—the most recent waste audit undertaken to monitor the activity or subactivity

3	$W_{EO,w,sa}$ (see equation 17)	Proportion of a waste biomass type in material collected by the activity or subactivity	Fraction	If waste audits are undertaken to monitor the activity or subactivity, calculated using the results of the waste audits. **Frequency**—subject to subsection (4), in accordance with section 98.	Either: (a) the waste audit or audits undertaken during the reporting period to monitor the activity or subactivity; or (b) if no waste audits were undertaken during the reporting period—the most recent waste audit undertaken to monitor the activity or subactivity

Parameters $W_{EO,w,sa}$ and $W_{EO,w}$

(3) If the project proponent chooses to use waste audits to monitor parameter $W_{EO,w}$ for a source separation activity, or parameter $W_{EO,w,sa}$ for a subactivity included in an aggregated waste diversion activity, the project proponent must monitor the parameter using waste audits for the activity or subactivity for the whole of the project.

Note: If the project proponent chooses to monitor parameter $W_{EO,w}$ or $W_{EO,w,sa}$ using waste audits and then, during a reporting period, fails to do so, the parameter is determined in accordance with section 101.

Calibration of equipment etc.

(4) Any equipment or device used to monitor a parameter must:

(a) be certified in accordance with the BPS Rule; and

(b) be calibrated by an accredited third party technician at intervals, and using methods, that are in accordance with the manufacturer's specifications.

94. Requirements to monitor certain parameters—Biochar

(1) The project proponent must comply with the monitoring requirements set out in the following table in accordance with the instructions given in the item.

Table 9
Monitored parameters

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)	Determination of parameter from measurements

1	$C_{org,f,A,y}$ (see equation 6, equation 8, or equation 12)	The percentage of organic carbon content of AQS biochar type produced at waste treatment facility or unit in year	%	Paragraphs 50.(1)(a) or (b) requirement. **Frequency—** As required under subsection 114.(4).	Use the default values for organic carbon content in the table in subsection 50.(3) for the crediting period, or laboratory analysis.
2	$C_{tot,f,A,y}$ (see equation 12)	Total carbon content of AQS biochar type sample from facility in year	%	In accordance with section 114. **Frequency**— As required under subsection 114.(4).	Determined by laboratory analysis.
3	$C_{inorg,f,A,y}$ (see equation 12)	Inorganic carbon content of AQS biochar type sample from facility in year	%	In accordance with section 114. **Frequency**— As required under subsection 114.(4).	Determined by laboratory analysis.
4	$H_{f,A,y}$ (see equation 13)	The hydrogen content of AQS biochar type sample from facility in year	%	In accordance with section 114. **Frequency**— As required under subsection 114.(4).	Determined by laboratory analysis.
5	$\left(H/C_{org}\right)_{f,A,y}$ (see equation 13)	The hydrogen to organic carbon molar ratio of AQS biochar type produced at waste treatment facility or unit in year	%	**Either:** 1. The calculation may be performed using the default value specified in paragraph 51.(2)(b); or 2. Alternatively, determined by laboratory analysis of a sample selected in accordance with the joint sampling procedure in subsection 114.(5). **Frequency—** As required under subsection 114.(4).	see paragraph 51.(2)(b).

	$\left(H/C_{org}\right)_{f,A,y}^{annual}$ (see equation 13A-1)			Calculated using equation 13A-1, based on sales quantities (Q_{BAT}^{sold}) and packaging batch H/C ratios ($\left(H/C_{org}\right)_{BAT}$). **Frequency—** For each packaging batch.	see equation 13A-1.
	$\left(H/C_{org}\right)_{BAT}$ (see equation 13A-2)			Calculated as the arithmetic mean of $\left(H/C_{org}\right)_{k}$ from m m samples selected from packaging batch (BAT) in accordance with subsection 114.(4). **Frequency—** For each packaging batch.	see equation 13A-2.
6	T_s (see equation 6, equation 7, equation 8, equation 9, equation 11)	Mean annual soil temperature at the carbon estimation area or non-carbon estimation area	°C	The requirements of section 53 measure soil temperature at CEAs or non-CEAs. **Frequency**— Annually or monthly.	Report as a single value for the reporting period.
7	$M_{f,b,y}$ (see equation 14)	The moisture content of the biochar type, as determined in samples the waste treatment facility or unit in year.	%	In accordance with section 114. **Frequency**— As required under subsection 114.(4).	Determined by laboratory analysis.

Calibration of equipment etc.

(2) Any equipment or device used to monitor a parameter must:

(a) be certified in accordance with the BPS Rule; and

(b) be calibrated by an accredited third party technician at intervals, and using methods, that are in accordance with the manufacturer's specifications.

95. Requirements to monitor certain parameters—Project emissions

The project proponent must comply with the monitoring requirements set out in the following table in accordance with the instructions given in the table.

Table 10
Monitored parameters

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)
1	$ET_{Scope1,f}$ (see equation 25); $E^{Logistics,Fuel}_{T,Scope3,f}$ (see equation 29); $ET_{Scope1,f,d}$ (see equation 33); $E^{Logistics,Fuel}_{T,Scope3,f,d}$ (see equation 37)	The distance of transportation	Kilometre	Records of vehicle operator or records by project participants. **Frequency**—Determined once for each transportation activity for a reference trip using the vehicle odometer or any other appropriate sources (e.g. on-line sources)
3	$Q_{F,i,f}$ (see equation 26 or equation 30); $Q_{F,i,f,d}$ (see equation 34 or equation 38)	Quantity of each fuel type used for transportation of waste biomass type to the facility or unit.	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 or 2.36, or Division 2.4.6, of the Weights and Measures Codes of Practice (as applicable to the fuel type); or (b) evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—continuously

4	EC_i (see equation 26, equation 30, equation 34 or equation 38)	Energy content factor for fuel type	GJ/kL	One of the following: (a) using the energy content factor of fuel type i in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice; (b) estimated by analysis in accordance with Subdivision 2.4.3.2 of the Weights and Measures Codes of Practice; (c) estimated by analysis in accordance with Division 2.4.4 of the Weights and Measures Codes of Practice. However, the option used to work out EC_i must be used for all vehicles that are part of the project, and: (a) if the option in paragraph (b) (above) is used for a reporting period, then only the option in paragraph (b) (above) or (c) may be used for subsequent reporting periods; or (b) if the option in paragraph (c) is used for a reporting period, then that option must be used for subsequent reporting periods. **Frequency**—in accordance with the Weights and Measures Codes of Practice

5	$EF_{i,j}$ (see equation 26, equation 30, equation 34 or equation 38)	Emission factor for gas type released from the combustion of fuel type	kg CO_2e/GJ	Worked out: (a) where j is methane—using the emission factor for methane released from the combustion of fuel type i set out in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice; or (b) where j is nitrous oxide—using the emission factor for nitrous oxide released from the combustion of fuel type i in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice; or (c) where j is carbon dioxide—using one of the following options: (i) using the emission factor for carbon dioxide released from the combustion of fuel type i set out in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice; (ii) in accordance with Division 2.4.3 of the Weights and Measures Codes of Practice; (iii) in accordance with Division 2.4.4 of the Weights and Measures Codes of Practice.

