



Australian Government
**Department of Climate Change
and Energy Efficiency**

National Carbon Offset Standard

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Terms and definitions

Additionality: A requirement that a project or activity provide abatement that is additional to any that would occur in the absence of the project or activity, and that is additional to abatement that would occur anyway to meet Australia's International Target.

Australian Carbon Credit Unit (ACCU): An emissions unit issued under the Carbon Farming Initiative (CFI) established by the *Carbon Credits (Carbon Farming Initiative) Act 2011*, for verified emissions reductions or removals achieved by projects approved under the CFI. ACCUs are also referred to as 'CFI credits'.

Annex I countries: Countries listed in Annex I to the United Nations Framework Convention on Climate Change (UNFCCC), including all developed (OECD) countries and the countries in transition in central and Eastern Europe (including Russia and Ukraine). In the context of the Kyoto Protocol, 'Annex I country' is used to refer to a party included in Annex I to the UNFCCC with a commitment inscribed in Annex B to the Kyoto Protocol.

Business unit: A unit that is recognised by an entity as having administrative responsibility for one or more facilities of the corporation.

Cancellation: Transfer of a unit to a cancellation account so that it may not be used for any further purpose.

Carbon dioxide equivalence (CO₂-e): A standard measure that takes account of the global warming potential of different greenhouse gases and expresses the effect in a common unit.

Carbon footprint: A measure of the carbon dioxide equivalent emissions attributable to an activity. A carbon foot print can relate to the emissions of an individual, household, organisation or product.

Carbon neutrality: Refers to a situation where the net emissions associated with a an organisation's activities, product, services or events are equal to zero because the organisation has reduced its emissions, and acquired and cancelled carbon offsets for its remaining emissions.

Carbon offset: Represents reductions or removals of greenhouse gases from the atmosphere by sinks, relative to a business-as-usual baseline. Carbon offsets are tradeable and often used to negate (or offset) all or part of another entity's emissions.

Carbon Price Mechanism: the mechanism for putting a price on greenhouse gas emissions established under the *Clean Energy Act 2011*.

Carbon sink: A natural or manmade reservoir, such as a forest, that stores carbon.

Carbon Unit: A unit representing one tonne of CO₂-e issued under section 94 of the *Clean Energy Act 2011*.

Certified Emission Reduction (CER): A Kyoto unit corresponding to one metric tonne of carbon dioxide equivalent emissions, and issued for verified emission reductions or removals achieved by projects approved under the Clean Development Mechanism (CDM). CDM projects undertaking afforestation and reforestation activities issue temporary (tCERs) and long term units (ICERs), which must be replaced after a specified period.

Clean Development Mechanism (CDM): The carbon offset mechanism established under Article 12 of the Kyoto Protocol. Countries with emissions targets under the Kyoto Protocol can meet their obligations using credits from greenhouse gas abatement projects established under Article 12 in countries that are Party to the Protocol but do not have an emission target.

Emission factor: A factor that specifies the kilograms of carbon dioxide equivalent emitted per unit of activity.

Emissions Reduction Unit (ERU): A Kyoto unit corresponding to one metric tonne of carbon dioxide equivalent emissions reduced or sequestered arising from a Joint Implementation project (defined in Article 6 of the Kyoto Protocol).

Facility: An activity, or a series of activities (including ancillary activities), that involve the production of greenhouse gas emissions, the production of energy or the consumption of energy and that form a single undertaking or enterprise and meet the requirements of the National Greenhouse and Energy Reporting (NGER) Regulations.

Functional Unit: A means of expressing the greenhouse gas emissions of a product in a way that is meaningful for the product being investigated (for example kilograms of CO₂-e per unit of product).

Greenhouse gases (GHG): The atmospheric gases responsible for causing global warming and climate change. The Kyoto Protocol list six greenhouse gases -carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro-fluorocarbons (HFCs), per-fluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Greenhouse Friendly Verified Emission Reductions: Emission reduction units that have been generated under the Australian Government's Greenhouse Friendly program, which closed on 1 July 2010.

Joint Implementation (JI): A market-based implementation mechanism defined in Article 6 of the Kyoto Protocol, allowing Annex I countries or companies from these countries to implement projects jointly that limit or reduce emissions or enhance sinks.

Kyoto Protocol: An international treaty created under the UNFCCC in 1997, which entered into force in 2005. The Kyoto Protocol sets binding targets for the reduction of greenhouse gas emissions by developed countries and countries in transition. It includes individual emission reduction targets for Annex I countries to be met within the first commitment period of 2008-12.

