



Australian Government

Department of Climate Change

National Carbon Offset Standard

(To come into effect on 1 July 2010 coinciding with the cessation of the Government's
Greenhouse Friendly program)

Contents

Terms and definitions	iii
Introduction	1
Normative reference.....	2
Carbon offsets	3
3.1 Eligible offset units.....	3
3.2 Generation of domestic offsets	4
3.2.1 Domestic offset eligibility criteria.....	4
Carbon footprint calculation	6
4.1 Carbon footprint calculation principles	6
4.2 Carbon footprint calculation of an organisation	6
4.2.1 Defining the boundary of an organisation	7
4.2.2 Emissions sources associated with the organisation boundary	8
4.2.3 Emissions factors and calculation methodology	10
4.2.4 Emissions attributable to the organisation.....	10
4.3 Carbon footprint calculation of a product.....	11
4.3.1 Defining the scope, including the system boundary.....	11
4.3.2 Emissions sources within the system boundary	12
4.3.3 Inventory analysis.....	13
4.3.4 Emissions attributable to the life cycle of the product	13
Achieving carbon neutrality.....	14
5.1 Emissions Management Plan.....	14
5.2 Retirement of eligible offsets	14
5.3 Reporting	14
5.4 Use of the National Carbon Offset Standard logo.....	15
Audit	16

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 Carbon Pollution Reduction Scheme cap or International Target.

Australian Emissions Unit (AEU): An emissions unit issued under the Carbon Pollution Reduction Scheme (CPRS), also referred to as a 'carbon pollution permit'.

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.

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

Carbon footprint: A measure of the carbon dioxide equivalent emissions attributable to an activity, commonly used at an individual, household, organisation or product level.

Carbon neutrality: Commonly refers to a situation where the net emissions associated with a product or an organisation's activities are equal to zero through the acquisition and retirement of carbon offsets that meet additionality criteria.

Carbon offset: Represents a reduction in greenhouse gases, or enhancement of greenhouse gas removal 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 sink: A natural or manmade reservoir that accumulates and stores carbon dioxide for an indefinite period.

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 and long term units known as tCERs and lCERs, which must be replaced after a specified period.

Clean Development Mechanism (CDM): The CDM allows greenhouse gas emission reduction projects to take place in countries that have no emission targets under the Kyoto Protocol, yet are signatories. The CDM is defined in Article 12 of the Kyoto Protocol.

Emission factor: A factor that gives 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 (defined in Article 6 of the Kyoto Protocol) project.

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

International target: The greenhouse gas emissions target that Australia has committed to meet by 2012 under the Kyoto Protocol and the target agreed for Australia in any replacement to the Kyoto Protocol.

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, and to share the ERUs.

Kyoto Protocol: An international treaty created under the UNFCCC in 1997. It entered into force in 2005. Among other things, 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: An emissions unit recognised for compliance under the Kyoto Protocol. Kyoto units include Assigned Amount Units (AAUs), CERs (including tCERs and lCERs), 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.

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 greatest authority 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: With regard to offsets, permanence requires the generation of offsets to have actually occurred and the carbon stored or sequestered not to be released into the atmosphere in the future.

Removal Unit (RMU): A Kyoto unit 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: The release of greenhouse gas into the atmosphere that is generated in the wider economy as a consequence of a facility's activities but that are physically produced 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.

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

Voluntary Emissions Reduction (VER): Emission reduction units that have been generated according to defined voluntary standards.

Introduction

The Australian Government has committed to introduce an emissions trading scheme in the form of the Carbon Pollution Reduction Scheme (CPRS). The CPRS 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.

The CPRS will impose a carbon price across most of the economy which will drive emissions reductions over time to achieve the targets set by the Government. The Government recognises that many businesses and individuals will wish to voluntarily do more to reduce greenhouse gas emissions.

The National Carbon Offset Standard ('the Standard') is intended 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, through the purchase and retirement of carbon offsets that are beyond those achieved by the CPRS and achievement of Australia's national emissions reduction targets.

To be carbon neutral commonly 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, it is generally accepted as best practice that an organisation would:

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

Through this approach a company's investment in measurement of its carbon footprint can serve multiple goals. When greenhouse gas emissions are measured and reported, they are generally better managed.

Best practice also requires that an organisation make transparent to the public steps taken to measure, reduce and offset emissions so that any carbon neutral claims can be objectively assessed.