				However, the option used to work out $EF_{i,j}$ where j is carbon dioxide, must be used for all vehicles in the project, and: (a) if the option in subparagraph (c)(ii) is used for a reporting period, then only an option in subparagraph (c)(ii) or (c)(iii) may be used for subsequent reporting periods; or (b) if the option in subparagraph (c)(iii) is used for a reporting period, then that option must be used for subsequent reporting periods. **Frequency**—in accordance with the Weights and Measures Codes of Practice
7	$Q_{EC,f}$ (see equation 27); $Q_{EC,f}^{\text{Logistics}}$ (see equation 31); $Q_{EC,f,d}$ (see equation 35); $Q_{EC,f,d}^{\text{Logistics}}$ (see equation 39)	The quantity of electricity used to operate or power a vehicle or vehicles	Kilowatt hours. If $Q_{EC,f}$, $Q_{EC,f}^{\text{Logistics}}$, $Q_{EC,f,d}$ or $Q_{EC,f,d}^{\text{Logistics}}$ 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	Measured using: (a) a commercial grade meter; or (b) relevant purchase records. **Frequency**—continuously

8	$Q_{Ren,f}$ (see equation 27); $Q_{Ren,f}^{\text{Logistics}}$ (see equation 31); $Q_{Ren,f,d}$ (see equation 35); $Q_{Ren,f,d}^{\text{Logistics}}$ (see equation 39)	The quantity of eligible renewable electricity used to operate or power a vehicle or vehicles	Kilowatt hours. If $Q_{Ren,f}$, $Q_{Ren,f}^{\text{Logistics}}$, $Q_{Ren,f,d}$ or $Q_{Ren,f,d}^{\text{Logistics}}$ 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	Measured using one or more of the following, or derived from measurements from one or more of the following using a mathematical formula with no observable loss of precision: (a) a commercial grade meter; (b) relevant generation records, such as records from an energy retailer or network operator. **Frequency**—continuously
9	$Q_{EPC,f}$ (see equation 43)	Quantity of electricity purchased by the facility or unit	kWh or GJ	Evidenced by invoices, contractual arrangements or industry metering records. If $Q_{EPC,f}$ 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**—if subsection 64.(4) is, or must be, used to calculate $EPC_{Scope2,f}$ for the activity for which the facility or unit is nominated, continuous
10	$EF_{j,f}$ (see equation 45 or equation 47)	The emission factor for greenhouse gas type from biochar production at small-scale technology unit	g GHG/kg biochar	The emission factor must be determined based on the projected carbon emissions information provided in writing by the small-scale technology unit retailer to the unit owner.

11	$Q_{f,b}$ (see equation 20, equation 45 or equation 47)	Quantity of biochar type produced by the waste treatment facility or unit	kg	Measure in accordance with the data management and reporting requirements set out in subsection 104.(1). **Frequency**—daily. For each day that biochar is produced, all output must pass through a weighbridge to be counted in the inventory, these biochar types can be accumulated in the warehouse up to a certain quantity and the weighbridge must comply with the requirements of section 111.
12	LLV_b (see equation 47)	The lower calorific value of the biochar type	kJ	In accordance with section 114. **Frequency**— As required under subsection 114.(4).
13	LLV_w (see equation 47)	The lower calorific value of the waste biomass type	kJ	In accordance with section 114. **Frequency**— As required under subsection 114.(4).

96. Requirements for allocation factor parameters

The project proponent must comply with the monitoring requirements set out in the following table in accordance with the instructions given in the table.

Table 11
Monitored parameters

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)
1	$\sum_{c} Q_{Rc,f,A,c}$ (see equation 49)	Total quantity of biochar produced at waste treatment facility or unit for all end-use categories during the reporting period	kg	Total output records from the facility or unit, which must be evidenced by compliance with the requirements for the preparation of accounting vouchers as set out in the relevant accounting legislation. **Frequency**—Continuous measurement, aggregated monthly or annually.

97. Requirements to monitor certain parameters—AQS biochar applied

The project proponent must comply with the monitoring requirements set out in the following table in accordance with the instructions given in the table.

Table 12
Monitored parameters

Item	Parameter	Data description	Unit	Measurement procedure (including frequency as required)
1	$DD_{BAT,o}^{CEA}$ (see equation 51, or equation 53); $DD_{BAT,o}^{NCEA}$ (see equation 52 or equation 53)	The number of bags of AQS biochar type transferred to the off-takers	bags	1. In accordance with the requirements of subsection 104.(5), user satisfaction surveys must be conducted on a case-by-case basis for the list of users in the Order Management System (OMS); and 2. Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—Continuous, aggregated monthly or annually.

2	$NBA_{BAT,o}^{CEA}$ (see equation 51); $NBA_{BAT,o}^{NCEA}$ (see equation 52)	Number of bags from batch allocated to order and transferred to the off-takers that have not been applied as at the end of the reporting period	bags	1. In accordance with the requirements of subsection 104.(5), user satisfaction surveys must be conducted on a case-by-case basis for the list of users in the Order Management System (OMS); and 2. Evidenced by compliance with the requirements for the preparation of accounting vouchers, as set out in the relevant accounting legislation. **Frequency**—Continuous, aggregated monthly or annually.
3	W_{BAT} (see equation 51, equation 52 or equation 53)	Nominal quantity per bag of packaging batch, as marked on the package, in kilograms, where the prepackaged form of the AQS biochar type is published in the Prepackaged Register	kg	1. Verify that the AQS biochar type is published in the Prepackaged Register; 2. Record the nominal quantity as marked on the package; 3. If the type is not published in the Prepackaged Register, the batch shall not be eligible for carbon removal calculations. **Frequency**—Recorded once for each packaging batch.

98. Requirement to undertake waste audits

(1) The project proponent may choose to undertake waste audits for the purpose of monitoring one or more of the project's source separation activities or subactivities.

Note: If the project proponent chooses to use waste audits to monitor parameter $W_{EO,w}$ for a source separation activity, or parameter $W_{EO,w,sa}$ for a subactivity included in an aggregated waste diversion activity, the project proponent must monitor the parameter using waste audits for the whole of the project (see subsection 107 (3)).

(2) The waste audits for an activity or subactivity must meet the following requirements:

(a) the first waste audit for the activity or subactivity must be undertaken during the first reporting period for the project;

(b) such number of subsequent waste audits as is required by subsection (3) for the activity or subactivity must be undertaken in later reporting periods for the project;

(c) only one waste audit may be undertaken in any 12-month period;

(d) each waste audit must consist of at least 2 audit periods that occur at times representative of relevant seasonal variation;
(e) each audit period must run for at least 1 week;
(f) during each audit period, at least one sample per day must be taken from a randomly selected truck or other bulk container used by the activity or subactivity to divert waste biomass type from landfill.
(g) the number of samples taken during each waste audit must be sufficient to obtain statistical confidence of 95% (plus or minus 5%) for each waste biomass type diverted from source by the activity or subactivity;
(h) the samples taken must comprise aggregated collected waste from whole loads prior to processing;
(i) the aggregated collected waste must be sorted into waste biomass type, other organic waste and inert waste;
(j) all measurements of quantity must be in kilograms.

Note: The project proponent must keep a record of evidence that each waste audit undertaken consists of at least 2 audit periods that occur at times representative of relevant seasonal variation (see section 85).