Kyoto unit: Emissions units created under the Kyoto Protocol. Kyoto units include Assigned Amount Units (AAUs), CERs (including tCERs and ICERs), ERUs and Removal Units (RMUs).

Life cycle assessment: The compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle.

Limited Assurance: A level of assurance defined under the NGER legislation whereby the auditor finds that there is no evidence to suggest that a report is not accurate. This is a lower level of assurance than 'reasonable assurance'.

NGER Act: *National Greenhouse and Energy Reporting Act 2007.*

National Greenhouse and Energy Reporting (NGER) System: The national reporting framework for information related to the greenhouse gas emissions, and energy production and use of corporations operating in Australia. The framework is established under Commonwealth legislation, which makes registration and reporting mandatory for corporations whose greenhouse gas emissions or energy production or use meet certain thresholds.

Offset: See carbon offset.

Operational control: The highest authority within a corporate group to introduce and implement any or all of the following for the Facility: (i) operating policies; (ii) health and safety policies; (iii) environmental policies. Only one corporation can have operational control over a Facility at any time.

Permanence: this is a requirement that carbon offsets represent permanent reductions in emissions or carbon sequestration that is permanently maintained and not re-released into the atmosphere. Sequestration is generally regarded as permanent if it is maintained on a net basis for around 100 years.

Reasonable Assurance: A level of assurance defined under the NGER legislation meaning that the report is accurate in all material respects. A high but not absolute level of assurance.

Removal Unit (RMU): A unit created under the Kyoto Protocol corresponding to one metric tonne of carbon dioxide equivalent emissions sequestered and issued for removals of carbon dioxide from the atmosphere by eligible land use, land-use change and forestry activities.

Scope 1 emissions: The release of greenhouse gas into the atmosphere as a direct result of activities at a facility.

Scope 2 emissions: The release of greenhouse gas as a result of electricity generation, heating, cooling or steam that is consumed by a facility.

Scope 3 emissions: Greenhouse gases emitted as a consequence of a facility's activities but by another facility.

Sequestration: The removal of atmospheric carbon dioxide, either through biological processes (for example, photosynthesis in plants and trees), or geological processes (for example, storage of carbon dioxide in underground reservoirs).

Sink: See carbon sink.

The Standard: National Carbon Offset Standard.

Sub-facility: Organisational units that make up a facility.

United Nations Framework Convention on Climate Change (UNFCCC): An international treaty, adopted in 1992, aimed at achieving the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Verified Carbon Unit (VCU): A unit corresponding to one metric tonne of carbon dioxide equivalent emissions reduced, certified and issued under the Verified Carbon Standard.

Voluntary Emissions Reduction (VER): Emission reduction units that have been generated according to the Gold Standard.

1. Introduction

1.1 Carbon offsetting in the context of a carbon price

The Australian Government's Clean Energy Future plan is designed to meet Australia's emissions reduction targets in a flexible and cost effective manner while supporting an effective global response to climate change. A key component of this plan is the carbon price mechanism established under the *Clean Energy Act 2011*.

The Government recognises that many businesses and individuals are concerned about climate change and will wish to make their own contribution to reducing greenhouse gas emissions. The National Carbon Offset Standard ('the Standard') is one way that organisations may take additional action to reduce carbon pollution beyond Australia's national targets.

The Standard was developed following extensive stakeholder consultation. This revealed a strong consensus that achieving carbon neutrality involves action that goes beyond compliance with the carbon price mechanism, and opposition to the idea that compliance with the carbon price equates to carbon neutrality.

Accordingly, eligible offsets cancelled to achieve carbon neutrality under this Standard must be in addition to any eligible units surrendered to meet a liability under the carbon price mechanism (section 4 refers).

1.2 Objectives of the Standard

The Standard is designed to ensure that consumers have confidence in the voluntary carbon offset market and the integrity of the carbon offset and carbon neutral products they purchase. It provides guidance to businesses who wish to make their organisation carbon neutral or develop carbon neutral products in a way that achieves emissions reductions that are beyond those achieved under domestic mitigation policies and Australia's national emissions reduction targets.

To be 'carbon neutral' means that the net emissions associated with a product or an organisation's activities are equal to zero. For an organisation or product to become carbon neutral that organisation must:

- 1 measure its carbon footprint;
- 2 reduce emissions; and
- 3 offset any residual emissions.

The carbon foot print of an organisation, product or event can be measured for many different reasons. When greenhouse gas emissions are measured and reported, they are generally better managed.

It is also best practice for an organisation to publish information about the steps taken to measure, reduce and offset their emissions. This allows the public to objectively assess any carbon neutral claims.