The Standard specifies:

- the types of carbon offsets that constitute genuine, additional emissions reductions in the context of the CPRS;
- the general principles and requirements for calculating the carbon footprint of a product or organisation;
- requirements for transparent recording of the carbon footprint, measures taken to reduce emissions and the amount reduced and the emissions amount offset and the type of carbon offsets purchased and retired; and

- requirements for auditing the veracity of carbon footprint calculations and offset claims.

A robust and transparent audit model is fundamental to provide confidence in offset projects and carbon neutral claims. Independent audit validates the eligibility and robustness of offset project methodologies, the amount of emissions reductions offset projects achieve, and the accuracy and completeness of carbon footprint calculations.

The Standard has been designed to be program neutral. The administrative framework for supporting the Standard will stipulate specific process and reporting requirements associated with the generation of offsets and the certification of carbon neutrality.

Normative reference

The Standard contains provisions which are based on existing Australian and international standards and Australian legislation. The editions of these documents, as referenced below, were current at the time of publication.

- 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.

- The Greenhouse Gas (GHG) Protocol, including:
 - *GHG Protocol – A corporate accounting and reporting standard (revised edition)*
 - *The GHG Protocol for Project Accounting*
- 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 (Measurement) Determination)
 - National Greenhouse and Energy Reporting Guidelines (NGER Guidelines)
 - National Greenhouse and Energy Reporting Technical Guidelines (NGER Technical Guidelines)
 - National Greenhouse Account Factors

All standards and legislation are subject to revision. Where referenced by the Standard, organisations should ensure that they apply the most recent edition.

Carbon offsets

3.1 Eligible offset units

Voluntary retirement of the following units will be accepted under the Standard for the purposes of voluntary carbon offsetting:

- (a) Australian Emissions Units (AEUs);
- (b) Certified Emissions Reductions (CERs) except long term (lCERs) and temporary (tCERs);
- (c) Emission Reduction Units (ERUs);
- (d) Removal Units (RMUs);
- (e) Voluntary Emissions Reductions (VERs) issued by the Gold Standard*;
- (f) Voluntary Carbon Units (VCUs) issued by the Voluntary Carbon Standard*;

* Where credits are issued for reduced emissions from deforestation and degradation (REDD) and other agriculture forestry and land use (AFOLU) projects, they must apply methodologies approved under the Standard.

- (g) Offsets generated from emissions sources in Australia not counted toward Australia's Kyoto Protocol target, where they meet eligibility criteria and use a methodology that has been approved under the Standard.

The Government reserves the right to amend eligible offset units as required to reflect carbon market developments both internationally and domestically. The list of eligible offset units will be reviewed regularly and is expected to change over time.

Further information on processes for having methodologies approved will be provided under the supporting administrative framework for the Standard.

3.2 Generation of domestic offsets

Proponents may propose methodologies for offset projects and develop offset projects within Australia from emissions sources not counted toward Australia's obligations under the Kyoto Protocol target.

Emissions sources currently not counted toward Australia's obligations under the Kyoto Protocol target and eligible for the generation of domestic offsets under the Standard are:

- Forest management (forests established before 1990);
- Revegetation (establishment of woody biomass that does not meet forest criteria); and
- Cropland and grazing land management (net greenhouse gas emissions from soil, crops and vegetation).

Emission sources not counted toward our International Target will be subject to outcomes in international negotiations and, similar to domestic arrangements, are likely to change over time.

3.2.1 Domestic offset eligibility criteria

In order for domestic offset methodologies and projects to be considered eligible under the Standard they are required to occur within Australia and be:

(a) Additional

Greenhouse gas emissions reductions generated by the project must be beyond what would be required to meet regulatory obligations under any Australian laws or regulations or undertaken as part of 'business-as-usual' investment. The level of additional emissions reductions generated by an offset project is the difference between the emissions associated with the project ('project emissions') and emissions under a business-as-usual scenario.

The administrative framework supporting the Standard will provide further guidance on how to apply additionality principles.

(b) Permanent

Greenhouse gas emission reductions must be permanent. In the case of sinks, this requires that the carbon stored is sequestered and will not be released into the atmosphere in the future.

(c) Measurable

Methodologies used to quantify the amount of emissions reductions generated must be robust and based on a defensible scientific method. Methodologies must clearly define a boundary for the emissions reduction project, emissions sources and emissions factors and activity levels. They must specify the calculation of a baseline emissions forecast reflecting business-as-usual and the means of comparing it to expected emissions from the project to determine the carbon offsets generated. The methodology must specify the uncertainty associated with the calculation of offsets generated. It should also specify the risks associated with achieving the forecast abatement and how they will be managed.