(3) For the purposes of paragraph (2)(b), the number of subsequent waste audits required for the activity or subactivity is as follows:
(a) if the average annual abatement resulting from all of the project is less than 50,000 tonnes CO_2-e—2;
(b) if the average annual abatement resulting from all of the project is 50,000 tonnes CO_2-e or more and less than 150,000 tonnes CO_2-e—3;
(c) if the average annual abatement resulting from all of the project is 150,000 tonnes CO_2-e or more—5.

(4) The waste audits must be conducted by a person who:
(a) is engaged by the project proponent for that purpose; and
(b) has provided the project proponent with written evidence verifying that the person:
(i) has no conflict of interest in conducting the audit; and
(ii) possesses a relevant university degree; and
(iii) has more than 3 years' experience in waste management and conducting audits; and
(c) at the completion of each waste audit, provides the project proponent with written evidence verifying the results of the waste audit, including the calculations, assumptions, information and inputs used.

(5) For the purposes of paragraph (4)(c), the results must include a value (between zero and 1) for each of the following for each waste audit:
(a) the proportion of waste biomass type in the material collected by the activity or subactivity;
(b) the proportion of ineligible waste biomass type in the material collected by the activity or subactivity;
(c) if the material collected by the activity or subactivity includes more than 1 waste biomass type—the proportion of each waste biomass type in the material.

99. Value of certain parameters may be estimated if project proponent fails to monitor them

(1) This section applies if in any period in a reporting period the project proponent is unable or fails to monitor a parameter that is required to calculate the carbon dioxide net

abatement amount for the reporting period or a future reporting period. In this methodology this period is called the ***non-monitored period***.

(2) In that case, the value of the parameter for that purpose is to be determined for the non-monitored period by the project proponent making a conservative estimate of the parameter having regard to:
   (a) any relevant historical data for the parameter; and
   (b) any other data that relates to the parameter; and
   (c) any other matter the project proponent considers relevant.

(3) The project proponent must make the estimate clearly distinct from other measured records for consideration during auditing and must clearly document any approaches taken to derive any estimates.

(4) The project proponent must make all practicable efforts to minimise the non- monitored period during a reporting period.

(5) To avoid doubt, this section does not prevent the Working Body from taking action under the Carbon Farming Standard, or the requirements, in relation to the project proponent's failure to monitor a parameter as required by the monitoring requirements in this Division.

Note : Examples of action that may be taken include the following:
   (1) If the failure constitutes a breach of a provision in section 160 of the Carbon Farming Standard (which deals with project monitoring requirements), the Working Body may take legal action in respect of the breach;
   (2) if false or misleading information was given to the Working Body in relation to the failure, the Working Body may revoke the project's section 27 declaration under requirements or principles made for the purposes of section 38 of the Carbon Farming Standard.

100. Project monitoring—land management strategy

(1) The project proponent must monitor the implementation of the land management strategy in each project area.

(2) If a land management strategy specifies additional steps to monitor a project in accordance with paragraph 25.(1)(d), those requirements must be met.

101. 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 PyCCS project fails, for a nominated waste treatment facility or unit for a source separation activity or subactivity, to monitor a parameter as required by the monitoring requirements, the value of the parameter for the purpose of working out the AWT facility for the reporting period is to be determined for the facility for the non-monitored period in accordance with the following table.

Table 13
Consequence of not meeting requirement to monitor certain parameters

Item	Parameter	Determination of parameter for non-monitored period

1	Each of the following: (a) $Q_{I,Rc,CEA}$ (see equation 22) (b) $Q_{IP,Rc,CEA}$ (see equation 23) (c) $Q_{F,i,f,d}$ (see equation 34 or equation 38) (d) $Q_{F,i,f}$ (see equation 26 or equation 30); (e) $Q_{EPC,f}$ (see equation 43) (f) $Q_{EC,f}$ (see equation 27) (g) $Q_{EC,f}^{\text{Logistics}}$ (see equation 31) (h) $Q_{EC,f,d}$ (see equation 35) (i) $Q_{EC,f,d}^{\text{Logistics}}$ (see equation 39)	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 Weights and Measures Codes of Practice; 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 either of the following has been worked out in accordance with Division 2.4.3 or 2.4.4 of Weights and Measures Codes of Practice (apart from during the nonmonitored period): (a) EC_i (see equation 26, equation 30, equation 34 or equation 38) (b) $EF_{i,j}$ (see equation 26, equation 30, equation 34 or equation 38)	The project proponent must use the estimate of the parameter where: (a) for any cumulative period of up to 3 months in any 12 months of a crediting period for the project—the factor for fuel type i and greenhouse gas j in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice multiplied by 1.1; and (b) for any period in excess of that 3 months—the factor for fuel type i and greenhouse gas j in Part 3 or 4 of Schedule 1 to the Weights and Measures Codes of Practice multiplied by 1.5.

(2) If, during the non-monitored period, the project proponent fails, for one or more of the project's source separation activities or subactivities, to monitor parameter $W_{EO,w}$ or $W_{EO,w,sa}$ as required by the monitoring requirements, the value of the parameter for the purpose of working out the AWT facility for the reporting period is to be determined for the activity or subactivity by making 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 Weights and Measures Codes of Practice; 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.

(3) Subsection (2) does not apply if the Working Body determines that:

(a) either:

(i) the failure to monitor the parameter is likely to have only a minor or trivial impact on the value of $W_{EO,w}$ or $W_{EO,w,sa}$; or

(ii) alternative means have been applied to calculate a conservative estimate of the parameter; and

(4) The project proponent must make all practicable efforts to minimise the non-monitored period during a reporting period.

(5) In the absence of laboratory analytical data, the qualified small-scale technology unit must satisfy paragraph 51.(2)(b) with H/C_{org} ratios typically less than 0.2, using a default value of 0.2. The pyrometer should be calibrated in accordance with section 113.

(6) If, during a particular period in a reporting period, a project proponent for a PyCCS project fails to monitor a parameter as required by the monitoring requirements for a project area, the value of $Q_{Rc,CEA,A}$ in equation 50 for that reporting period is taken to be 0.

(7) To avoid doubt, this methodology does not prevent the Working Body from taking action under the Carbon Farming Standard, or rule made under the Carbon Farming Standard, in relation to the project proponent's failure to monitor a parameter as required by the methodology.

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

(a) if the failure constitutes a breach of a liquidated damages clauses in section 160 of the Carbon Farming Standard (which deals with project monitoring requirements), the Working Body may take legal action in respect of the breach.

(b) if false or misleading information was given to the Working Body in relation to the failure, the Working Body may revoke the project's section 27 declaration under rule made for the purposes of section 38 of the Carbon Farming Standard;

(c) if the giving of false or misleading information in relation to the failure led to the issue of BidCarbon Removal Units, the Working Body may require all or some of those units to be relinquished under section 76 of the Carbon Farming Standard.

Part 6—Dividing an PyCCS project

102. Operation of this Part

For subsection 65.(2) of the Carbon Farming Standard, this Part sets out requirements for dividing an PyCCS project that is an eligible offsets project.

103. Requirements for division of project

(1) The project may only be divided into parts if the project consists of 2 or more waste treatment facility or unit.

(2) If an PyCCS project is divided into parts, each part must consist of at least one source separation activity and eligible management activity.