The Standard specifies:

- the types of carbon offsets that constitute genuine, additional emissions reductions;
- the general principles and requirements for calculating the carbon footprint of a product, organisation or event;
- requirements for reporting the carbon footprint, measures taken to reduce emissions and the amount reduced, the emissions offset, and the type of carbon offsets purchased and cancelled; and
- requirements for auditing carbon footprint calculations and offset claims.

A robust and transparent audit model underpins confidence in carbon neutral claims. Independent audit validates the accuracy and completeness of carbon footprint calculations and the purchase and cancellation of an equivalent amount of eligible offset units.

The NCOS Carbon Neutral Program Guidelines provides further guidance on how to implement the Standard. The Guidelines set out the reporting and other requirements for carbon neutral certification.

2. Normative reference

The Standard contains provisions which are based on existing Australian and international standards and Australian legislation. These are listed below.

- Australian Standard (AS) ISO 14064 series, including:
 - *AS ISO 14064 Greenhouse gases Part 1: Specification with guidance at the organisation level for the quantification and reporting of greenhouse gas emissions and removals (AS ISO 14064.1:2006)*
 - *AS ISO 14064 Greenhouse gases Part 2: Specification with guidance at the project level for quantification and reporting of greenhouse gas emission reductions and removal enhancements (AS ISO 14064.2:2006)*
 - *AS ISO 14064 Greenhouse gases Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions (AS ISO 14064.3:2006)*
- International Standard ISO 14040 series, including:
 - *ISO 14040: Environmental management – Life cycle assessment – Principles and frameworks (ISO 14040:2006)*

- *ISO 14044: Environmental management – Life cycle assessment – Requirements and guidelines* (ISO 14044:2006)
- International Standard *ISO 14065: Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation of other forms of recognition* (ISO 14065:2007)
- Other international standards that are based on the ISO 14040 series, for example *PAS 2050:2011 – Specification for the assessment of the life cycle greenhouse gas emissions of goods and services*.
- The Greenhouse Gas (GHG) Protocol, including:
 - *GHG Protocol – A corporate accounting and reporting standard (revised edition)*
 - *The GHG Protocol for Project Accounting*
 - *GHG Protocol – Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)*
 - *GHG Protocol – Product Life Cycle Accounting and Reporting Standard (2011)*
- The *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and supporting legislation and documentation, including:
 - *National Greenhouse and Energy Reporting Regulations 2008* (NGER Regulations)
 - *National Greenhouse and Energy Reporting (Measurement) Determination 2008* (NGER Determination)
 - *National Greenhouse and Energy Reporting Technical Guidelines* (NGER Technical Guidelines)
 - *National Greenhouse Account Factors* (NGA Factors)

All standards and legislation are subject to revision. Organisations should use the most recent version or editions of any listed standards, guidance material or legislation.

3. Carbon offsets

3.1 Offsets integrity principles

The offset integrity framework for Australian Carbon Credit Units generated under the Carbon Farming Initiative (CFI) is set out in the legislation for the Initiative. In order for non-CFI offset units to be eligible for use under the Standard they must be:

- (a) **Additional:** Abatement must go beyond what would be required to meet regulatory obligations or undertaken as part of 'business-as-usual'; and additional to Australia's international emissions targets.
- (b) **Permanent:** Offsets must represent permanent reductions in greenhouse gas emissions. In the case of sinks, this requires that the carbon stored is sequestered and will not be released into the atmosphere for a period of 100 years.
- (c) **Measurable:** Methodologies used to quantify the amount of emissions reductions generated must be robust and based on defensible scientific methods. Methodologies must clearly define the greenhouse gas assessment boundary, emissions sources and sinks, and methods for calculating baseline emissions and project abatement.
- (d) **Transparent:** Consumers and other interested stakeholders must have access to information about offset projects, including the applied methodology, abatement estimates and project monitoring arrangements.
- (e) **Demonstrate avoidance of leakage:** an offset project must not cause material increases in emissions elsewhere which nullify or reduce the abatement that would otherwise result under the project.
- (f) **Independently audited:** Greenhouse gas emissions reductions generated by offset projects must be audited by an independent, qualified third party.
- (g) **Registered:** Offset units must be listed and tracked in a publicly transparent registry.

3.2 Eligible offset units

Australian Government Units

The following units issued under Australian Government legislation and programs meet the requirements of this Standard.

- All Australian Carbon Credit Units (ACCU) issued under the CFI;
- All credits issued under the former Greenhouse Friendly Program*; and
- Carbon Units issued under Australia's Carbon Price Mechanism from 1 July 2015.

*Note: the Government will cancel Kyoto units for Greenhouse Friendly credits issued and cancelled during the Kyoto commitment period; that is by 1 July 2013.