(d) Transparent

Consumers and other interested stakeholders must be able to examine information on domestic offset projects, including the applied methodology, emissions calculations and project monitoring arrangements, by accessing a publicly available website.

The information provided should clarify data sources, exclusions, inclusions and assumptions.

(e) Independently audited

Eligibility of methodologies, offset projects and greenhouse gas emissions reductions generated must be audited by an independent third party. Existence of a conflict of interest should be determined.

Further information on audit requirements is provided under the Audit section.

(f) Registered

Emissions reduction units generated must be registered and tracked in a publicly transparent registry.

Carbon footprint calculation

4.1 Carbon footprint calculation principles

The calculation of the carbon footprint of an organisation or product should be performed in accordance with the following principles, which are based upon those outlined in the GHG Protocol and adopted under the NGER System. These principles are consistent with those outlined under the other Australian and international standards referenced throughout the Standard, 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. Transparently 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 systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Where uncertainty is high use conservative values and assumptions. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

4.2 Carbon footprint calculation of an organisation

An organisation should apply the following steps in order to calculate its carbon footprint.

- (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.
 - The Australian standard AS ISO 14064.1:2006, NGER Act and supporting documentation, and GHG Protocol provide guidance for

organisations on how to prepare a greenhouse gas emissions inventory.

- Other international standards that draw on the ISO 14064 series may also be applied.

- (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; and
 - vii. final calculated greenhouse gas emissions attributable to the organisation boundary.

4.2.1 Defining the boundary of an organisation

The boundary of an organisation defines the activities that an organisation should include in its carbon footprint calculation. The organisation may choose to measure the greenhouse gas emissions attributable to the whole organisation or only a part of the organisation. 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 to use 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 any or all of the following for that Facility:
- 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 guidelines.

Other boundary approaches consistent with the NGER Act are described in the NGER Guidelines. These include:

- Business unit;
- Facility;
- Sub-facility; or
- Activity.

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 Emissions sources associated with the organisation boundary

- (a) An organisation should 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 (Measurement) Determination and comprise:
- 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.

- (b) An organisation should consider calculation of other indirect (scope 3) emissions, which occur outside the boundary of a Facility as a result of activities at a Facility. This provides the organisation with a more comprehensive view of the greenhouse gas emissions attributable to its activities.

At a minimum, an organisation should include scope 3 emissions from the following sources:

- business travel of its employees;
- disposal of waste generated by the organisation; and
- use of paper in the course of its business.

Other scope 3 emissions to be considered include:

- extraction, production and transport of purchased fuels;
- extraction, production and transport of purchased materials or goods;
- disposal of waste generated in the production of purchased fuels, materials and goods;
- outsourced activities; and
- cost of equipment, consumables, building lease, repairs, maintenance and communications.

In considering the calculation of scope 3 emissions, an organisation should refer to the GHG Protocol which provides the following guidelines for determining the relevance of scope 3 emissions sources:

- the scope 3 emissions from a particular source are large or believed 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 critical by key stakeholders; and
- the organisation could undertake or influence the potential reduction of scope 3 emissions from a particular source.

An organisation should transparently document and disclose which scope 3 emissions have been included in its carbon footprint when making any assertions about emissions reductions.

- (c) An organisation should calculate emissions of the six greenhouse gases included under the Kyoto Protocol.

4.2.3 Emissions factors and calculation methodology

- (a) An organisation should collect activity data relating to the greenhouse gas emissions sources related to its boundary.
- (b) An organisation should calculate the direct and indirect greenhouse gas emissions resulting from the emissions sources associated with its boundary. Greenhouse gas emissions from scope 1 and scope 2 emissions sources should be calculated in accordance with the methods and guidance provided in the NGER (Measurement) 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 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.

Some guidance on calculation of scope 3 emissions for limited categories of emissions sources is provided in the National Greenhouse Account Factors and GHG Protocol.

- (c) An organisation should assess the uncertainty of its direct (scope 1) greenhouse gas emissions estimates in accordance with the NGER (Measurement) Determination.

4.2.4 Emissions attributable to the organisation

- (a) An organisation should apply the calculation approaches set out in 4.2.3 (b) to calculate the greenhouse gas emissions attributable to emissions sources associated with its boundary 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 should be applied to calculate the carbon footprint of a product.