Part 7—The requirements for data quality

104. Operation of this Part

Carbon Farming Standard for Waste and Resource Recovery Data and Reporting

(1) The project proponent must provide data to the Accredited Data Service Providers in a consistent and reliable manner in accordance with the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

Note : The Carbon Farming Standard for Waste and Resource Recovery Data and Reporting website was https://www.bidcarbon.org/methods-bcm001

Framework by capability

(2) An Accredited Data Service Provider must be used if the project involves complex data integration.

(3) Accredited Data Service Providers are required to follow the BidCarbon Project Services (BPS) Data Capability Framework Level 2 or Level 3 in their digital design of Part 5.

Note : The BPS Data Capability Framework website was https://www.bidcarbon.org/methods-bcm001

Application for a confidentiality claim

(4) In the event that a project proponent believes that the release of data may identify them, they are entitled to submit a confidentiality claim. This is a request for an investigation to be conducted into the identifiability of the data in question.

Conduct a customer satisfaction survey with the off-taker

(5) The user satisfaction surveys required in Subdivision B of Division 3 of Part 5 are part of the BidCarbon Data Quality Framework and must be accessed by telephone to the order recipient in the Order Management System (OMS) in accordance with the Improving Respondent Cooperation for Telephone Surveys Methodology.

Note : The Improving Respondent Cooperation for Telephone Surveys website was https://publications.gc.ca/collections/collection_2011/tpsgc-pwgsc/P103-2-2007-eng.pdf

105. Data agreements

The charity and project proponent collaborated with stakeholders to develop a Multilateral Data Sharing Agreement (MDSA) that adopts and implements the Carbon Audit Agreement on data sharing. This streamlines the process for the project proponent and simplifies linking new datasets and data reuse. The MDSA supports the development of the Carbon Data Asset (BDA) and the application for Carbon Data Rights Certificates.

106. Quality declarations

(1) Accredited Data Service Providers are required to develop a ***Quality Declarations*** in accordance with the requirements of Part 5 and the BidCarbon Data Quality Framework.

(2) Data quality declarations must contain the following quality latitudes:

(a) institutional environment/context;

(b) relevance;

(c) timeliness;

(d) accuracy;

(e) coherence;

(f) interpretability;

(g) accessibility.

Note : The BidCarbon Data Quality Framework website was https://www.bidcarbon.org/data-quality-framework

(3) Subsection (2) Quality declarations must be prepared in accordance with the formats for quality declarations issued by the Statistical Committee of the Republic of Armenia in respect of the following:

(a) Agriculture, forestry, fishing and food security;

(b) Environment and energy.

Note : The Statistical Committee of the Republic of Armenia website was https://www.armstat.am/en/?nid=545

107. The measurement or quantity of AQS biochar

(1) The ***Average Quantity System*** (AQS) confirms the measurement or quantity of AQS biochar being sold by measure (weight, volume, length, area or number).

(2) AQS is based on recommendations developed by the OIML (OIML R 79 Labelling Requirements in Pre-packages and OIML R 87 Quantity of Product in Pre-packages).

Note 1: The OIML R 79 Labelling Requirements in Pre-packages website was https://www.OIML.org/en/files/pdf_r/r079-e97.pdf/view

Note 2: The OIML R 87 Quantity of Product in Pre-packages website was https://www.OIML.org/en/files/pdf_r/r087-e04.pdf/view

Labelling requirements

(3) The legislation does not allow a shortfall for 'desiccating' AQS biochar.

(4) The following requirements are met to ensure that the off-taker receives the correct information:

(1) The labelling requirements are detailed in the metrological laws enacted in the country where the sale takes place; and

(2) Part 3 of the Biochar Trade Rule.

(5) All AQS biochar for sale must be marked with the net measurement (i.e. the weight of the contents without the packaging).

108. Weight or measure of biobased product deemed to be in accordance with stated quantity

(1) The weight or measure of the biobased product in the packaging shall fulfil section 1.41 of the Biochar Trade Rule.

(2) However, the weight or measure of the biobased product in the package is deemed to be the same as that stated on the package or label if:

(a) the package meets the conditions prescribed by requirements made under paragraph 110.(1)(a); or

(b) the package is 1 package in a lot of packages that meets the conditions prescribed by requirements made under paragraph 110.(1)(b).

109. Earthworm survival rate

(1) A sample of biochar types must be tested for toxicity once per year through Appendix C of the BidCarbon Standard Biochar for Soils.

Note : For details on the BidCarbon Standard Biochar for Soils, please visit: https://www.bidcarbon.org/methods-bcm001

(2) The toxicity test report referred to in subsection (1) must be provided to the Working Body alongside the offsets report.

110. Requirements for purposes of section 105

(1) The methodology may from time to time, on the recommendation of the Biochar Trade Rule, make requirements for the purposes of section 108:

(a) prescribing the conditions that a package must meet in order for the weight or measure of the biobased product in the package to be deemed to be the same as that stated on the package or on a label attached to the package; or

(b) prescribing the conditions that a lot of packages must meet in order for the weight or measure of the biobased product in each package in the lot to be deemed to be the same as that stated on any package in the lot or on a label attached to any package in the lot.

(2) Requirements made under subsection (1) may, for the purposes of determining the conditions to be prescribed:

(a) prescribe:

(i) the statistical basis or method by which packages must be selected for counting, examining, measuring, or weighing; and

(ii) the statistical basis or method by which the minimum number of packages to be selected must be set; and

(iii) the circumstances, if any, in which the minimum number of packages to be selected may be varied; and

(b) prescribe the maximum amount of error allowed in the weight or measure of biobased product in a single selected package; and

(c) prescribe the maximum amount of error allowed in the weight or measure of biobased product in a group of selected packages examined at one time; and

(d) prescribe formulas to determine the weight or measure, and weighted values, of biobased product in a group of selected packages taken from a lot of packages. The formulas must be of such a kind as to ensure that all the packages in the lot of packages from which the group is taken contain, on average, the amount stated on any package in the lot or on any label attached to a package in the lot; and

(e) prescribe the number of packages that makes a group of packages for the purposes of paragraphs (c) and (d). The number may be a specified number or a number within a range of numbers.

111. Weighing instruments used in waste treatment facility or unit

(1) In this methodology, ***overseas weights and measures authority*** means a weights and measures authority of a country that is a full member of the OIML.

(2) Subsection (3) applies where the Working Body is satisfied—

(a) that the type, material and design of any weight, measure, or weighing or measuring instrument is approved by an overseas weights and measures authority, and that the instrument complies with the Biochar Trade Rule; and

(b) that the overseas weights and measures authority, in giving that approval, acted in conformity with the International Recommendations of the OIML.

(3) The Working Body must approve a type of weight, measure, or weighing or measuring instrument if it is satisfied that:

(a) complies with the monitoring requirements of these methodology; and

(b) is suitable for use for trade; and

(c) will not facilitate fraud.

(4) The Working Body has approved that type of weight, measure, or weighing or measuring instrument under subsection (3), no further inquiry or testing is required.

(5) For the purpose of deciding under subsection (3) whether a type of weight, measure, or weighing or measuring instrument is suitable for use for trade and will not facilitate fraud, the Working Body may have regard to the International Recommendations of the OIML.