International Units

The following internationally recognised Kyoto Protocol units may be used to meet carbon price liabilities and will also be accepted under this Standard:

- Kyoto units
 - Certified Emissions Reductions (CERs) from Clean Development Mechanism projects;
 - Emission Reduction Units (ERUs) from Joint Implementation projects; and
 - Removal Units (RMUs) issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry activities under article 3.3 or 3.4 of the Kyoto Protocol;

with the following exceptions:

- long term (ICERs) and temporary (tCERs);
 - CERs and ERUs from nuclear projects, the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants or from large-scale hydro-electric projects not consistent with criteria adopted by the EU (based on the World Commission on Dams guidelines); and
 - any other CERs, ERUs and RMUs that the Government has said cannot be used for compliance with the carbon price mechanism.
- Any other international units the Australian Government accepts for compliance under the carbon price mechanism.

Other Units

The following voluntary market standards are well established, and units issued and verified under these schemes are widely considered by voluntary carbon market participants to meet this Standard. Before electing to use any of the following units, parties should undertake their own due diligence assessment of the originating projects and underpinning methodologies.

- Voluntary Emissions Reductions (VERs) issued by the Gold Standard; and
- Verified Carbon Units (VCUs) issued by the Verified Carbon Standard.

Where credits are issued under for reduced emissions from deforestation and degradation (REDD+) projects in developing countries, they must apply methodologies approved under the Standard. Project proponents wishing to have a methodology approved should submit it to the Department of Climate Change and Energy Efficiency for consideration.

4. Carbon footprint calculation

4.1 Carbon footprint calculation principles

The carbon footprint of an organisation, product or event should be calculated in accordance with the following principles, which are based on those outlined in the GHG Protocol and adopted under the NGER System. These principles are also consistent with those outlined under the other relevant Australian and international standards, including the AS ISO 14064 and ISO 14040 series.

- (a) **Relevance:** Ensure the greenhouse gas inventory of an organisation, or the carbon life cycle assessment of a product, appropriately reflect the greenhouse gas emissions attributed to that organisation or product.
- (b) **Completeness:** Account for and report all greenhouse gas emissions sources and activities within the defined boundary of the organisation or product. Disclose and justify all exclusions.
- (c) **Consistency:** Use consistent methodologies to allow for meaningful comparisons of greenhouse gas emissions over time. Document any changes to the data, boundary, methods, or any other relevant factors.
- (d) **Transparency:** Greenhouse gas information should be compiled, analysed and documented clearly and coherently so that auditors may evaluate its credibility. Disclose any relevant assumptions and make appropriate references to the calculation methodologies and data sources used.
- (e) **Accuracy:** Ensure that the quantification of greenhouse gas emissions is unbiased (not systematically over or under actual emissions) and that uncertainties are reduced as far as practicable. Where uncertainty is high use conservative values and assumptions.

4.2 Carbon footprint calculation of an organisation

An organisation may use either the greenhouse gas inventory method or the Life Cycle Assessment (LCA) method to calculate its carbon footprint, but the approach selected must be used consistently. Where the organisation chooses the greenhouse gas inventory method, it should apply the following steps.

- (a) Prepare a greenhouse gas inventory following the guidance outlined in sections 4.2.1 to 4.2.5 and in accordance with current domestic and international standards.

- (b) Prepare a greenhouse gas emissions inventory report, which contains the following components:
- i. the organisation boundary;
 - ii. greenhouse gas emissions sources associated with the organisation boundary;
 - iii. greenhouse gas emissions factors and calculation methodology;
 - iv. activity and emissions data collected;
 - v. assumptions used;
 - vi. all exclusions and their justification;
 - vii. a base year and details of the organisation's base year re-calculation policy; and
 - viii. final calculated greenhouse gas emissions attributable to the organisation boundary.

Where an organisation chooses to undertake a carbon LCA, it must apply the general approach set out in section 4.3 to its chosen boundary.

4.2.1 Defining the boundary of an organisation

An organisation may measure the greenhouse gas emissions attributable to the whole organisation or only a part of the organisation, such as a business unit, facility, sub-facility or activity.

The boundary of an organisation defines the activities that an organisation should include in its carbon footprint calculation. In all cases, the organisation boundary chosen should be transparently documented and disclosed when making assertions relating to the achievement of carbon neutrality by the organisation.

If an organisation wishes to calculate the carbon footprint for the entire organisation, it could choose the following definition of an organisation's boundary, based on the definition used in the NGER Act:

- (a) An entire organisation's boundary includes:
- i. all corporate group members; and
 - ii. all facilities under the operational control of corporate group members.