(6) For the purposes of subsection (2), the fact that a weight, measure, or weighing or measuring instrument bears a mark of approval from an overseas weights and measures authority is sufficient evidence that it has been approved by that authority.

(7) A person must not use, or have in that person's possession for use, in any waste treatment facility or unit, any weighing instrument that does not indicate and record only the true weight of the biobased product being weighed.

(8) Calibration must be done with weights that are consistent with APMP.M.M-K6.1.

Note 1: The APMP.M.M-K6.1 website was https://www.apmpweb.org/

Note 2: The 50 kg stainless steel mass standard website was https://www.bipm.org/documents/20126/48150887/APMP.M.M-K6.1.pdf/ae20a250-cdb7-2dd7-e584-0b0aafc2c7ae

(9) In some countries, weighing instruments are required to be registered with the relevant authorities and are subject to calibration or verification by the competent authorities.

Example: The requirements of the Longquanyi District Government of Sichuan Province, China, regarding weighing instruments can be found on the website: https://www.longquanyi.gov.cn/lqyqzfmhwz_gb/c126942/2026-01/28/content_044af0df0e094e6aa4f88e1e088dc9c0.shtml.

112. Develop a data inventory

Accredited Data Service Providers meet Part 5 requirements in accordance with the Guide to developing a data inventory.

Note : The guide helps PyCCS project identify project data holdings and maintain data inventories. The guide outlines six steps for developing, enhancing, or maintaining a project's data inventory. The Guide to developing a data inventory website was https://www.bidcarbon.com/

113. Pyrometer calibration

If used properly, pyrometer can be used to measure flame temperatures of qualified small-scale technology units and it is recommended that pyrometer calibration be performed in accordance with Appendix II of the Cookstove Durability Protocol published by the Clean Cooking Alliance.

Note : The Cookstove Durability Protocol is on the website: https://cleancooking.org/binary-data/DOCUMENT/file/000/000/89-1.pdf

114. Joint Sampling Procedure for AQS and H/C_{org} Stability Testing

(1) **AQS Sampling**: To verify that a AQS biochar type complies with the Average Quantity System (AQS) requirements specified in the Biochar Trade Rule, the project proponent must draw a sample from a single inspection lot in accordance with the sampling plan defined in the Sampling and Testing Procedures.

(2) **Selection of H/C_{org} Sub-sample**: Upon the successful completion of the AQS testing under paragraph (1) and the determination that the lot is compliant, the project proponent must randomly select one (1) package from the already-drawn AQS sample. The biochar contained within this package will serve as the representative sub-sample for determining the hydrogen-to-organic-carbon molar ratio (H/C_{org}) for that batch.

(3) Prior to submitting any sample for H/C_{org} analysis, the project proponent must submit a formal request to the Working Body, in accordance with the procedures prescribed by the Working Body.

(4) Upon approval of the request, the project proponent must dispatch the sample selected under paragraph (2) to the testing facility approved or designated by the Working Body for that purpose, which may include accredited commercial laboratories, academic institutions, or other facilities as determined by the Working Body.

(5) The sample must be analysed in accordance with the requirements of the BidCarbon Standard for Biochar for Soils.

Note : For details on the BidCarbon Standard Biochar for Soils, please visit: https://www.bidcarbon.org/methods-bcm001

Record-Keeping

(6) The project proponent must retain all records related to the joint sampling procedure, including the linkage between AQS test lots and H/C_{org} analysis samples, the request submitted to the Working Body, and any correspondence or instructions received, in accordance with the requirements prescribed by the Working Body.

Laboratory rotation

(7) Analysis must not be conducted in the same laboratory for 2 consecutive analyses.

Part 8—Sustainability performance reports

115. Operation of this Part

The project proponent must demonstrate that the project delivers positive impacts in relation to the Sustainable Development Goals.

116. Report to be given to the Working Body

The project proponent must prepare a sustainability performance report in accordance with paragraph 213.(1)(A)(b) of the Carbon Farming Standard, and must submit that report to the Working Body pursuant to subsection 213.(2) of the Carbon Farming Standard.

Schedule 1—Division of the project area into one or more carbon estimation areas

1. Carbon estimation areas (CEAs), exclusion areas and emissions accounting areas

(1) The project proponent must map land within a project area for the project into one or more ***carbon estimation areas*** (CEAs) such that:

(a) all the land in each carbon estimation area:

(i) is eligible land; and

(ii) is subject to the carrying out or maintenance of at least one eligible management activity until the end of the reporting period for the project; and

(iii) is within a single State (or similar division) or Territory; and

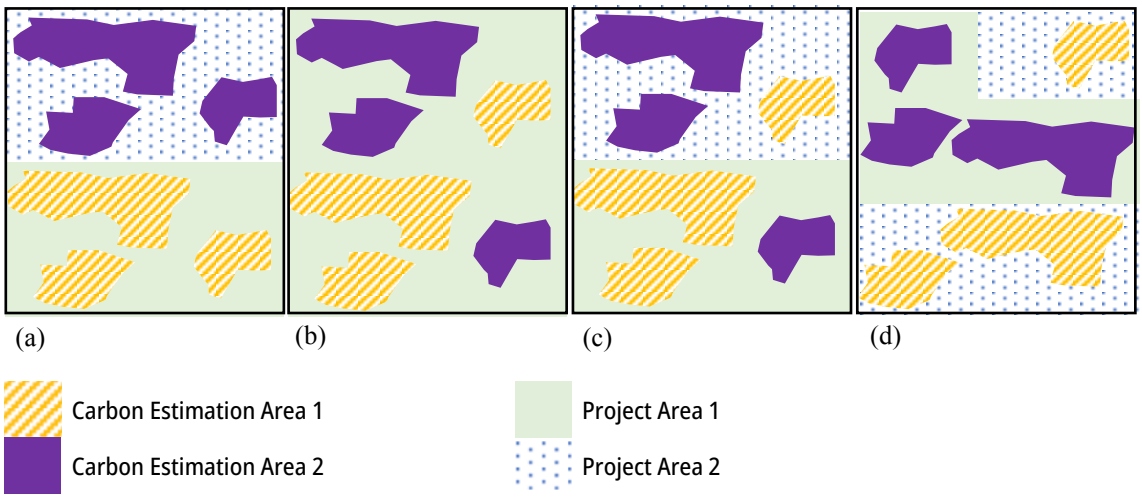
(iv) has identical responsible landholders; and

(b) in accordance with the BidCarbon Mapping Guidelines; and

(c) the mapping is completed, and provided to the Working Body as required by the Supplement for each carbon estimation area.

(2) The project proponent may map non-contiguous parts of a project area as a single carbon estimation area, where the furthest boundaries of non-contiguous areas do not exceed 10 kilometres in distance from each other within a singular carbon estimation area. Figure 1 includes two examples of carbon estimation area distributions which would be allowed (figure 1 (a&b)), and two examples of carbon estimation area distributions which would not be allowed (figure 1(c&d)).

Figure 1: Examples of the relationship between project areas and carbon estimation areas.



Note : In all examples carbon estimation area 1 and carbon estimation area 2 are made up of three non-contiguous parts: (a) shows each carbon estimation area is contained entirely within a contiguous project area; (b) shows two carbon estimation areas contained within 1 project area; (c) shows both carbon estimation areas have area across 2 project areas; (d) shows each carbon estimation area is contained entirely within a contiguous project area however, the project areas are non-contiguous.