- (b) An organisation's corporate group members include:
 - i. the controlling corporation;
 - ii. subsidiaries;
 - iii. joint ventures; and
 - iv. partnerships.
- (c) A corporate group member will have operational control over a Facility if it has the authority to introduce or implement:
 - i. operating policies;
 - ii. health and safety policies; or
 - iii. environmental policies.

An organisation requiring further guidance on using this definition to set its organisation boundary should refer to the NGER Act and associated subordinate legislation and guidance.

The GHG Protocol outlines additional corporate level boundaries not covered by the NGER Act that are also suitable for calculating a carbon footprint for carbon neutrality purposes. They are the equity share and financial control approaches.

4.2.2 Setting a base year and base year re-calculation policy

Organisations must set a base year to allow for their emissions to be accurately compared over time.

- (a) select the earliest historical base year for which verifiable carbon emissions and removals data are available or use a multi-year average where a single year's data is unrepresentative of the company's typical emissions profile;
- (b) explain the selection of the base year;
- (c) develop a base-year re-calculation policy to account for changes to:
 - operational boundaries;
 - ownership and control of greenhouse gas sources and sinks;
 - quantification methodologies that result in significant changes to GHG emissions or removals;
 - address discovery of significant errors; and
- (d) document base-year calculations in subsequent carbon footprints.

Chapter 5 of the GHG Corporate Standard provides additional guidance on base year re-calculation approaches.

4.2.3 Emissions sources associated with the organisation boundary

- (a) An organisation must calculate all direct emissions (Scope 1) and indirect emissions from the use of electricity, heating, cooling or steam (Scope 2) attributable to sources within its chosen boundary. Scope 1 emission sources are outlined in the NGER Determination and include:
- the combustion of fuel for energy;
 - the extraction, production, flaring, processing and distribution of fossil fuels;
 - industrial processes where a mineral, chemical or metal product is formed using a chemical reaction that generates greenhouse gases as a by-product; and
 - waste disposal, either in landfill, as management of wastewater or from waste incineration.

Scope 2 emissions result from activities that generate electricity, heating, cooling or steam that is consumed by a Facility, but do not form part of the Facility.

Scope 3 emissions should be calculated in line with the guidance provided in NGRS where it is reasonably practicable to do so.

Any incidental Scope 1 or Scope 2 emissions may be estimated, in line with the guidance provided in the NGER Reporting Regulations and NGER (Measurement) Determination.

- (b) An organisation must consider calculation of indirect (Scope 3) emissions associated with those portions of the organisation's value chain that fall within the defined boundary. This will enable organisations to identify opportunities for emission reduction activities across their corporate value chain.
- (c) An organisation may refer to the *GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard* ('GHG Protocol Scope 3 Standard') for guidance on producing an inventory of Scope 3 emissions. Applying the Scope 3 Standard will assist organisations to identify significant Scope 3 emissions to include in their inventory. Where practicable, organisations should account for all Scope 3 emissions.
- (d) Organisations should follow the accounting and reporting principles of relevance, completeness, accuracy, consistency and transparency when considering which categories of Scope 3 emissions to include in their inventory.

(e) The GHG Protocol Scope 3 Standard presents the following framework for identifying and categorising Scope 3 emission sources:

- Purchased goods and services
- Capital goods
- Fuel- and energy- related activities (not included in Scope 1 or Scope 2)
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets
- Downstream transportation and distribution
- Processing of sold products
- Use of sold products
- End-of-life treatment of sold products
- Downstream leased assets
- Franchises
- Investments

In considering the calculation of Scope 3 emissions, an organisation should refer to the GHG Protocol which specifies that Scope 3 emissions sources are relevant in the following circumstances:

- the Scope 3 emissions from a particular source are likely to be large relative to the organisation's Scope 1 and Scope 2 emissions;
- the Scope 3 emissions from a particular source contribute to the organisation's greenhouse gas risk exposure;
- the Scope 3 emissions from a particular source are deemed relevant by key stakeholders;
- the organisation has the potential to influence the reduction of Scope 3 emissions from a particular source; or
- the Scope 3 emissions are from outsourced activities previously performed in-house or activities outsourced by the reporting company that are typically performed in-house by other companies in the reporting organisation's sector.

(f) It may not be necessary or practicable to account for Scope 3 emissions for the following reasons:

- the emissions are likely to be negligible (relative to other Scope 3 emissions);
- determining the emissions is not currently possible given available technology;
- determining the emissions will be very costly relative to their likely significance; or
- there is insufficient data.

Where organisations exclude Scope 3 activities from their inventory, this must be disclosed and justified.

Organisation must not exclude any Scope 3 activities that would compromise the overall integrity of the reported inventory.