(3) The boundaries of a carbon estimation area may be revised only to merge and split existing carbon estimation areas in accordance with requirements in the Supplement.

(4) The project proponent must not remove project areas which would remove part of a carbon estimation area, unless such removal is provided for in, and meets the requirements of, the Supplement.

(5) The project proponent may map other land within the project area for the project into one or more ***exclusion areas*** such that:

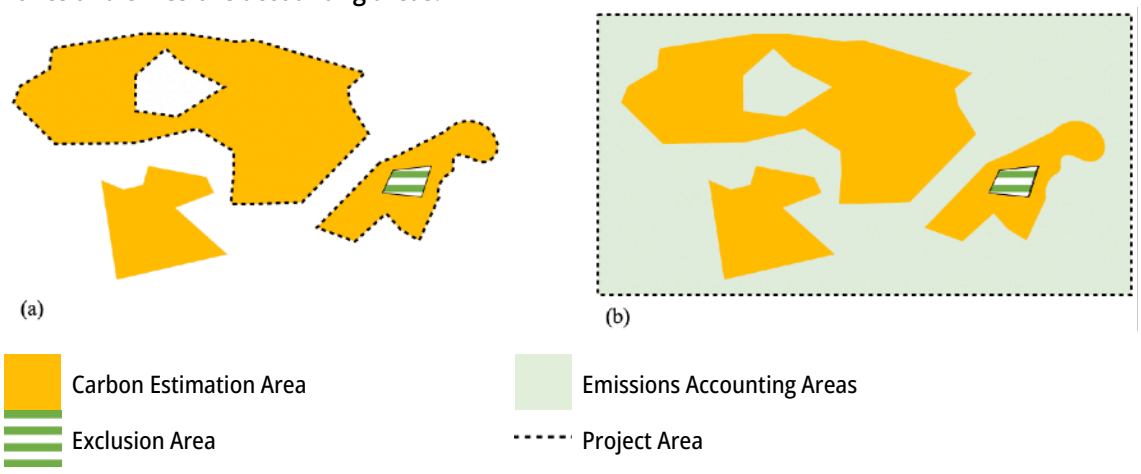
(a) no eligible management activity or agricultural activities are to be conducted in the area; and

(b) none of the land is included in a carbon estimation area.

Note : Exclusion areas would generally be forests, dwellings, roads, dams or other infrastructure.

(6) Any part of the project area which is neither a carbon estimation area nor an exclusion area is an ***emissions accounting area.*** It is recommended where possible, to define your project areas as closely as possible to your carbon estimation areas (see figure 2(a)). project areas may be defined broadly, however, the area in which your emissions are accounted for (carbon estimation areas + emissions accounting areas) would be much larger (figure 2(b)).

Figure 2: Examples of the relationship between a project area, carbon estimation area exclusion zones and emissions accounting areas.



Note 1: Examples of the relationship between a project area, carbon estimation area, exclusion zones and emissions accounting areas with different strategies of defining project areas. (a) Defines the project area to closely match the carbon estimation areas; (b) defines the project area more broadly.

Note 2: The economy of agriculture under forests within the carbon estimation area within the emissions accounting area, where AQS biochar is applied for land management strategy due to development needs, can be included in the calculation of the net abatement amount.

Note 3: emissions accounting areas are likely to include agricultural land which is not suitable or conducive to sampling (such as rocky outcrops) and densely forested land where eligible management activities are not applied.

(7) Subsections (8), (9) and (10) apply to a carbon estimation area that:

(a) has been mapped in accordance with this section; and

(b) includes land that is not eligible, or has ceased to be eligible, because it does not satisfy paragraph 18.(1)(b) of this methodology; and

(c) has not been removed from the project area of the project.

(8) Despite subparagraph (1)(a)(i), ineligible land may remain in a carbon estimation area if:

(a) less than the smaller of 1% or 5 hectares of the area of the carbon estimation area is covered by dwellings or other structures; or

(b) the Working Body determines, in accordance with subsection (10), that the land can continue to remain in the carbon estimation area.

(9) If subsection (8) does not apply, land in carbon estimation areas that is ineligible land must be removed from the project area.

(10) The Working Body may determine that land can continue to be mapped as a carbon estimation area if:

(a) the Working Body has consulted with the project proponent about making such a determination; and

(b) the continued mapping of the carbon estimation area is unlikely to result in the crediting of non-genuine carbon abatement; and

(c) the Working Body considers that the continued mapping of the carbon estimation area is appropriate, having regard to all the circumstances.

(11) Subsection (12) applies to a carbon estimation area that:

(a) has been mapped in accordance with this section; and

(b) includes land that is not eligible, or has ceased to be eligible, because it does not satisfy paragraph 18.(2)(a) of this methodology.

(12) The project proponent must remove the carbon estimation area from the project area.

(13) The mapping of each carbon estimation area, exclusion area or emissions accounting area must be done in accordance with the Supplement.

Schedule 2—Average quantity system (AQS) requirements

Note : The sampling plans, test procedures, and pass/fail criteria for determining AQS compliance referenced in this Schedule are those detailed in the Sampling and Test Procedures for Prepackaged Products, made under the Biochar Trade Measurement (Packaging) Rule 2025. For further information, please visit this methodology website at https://www.bidcarbon.org/methods-bcm001.

1. Simplified outline of this Schedule 2

The AQS applies a tolerance to the sample known as a '***tolerable shortfall***'. This is stated in section 3 of this Schedule 2 and is dependent on the actual net contents of the package under test. Packages are permitted to be equal to, or greater than, the stated quantity minus the tolerable shortfall specified in the requirements.

2. Sampling

(1) For the purposes of section 108 of this methodology, the weight or measure of the biobased product in a package is deemed to be the same as that stated on the package or label attached to the package if the package is one package in a lot of packages—
  (a) for which a sample has been selected under section 5 of this Schedule 2; and
  (b) the weighted average quantity of the packages in that sample is equal to, or greater than, the weight or measure of biobased product stated on the package or label; and
  (c) the number of non-standard packages in that sample is equal to, or less than, the number of non-standard packages permitted for the sample as determined in accordance with subsection (2); and
  (d) that sample contains no inadequate packages.

(2) The number of non-standard packages permitted for the sample,—
  (a) in the case of the minimum sample size being selected, is as set out in column 4 of table 2 of Schedule 2 of the Biochar Trade Rule for the number of packages in the lot of packages as set out in column 1 of that table; or
  (b) in the case of more than the minimum sample size being selected, is as set out in column 2 of table 4 of Schedule 2 of the Biochar Trade Rule for the sample size as set out in column 1 of that table.

3. Non-standard package

For the purposes of these methodology, a package is a non-standard package if it is a biobased product that contains less than the quantity stated on the AQS biochar or a label attached to it and the shortfall,—

(1) for quantities stated by mass or volume, is more than the amount of error set out in column 2 or column 3 of table 1 of Schedule 2 of the Biochar Trade Rule, as appropriate, for the quantity stated on the package or on the label as set out in column 1 of that table, but not more than twice that specified amount of error; or

(2) for quantities stated by length, width, area, or number, is more than the amount of error set out in column 2 of table 3 of Schedule 2 of the Biochar Trade Rule for the quantity type stated on the package or on the label as set out in column 1 of that table, but not more than twice that specified amount of error.