An organisation must transparently disclose included and excluded Scope 3 emissions when making any assertions about emissions reductions.

(g) An organisation must calculate emissions of the six greenhouse gas types included under the Kyoto Protocol.

4.2.4 Emissions factors and calculation methodology

- (a) An organisation must collect activity data for the greenhouse gas emissions within its boundary.
- (b) An organisation must calculate the direct and indirect greenhouse gas emissions resulting from the emissions sources within its boundary.

Guidance on calculating emissions is provided in the NGER (Measurement) Determination, National Greenhouse Account Factors, and GHG Protocol. Where there is a method under the NGER Determination for calculating Scope 1 and Scope 2 emissions, that method must be followed.

NGER Determination options for calculating Scope 1 emissions include:

- i. Method 1 – using default emissions factors derived from the latest version of the National Greenhouse Account Factors;
- ii. Method 2 – a method using industry sampling and Australian or international standards listed in the NGER (Measurement) Determination or equivalent for analysis;

- iii. Method 3 – a method using Australian or international standards listed in the NGER Determination or equivalent standards for both sampling and analysis of fuels and raw materials. Method 3 is very similar to method 2, but it requires compliance with Australian or equivalent documentary standards for sampling; and
 - iv. Method 4 – direct measurement using continuous or periodic emissions monitoring.
- (c) The NGER Determination also sets out a method for estimating Scope 2 emissions from the purchase of electricity from a network.
- (d) Guidance on the calculation of Scope 3 emissions for limited categories of emissions sources is provided in the National Greenhouse Account Factors.

Further guidance may be found in chapters 5-7 of the GHG Protocol Scope 3 Standard, and in its companion document *Guidance for Calculating Scope 3 Emissions*.

- (e) An organisation must assess the uncertainty associated with its estimates of direct (Scope 1) greenhouse gas emissions in accordance with the NGER (Measurement) Determination.

4.2.5 Emissions attributable to the organisation

- (a) An organisation must apply the calculation approaches set out in 4.2.4(b) to calculate the greenhouse gas emissions attributable to emissions sources associated with the boundary determined under 4.2.1 during a specified period of time (e.g. a 12 month period).
- (b) Collectively, the greenhouse gas emissions attributable to each emissions source will provide an estimate of the greenhouse gas emissions attributable to the organisation boundary during the specified period of time.

4.3 Carbon footprint calculation of a product

The following steps must be applied to calculate the carbon footprint of a product.

- (a) Undertake a carbon life cycle assessment (LCA) using the guidance provided in sections 4.3.1 to 4.3.5 and in accordance with current international standards.
- International standard ISO 14040:2006 and ISO14044:2006 provide guidance on how to undertake a LCA.
 - Other international standards based on the ISO 14040 series may also be applied including *PAS2050:2011* and the *GHG Product Life Cycle Accounting and Reporting Standard*.

- (b) An organisation must prepare a LCA report for its product, which contains the following components:
- i. scope of the assessment, including the system boundary and all assumptions and exclusions;
 - ii. greenhouse gas emissions sources within the system boundary;
 - iii. greenhouse gas emission factors and calculation methodologies;
 - iv. life cycle inventory analysis;
 - v. a base year and details of the organisation's base year re-calculation policy; and
 - vi. the greenhouse gas emissions calculated as attributable to the life cycle of the product.

4.3.1 Defining the scope, including the system boundary

- (a) The scope of the LCA report should include a description of:
- i. the product and its function;
 - ii. the functional unit;
 - iii. all assumptions made in the LCA; and
 - iv. the measurable parameters and system boundary of the product over its entire life cycle.

The system boundary is best displayed as a flow chart (for example figure 2, ISO 14040:2006).

An organisation should incorporate all relevant stages of the life cycle of the product in the LCA system boundary. Any decision to exclude life cycle stages, processes, inputs or outputs must be clearly stated, and the reasons for and implications of their exclusion justified.

4.3.2 Setting a base year and base year re-calculation policy

Organisations must set a base year to allow for their product's emissions to be accurately compared over time, consistent with the steps outlined under 4.2.2.

Chapter 14 of the *GHG Protocol Product Standard* provides additional guidance for product footprints: Setting Reduction Targets and Tracking Inventory Changes over Time.

4.3.3 Emissions sources within the system boundary

- (a) An organisation must consider all sources of greenhouse gas emissions within the system boundary of the product, including the relevant stages of the product's life cycle. These may include:
- i. emissions resulting from the transformation, production, processing and acquisition of raw materials;
 - ii. emissions resulting from manufacture, production and final assembly;
 - iii. emissions resulting from the operation of premises;
 - iv. emissions resulting from all methods of transport;
 - v. emissions resulting from warehousing and sales;
 - vi. emissions resulting from services that form an integral part of distribution and supply;
 - vii. emissions resulting from the operation and maintenance of the product; and
 - viii. emissions resulting from the reuse, recycling or final disposal of the product.