4. Inadequate package

For the purposes of these methodology, a package is an inadequate package if it is a package enclosing goods that contains less than the quantity stated on the package or a label attached to it and the shortfall,—

(1) for quantities stated by mass or volume, is more than twice the amount of error set out in column 2 or column 3 of table 2 of the Biochar Trade Rule, as appropriate, for the quantity stated on the package or on the label as set out in column 1 of that table; or

(2) for quantities stated by length, width, area, or number, is more than twice the amount of error set out in column 2 of table 3 of the Biochar Trade Rule for the quantity type stated on the package or on the label as set out in column 1 of that table.

5. Selection of sample

The sample must be in accordance with section 1.44 of the Biochar Trade Rule.

6. Weighted average quantity

The weighted average quantity of packages by an waste treatment facility or unit during a reporting period in a sample must be determined in accordance with section 6.4 of the Sampling and Testing Procedures.

7. Shortfall

If a package is sampled and tested in line with subsection 3.(2) of the Sampling and Testing Procedures and a ***shortfall*** is identified when the measured quantity of the package contents is less than the declared quantity shown on the packaging, it is a failure of a group of packages of the same kind.

Schedule 3—Value and costing of data asset development

1. Simplified outline of this Schedule 3

(5) All own-account production of data is considered as capital formation, and should be valued at the sum of costs.

(6) When valuing data assets using the cost approach, it is generally based on the ***replacement cost*** of the data assets (includes initial costs, direct costs, indirect costs, opportunity costs and relevant taxes).

(7) The value of the asset is determined by taking into account value adjustment factors such as inflation and depreciation.

(8) All materials purchased during a year must either leave the company as a product, as waste or emission or are stored on site.

2. Definitions

In this Schedule 3:

data asset has the meaning given by the Guide to developing a data inventory.

waste means a material which has been purchased and paid for but which has not been turned into a marketable product, the costs of wasted materials, capital and labour have to be added to arrive at total corporate environmental costs and a sound basis for further calculations and decisions.

materials include water and energy.

replacement cost has the meaning given by subsection 1.(2) of this Schedule 3.

organic waste has the same meaning as in the Carbon Farming Standard for Waste and Resource Recovery Data and Reporting.

PyCCS project has the meaning given by section 5 of this methodology.

non-product output means as scrap, losses, waste and emissions.

material flow balance means an equation based on “what comes in must go out - or be stored”. In a material flow balance information on both the materials used and the resulting amounts of product, waste and emissions are stated.

Note 1: Personnel costs are not considered in a ***material flow balance***.

Note 2: All items (materials always comprising materials, water and energy input) are measured in physical units in terms of mass (kg, t), litres or energy (MJ, kWh).

Note 3: The purchased input is cross-checked with the amounts produced and sold as well as the resulting waste and emissions.

3. Replacement cost of data assets for the reporting period - Example template

Use the following formula (***equation SC1***) to calculate the value of each tonnes CO_2-e for the reporting period:

$$UC = TC_{Asset} \div A$$

where:

UC means the value of each tonnes CO_2-e for that reporting period.

TC_{Asset} means means to the total cost of data assets, worked out using equation SC2.

A means the net abatement amount for the reporting period, in tonnes CO_2-e, worked out using section 40.

4. Total cost of data assets

The carbon storage value for the reporting period must be calculated using the following formula (***equation SC2***):

$$TC_{Asset} = \text{Data costs}$$

where:

TC_{Asset} means to the total cost of data assets.

Data costs means to the replacement cost incurred from the creation of data assets to the valuation benchmark date, see section 5 of this Schedule 3.

5. Cost-categories-oriented format

The following sample table demonstrates replacement cost accounting for the carbon storage value of a carbon data asset—the PyCCS project.

Table 1
Cost-categories-oriented format

Item	Cost-categories-oriented format	To do	Shown under item
1	Turnover/net sales	Determine actual quantities produced, sales figures, loss in storage, spoilage, returns etc. Establish actual product output and loss of products between production and sales	Items 1.4, 3, 4 of the table in sections 6 and 7 of this Schedule 3.
2	- Change in inventory	The quantities of non-product output between finished goods storage and sales department are posted at their material values (3), pro-rata production costs (4) and disposal costs (1.4)	
3	- Work performed and capitalized	May be relevant for production costs of in-house facilities for the removal, treatment and prevention of wastes and emissions	Items 1.1, 2.3 of the table in sections 6 and 7 of this Schedule 3.
4	Other operating income	Revenue from subsidies, grants and sales of non-product output	Item 5 of the table in sections 6 and 7 of this Schedule 3.

5	- Materials	Determine share of non-product output of raw, auxiliary and operating materials and assess at material purchase costs; Energy and water supply costs should also be shown in this category, but are often posted under “other operating expenditure”	Item 3 of the table in sections 6 and 7 of this Schedule 3.
6	- Services (other external costs)	External services for maintenance of treatment facilities and cleaner technologies, general environment research and consultancy services, auditors, seminars, external information and communication etc. are scattered across a variety of accounts	Items 1.3, 2.1 of the table in sections 6 and 7 of this Schedule 3.
7	- Personnel expenses	Determine work hours of staff in emission treatment facilities, cleaner technologies, general environmental management activities and labour pro rata cost for non-product output in the various phases of processing. Assessment is not derived from expense accounts of bookkeeping unit but according to work hour rates as established by the internal calculation procedures.	Items 1.3, 2.2, 4 of the table in sections 6 and 7 of this Schedule 3.
8	- Depreciation	Define waste and emission treatment equipment. Search cleaner technologies and determine if they have been significantly more expensive in relation to state of the art; Determine related pro rata production costs and pro rata administrative costs for non-product output	Items 1.1, 2.3, 4 of the table in sections 6 and 7 of this Schedule 3.
9	- Other operating expenses	Transport expenditure for wastes, disposal and collection fees, licenses, printing costs for environmental reporting, registration fees, eco-sponsoring, penalties, insurance premiums, provisions etc. are scattered across a variety of accounts. The checklists included in the annex are designed to assist the user in tracing and assessing costs; Also purchases of power, fuel and water can sometimes be found in this category, even though they belong under “materials”	Items 1.4, 1.5, 1.6, 1.7, 2.3 and 2.4 of the table in sections 6 and 7 of this Schedule 3.
10	- Other taxes	Environmental taxes, disposal and connection fees should be posted under this item	Item 1.4 of the table in sections 6 and 7 of this Schedule 3.