Any incidental emission sources may be estimated in line with the guidance provided in the NGER Reporting Regulations and NGER Determination. The NGER Determination specifies that such estimates should be transparent, comparable, accurate and complete.

- (b) The LCA of an imported or exported product must accurately reflect its embodied emissions, including international freight and any other lifecycle stages.
- (c) The LCA must cover emissions of the six greenhouse gas types included under the Kyoto Protocol.

4.3.4 Life cycle inventory analysis

- (a) Life cycle inventory analysis should provide the following information:
- i. data sources and collection procedures and calculation methodologies used to quantify the greenhouse gas emissions associated with inputs and outputs to the relevant life cycle stages of a product;
 - ii. reference units for all inputs and outputs for the relevant life cycle stages, for example, litre of fuel, unit of gas or electricity etc.;
 - iii. the chosen functional unit for the product, for example kilograms of CO₂-e per unit of product ;

- iv. what the data includes and whether start-up/shutdown and emergency conditions are included, i.e. what production delivery inputs are considered;
 - v. whether there are relevant local or regional variations associated with the calculated greenhouse gas emissions;
 - vi. the allocation of greenhouse gas emissions amongst products that share a production delivery platform;
 - vii. the period during which the information and data has been collected;
 - viii. the significance of possible exclusions and assumptions.
 - ix. information sources; and
 - x. any uncertainty associated with key parameters.
- (b) An organisation must calculate the direct and indirect greenhouse gas emissions resulting from the emissions sources within the product system boundary. Guidance on calculating emissions is provided in the NGER (Measurement) Determination, National Greenhouse Account Factors and GHG Protocol.
- (c) Where there is a method under the NGER Determination for calculating Scope 1 and Scope 2 emissions, that method must be followed.
- (d) Scope 3 emissions should be calculated in line with the guidance provided in NGERs where it is reasonably practicable to do so.
- (e) An organisation must assess the uncertainty associated with its direct (Scope 1) greenhouse gas emissions estimates in accordance with the NGER Determination.

4.3.5 Emissions attributable to the life cycle of the product

- (a) An organisation must apply the data collection and calculation approaches set out in the life cycle inventory analysis to calculate the greenhouse gas emissions attributable to each stage of the life cycle of the product. Results must be expressed in the chosen functional unit.
- (b) Collectively, the greenhouse gas emissions attributable to each stage of the life cycle will provide an estimate of the emissions attributable to the full life cycle of the product.

4.4 Carbon footprint calculation of an event

The carbon footprint of an event may be calculated using the inventory approach (including relevant Scope 3 emissions) or the LCA approach.

Organisers seeking to calculate the carbon footprint of the event should prepare a greenhouse gas emissions inventory report or LCA report that contains the following components:

- i. the event boundary;
- ii. greenhouse gas emissions sources associated with the event boundary;
- iii. greenhouse gas emissions factors and calculation methodology;
- iv. activity and emissions data collected or inventory analysis;
- v. assumptions used;
- vi. all exclusions and their justification; and
- vii. final calculated greenhouse gas emissions attributable to the event boundary.

The general processes set out under section 4.2 or 4.3 may be used as guidance.

4.4.1 Defining the boundary of an event

The boundary of an event defines the activities that the organiser should include in the carbon footprint calculations for the event. Emissions to be included are those that:

- i. are under control or influence of the organiser;
- ii. are owned or shared by the organiser;
- iii. occur as a consequence of the event (associated emissions), where it is possible to reasonably estimate these emissions; and
- iv. are of high stakeholder interest.

The treatment of some associated emissions may vary subject to the nature of the event. In all cases, the event boundary chosen must be transparently documented and disclosed when making assertions relating to the achievement of carbon neutrality by the host in relation to the event.

4.4.1 Event baselines

For non recurring events, a reference case may be set against which potential emission reductions activities can be compared.

If the event is recurring and the intent is to compare emission reductions over time, the initial carbon footprint must form the baseline for future events. The baseline must be re-calculated where the nature or scale of the event has changed materially in between events.