6. Checklists — Organic waste

Table 2
Organic waste

Item	Environmental cost/expenditure category
1	**Waste and emission treatment**
1.1	**Depreciation for related equipment**
	Plants for waste separation, i.e., waste separation system, collection containers
	Investments in waste separation sites and their construction, i.e., caption tank, mesh collection boxes, receptacles, labeling, construction costs for waste collection points
	Plants for waste treatment, i.e., chemical and physical treatment plants, disinfection plants
	Drying plants for damp waste
	Waste treatment facility or unit
	Transport systems, i.e., proportionate depreciation for trucks, tractors, stacks for collection and disposal, including safety equipment
1.2	**Maintenance and operating materials and services**
	Operating materials and energy for plant in accordance with 1.1, continual operation to conduct inspections, maintenance servicing, and repairs
	Maintenance services provided externally
	External analysis and metrics costs
	External testing costs, control and monitoring costs
	Transport costs for vehicles, i.e. for delivery of waste to AWT facility or to be recycled
	Rent for waste collection containers and separation systems
1.3	**Personnel**
	Waste administrator
	Cleaning of waste collection locations
	Internal handling of waste such as, i.e., collection, compaction, drying, internal waste transport
	Internal analysis and metrics costs
	Internal testing, control and monitoring costs
	Self delivery of waste to AWT facility or to recycling
	Corporate training of waste separation and prevention

	Compliance with waste regulations and corporate specific requirements, i.e., creation of economic waste prevention plans
	Filing and record-keeping for waste disposal
1.4	**Fees, taxes, charges**
	Disposal cost of organic waste including weighing charges, container rental, container destruction, etc.
	Waste disposal fees and charges (public waste disposal)
	Recycling costs for organic waste.
	Taxes for waste and clean-up of contaminated sites (as exists)
	Charges for municipal permits reporting waste management
	Payment of the various registration charges (includes charges paid to the registered charity)
1.5	**Fines and penalties**
	For neglecting to comply with waste-related regulations regarding separation, monitoring, transport and disposal
1.6	**Insurance for environmental liabilities**
	Insurance against the risk of accidents during transportation of waste
1.7	**Provisions for clean-up costs, remediation, etc.**
	Provisions for waste removal and recycling obligations
	Provisions for adaptation of eligible waste treatment technology to state-of-the-art technologies
	Greenhouse gas emission offsets
2	**Prevention and environmental management**
2.1	**External services for environmental management**
	Legal aid and external consultancy in the area of waste management
	Costs for training, literature and information materials, etc.
2.2	**Personnel for general environmental management activities**
	Meetings of the management committee, departmental managers, other employees and the environmental team reporting related environmental issues
	Continual or occasional control measures, internal audits
	Notification, reporting, monitoring/testing, studies/modeling, record-keeping, inspections
	Waste-related administration processes, announcements and inquiries

	Internal and external education and training, including travel costs
	Emergency response planning and training with regard to emission
2.3	**Extra expenditure for pyrolysis technology**
	Provision for the adaptation of pyrolysis units in line with state-of-the-art technologies
2.4	**Extra expenditure for cleaner technologies**
	Additional costs in comparison to state-of-the-art technologies, in particular wastewater prevention processes
2.5	**Other environmental management costs**
	Costs for environmental advertisement and communication
	Costs for support of local community environmental activities, such as providing funds, seminars and information
3	**Material purchase value of non-product output**
3.1	**Raw materials**
	Material purchase value of raw materials ending up in waste
3.2	**Packaging**
	Material purchase value of packaging
3.3	**Auxiliary materials**
	Material purchase value of auxiliary materials ending up in waste
3.4	**Operating materials**
	Material purchase value of operating materials ending up in waste, as long as it is not already contained in 1.2
4	**Processing costs of non-product output**
	Manufacturing cost surcharge in accordance with treatment depth for personnel, depreciation, and operating materials of the non-product output
	∑ Environmental Expenditure
5	**Environmental revenues**
5.1	**Subsidies, awards**
	Construction costs and financing subsidies for AWT facility
	Awards for optimal waste management
5.2	**Other earnings**
	Earnings from the sales of by-products (biochar, bio-oil, etc.)

7. Checklists — Soil and groundwater

Table 3
Soil and groundwater

Item	Environmental cost/expenditure category
1	**Waste and emission treatment**
1.1	**Depreciation for related equipment**
	Processes for the treatment of soil contamination
	Recultivation of land
	Reforestation measures
	Landscape design for industrial plants, power stations, etc.
	Protection measures for in-house disposal sites
1.2	**Maintenance and operating materials and services**
	Equipment for the processing of waste
	Operating materials and energy for the plants in accordance with 1.1, continual operation and for the conduction of inspections, maintenance servicing and repairs
	Maintenance services provided externally
	External analysis and metrics costs
	External testing costs, control and monitoring costs
1.3	**Personnel**
	Internal analysis and metrics costs
	Internal testing costs, control and monitoring costs
	Training for treatment and prevention
	Compliance with laws and specified corporate requirements
	Compliance with documentation and notification obligations
1.4	**Fees, taxes, charges**
1.5	**Fines and penalties**
1.6	**Insurance for environmental liabilities**
1.7	**Provisions for clean-up costs, remediation, etc.**
	Provisions for reforestation and recultivation
	Provisions for the clean-up of disposal sites and contaminated land
	Greenhouse gas emission offsets

2	**Prevention and environmental management**
2.1	**External services for environmental management**
	Legal aid and external consultancy
	Cost of training, literature and information materials, etc.
2.2	**Personnel for general environmental management activities**
	Meetings of the management committee, departmental managers, other employees and the environmental team reporting related environmental issues
	Notification, reporting, monitoring/testing, studies/modeling, record-keeping, inspections
	Continual or occasional control measures, internal audits
	Administrative processes, announcements and inquiries
	Internal and external education and training including travel costs
2.3	**Research and development**
	Research, development and trailing costs for prevention measures
2.4	**Extra expenditure for cleaner technologies**
	Additional costs in comparison to state-of-the-art technologies specially dealing with the prevention of contaminated land
2.5	**Other environmental management costs**
	∑ Environmental Expenditure
3	**Environmental revenues**
3.1	**Subsidies, awards**
3.2	**Other earnings**
	∑ Environmental Revenues

8. Material flow balance on corporate level

(1) The basis of agroecology performance improvements is the recording of material flows in kilograms by an input-output analysis. The system boundaries can be on the corporate level, or further split up to sites, cost centres, processes and product levels.

(2) The input-output balance at the corporate level is drawn up on an annual or a monthly basis and is linked to the bookkeeping, cost-accounting, storage and purchase systems. All material flows should be listed with their values and amounts per year. The roll-over scheme for the material flow balance should therefore record the amounts in kilograms, the values and the corresponding accounts. In addition, it should indicate whether materials are registered by material stock number and whether there is inventory management. It should also indicate whether there is consumption based stock withdrawal according to cost centres. As the first step in setting up the materials input-output statement at the corporate level, quantitative data are collected from the accounting and stock-keeping systems. The accounting system offers annual data on input into the company as a whole, as well as some of the output (if it is paid for).

Table 4
Tracking matrix for material flow balances

Item	Cost/expenditure categories											
1	Raw materials	•	•	•	•	•	•	•		•	•	
2	Auxiliary materials	•	•	•	•	•	•	•		•	•	
3	Packaging	•	•	•	•	•	•	•		•	•	
4	Operating materials	•	•	•	•				•	•	•	
5	Energy	•	•	•					•	•	•	
6	Water	•	•	•					•		•	
7	Product	•	•	•							•	
8	Waste	•		•					•	•	•	
9	Wastewater	•		•					•		•	•
10	Air emissions	•							•		•	•

Amount in kg., KWh, l

Purchase value

Account number

Material stock number

Stock-keeping

Production planning system

Direct costs

Overhead

Assigned to cost centre

Other records/measurements

Calculation/estimates