5. Achieving carbon neutrality

5.1 Emissions management plan

Organisations wishing to become carbon neutral must develop an Emissions Management Plan. The Emissions Management Plan must demonstrate that appropriate systems are in place to monitor and reduce the greenhouse gas emissions associated with the organisation, product or event, and to purchase and cancel eligible carbon offsets. An Emissions Management Plan must identify:

- the greenhouse gas emissions attributable to the activities of an organisation (or specified part of an organisation), product or event within the reporting period;
- an emissions reduction strategy including the emissions reduction measures to be undertaken and quantity of emissions to be reduced over a specified timeframe;
- the equivalent quantity of carbon offsets required to offset the remaining emissions attributed to the product or organisation for each reporting period; and
- how any changes in the greenhouse gas emissions attributable to the product, organisation or event will be identified and recorded.

Where emissions calculations change over time (e.g due to improvements in data or calculation methodologies), the organisation must re-calculate the emissions baseline and update the Emissions Management Plan. Emissions attributed to the organisation or product in previous reporting periods should also be revised.

5.2 Cancellation of eligible offsets

Organisations must voluntarily surrender and cancel in a registry the equivalent number of eligible units to offset the total emissions associated with the product, organisation (or specified part of an organisation), or event.

Carbon Units, Australian Carbon Credit Units or eligible international units surrendered to meet an entity's liability under the carbon price mechanism do not reduce the entity's carbon footprint.

5.3 Reporting

A periodic report must be made publicly available on the entity's website to communicate progress on emissions reduction activities and carbon offsetting of carbon neutral organisations products. Annual reporting keeps key stakeholders informed in an open and transparent manner and communicates your achievements in managing emissions. For events, one report is required at the conclusion of the event. The NCOS Carbon Neutral Program guidelines provide further details on reporting for events.

The periodic report for organisations and products must be made against an Emissions Management Plan and must include the following:

- (a) The total carbon footprint of the activities of the organisation (or specified part of the organisation) or the product sold in the reporting period, including any actions taken to reduce total greenhouse gas emissions before offsetting;
- (b) A statement on the emissions reduction activities undertaken in accordance with the emissions reduction strategy and the resulting quantity of emissions reduced;
- (c) Records to prove that sufficient eligible offsets have been acquired to offset the proportion of the total carbon footprint associated with the activities of the organisation (or specified part of the organisation) or products committed to be offset; and
- (d) Details of the quantity and type of offset units purchased and the register in which they have been cancelled.

5.4 Guidance on making carbon neutral claims

When making Carbon Neutral Claims in conjunction with this Standard, users must be mindful of their obligations under the Australian Consumer Law.

The Australian Consumer Law applies to all forms of marketing, including claims on packaging, labelling and in advertising and promotions across all mediums (print, TV, radio and internet).

Consumers are entitled to rely on any carbon neutral claims you make under this Standard and expect these claims to be truthful. Organisations must ensure that any claims made regarding compliance with this Standard are accurate and appropriately substantiated.

The Government has registered a certification trade mark which can be used under licence to market products, events and organisations as carbon neutral in compliance with the NCOS where those organisations are certified under the NCOS Carbon Neutral Program.

6. Audit

A robust and transparent audit model provides confidence in carbon neutral claims. Independent audit validates the accuracy and completeness of carbon footprint calculations including the adequacy of emissions methodologies and factors other than those referred to in this Standard.

Audit standards that must be applied are:

- ASAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information; or
- ISO 14064-3:2006 Greenhouse gas specification with guidance for the validation and verification of greenhouse gas assertions,

in conjunction with the relevant carbon footprinting standard. If another auditing standard is to be applied the auditor must confirm that it is as demanding as those specified.

An auditor must provide an assurance statement confirming whether the carbon footprint calculations are presented fairly in accordance with the requirements of this Standard. The expected level of assurance to be achieved is that of a reasonable level. However, Scope 3 emissions are only required to be audited to a limited level of assurance.

Audits of carbon footprint calculations required under the Standard must be undertaken by a suitably qualified auditor. Suitably qualified auditors are individuals or bodies that:

- (a) Are registered under the National Greenhouse and Energy Reporting audit framework established by the Department of Climate Change and Energy Efficiency for the NGER Act; or
- (b) Are accredited to the international standard ISO 14065:2007 or recognised international standards based on ISO 14040.

Where specialist skills are required that are not possessed by the auditor, the necessary skills can be provided by an independent expert (in line with AS ISO 14064.3 or NGER Audit Handbook). Such experts must be independent and cannot have been involved in the development of the inventory or LCA that is the subject of the audit.

Once carbon neutrality is achieved for an organisation or product, emissions reductions and offsetting activities must be reported and independently audited on a regular basis. Organisations must undertake an audit at least once every two years to support a claim that an organisation or product is carbon neutral. Audited progress reports must be made publicly available.

Organisations making carbon neutral claims are responsible for maintaining appropriate records, having activities independently audited and bearing the associated costs.