- (a) Undertake a carbon life cycle assessment (LCA) with reference to the guidance provided in sections 4.3.1 to 4.3.4 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.
- (b) An organisation should prepare a LCA report for its product, which contains the following components:
 - i. scope, including the system boundary;
 - ii. greenhouse gas emissions sources within the system boundary;
 - iii. all assumptions and exclusions;
 - iv. greenhouse gas emission factors and calculation methodology;
 - v. inventory analysis; and
 - vi. calculated greenhouse gas emissions 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;
 - 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).

- v. An organisation should incorporate all relevant stages of the life cycle of the product in the LCA system boundary. Any decision to omit life cycle stages, processes, inputs or outputs must be clearly stated, and the reasons for and implications of their omission justified. Potentially relevant stages to be included and assessed in the life cycle of the product include:
- the acquisition of raw materials and their transport to the production stage;
 - the production of the product;
 - transport, warehousing distribution and sale;
 - use of the product (including maintenance); and
 - product reuse, recycling, incineration and landfill disposal.

4.3.2 Emissions sources within the system boundary

- (a) An organisation should consider the following sources of greenhouse gas emissions from within the system boundary of the product, with reference to the potentially relevant stages of the life cycle listed above:
- i. greenhouse gas emissions resulting from the transformation, production, processing and acquisition of raw materials;
 - ii. greenhouse gas emissions resulting from manufacture, production and final assembly;
 - iii. greenhouse gas emissions resulting from the operation of premises;
 - iv. greenhouse gas emissions resulting from all methods of transport;
 - v. greenhouse gas emissions resulting from warehousing and sales;
 - vi. greenhouse gas emissions resulting from services that form an integral part of distribution and supply;
 - vii. greenhouse gas emissions resulting from the operation and maintenance of the product; and
 - viii. greenhouse gas emissions resulting from the reuse, recycling or final disposal of the product.
- (b) An organisation should calculate emissions of the six greenhouse gases included under the Kyoto Protocol.

4.3.3 Inventory analysis

- (a) Life cycle inventory analysis should provide the following information:
- i. data collection procedures and calculation methodologies used to quantify relevant inputs and outputs of a product. Guidance on calculating scope 1 and scope 2 greenhouse gas emissions is provided in the NGER (Measurement) Determination. Some guidance on the calculation of scope 3 emission for limited categories of emissions sources is provided in the National Greenhouse Account Factors and GHG Protocol. Default Australian emissions factors are provided in the National Greenhouse Account Factors;
 - ii. reference units of all inputs and outputs, e.g. litre of fuel, unit of gas or electricity etc.;
 - iii. the chosen functional unit for the 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. geographical representativeness, e.g. 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 has been collected;
 - viii. the significance of possible exclusions and assumptions;
 - ix. the source of the information; and
 - x. where relevant, the uncertainty associated with key parameters.

4.3.5 Emissions attributable to the life cycle of the product

- (a) An organisation should apply the data collection and calculation approaches set out in the inventory analysis to calculate the greenhouse gas emissions attributable to each stage of the life cycle of the product. Results are expressed in the chosen functional unit.
- (b) An organisation should assess the uncertainty of its direct (scope 1) greenhouse gas emissions estimates in accordance with the NGER (Measurement) Determination.
- (c) 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.

Achieving carbon neutrality

5.1 Emissions Management Plan

Organisations that calculate their carbon footprint and purchase offsets to become carbon neutral should develop an Emissions Management Plan. The Emissions Management Plan should demonstrate that appropriate systems are in place to monitor and reduce the greenhouse gas emissions associated with the organisation or product, and to purchase and retire 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) or product within a given period;
- an emissions reduction strategy including the emissions reduction measures undertaken and quantity of emissions reduced;
- the equivalent quantity of carbon offsets required to offset the remaining emissions attributed to the product or organisation for each reporting period;
- records required, and the process for establishing and maintaining those records, to ensure that the greenhouse gas emissions attributable to the product or organisation, and any changes in these, are recorded in a timely manner; and
- quality control practices in place to ensure data quality is maintained.

5.2 Retirement of eligible offsets

Organisations should voluntarily surrender and retire into a registry the equivalent number of eligible units to offset the total emissions associated with any product or organisation (or specified part of an organisation).

5.3 Reporting

A periodic report should be made publicly available on a website to communicate progress on emissions reduction activities and carbon offsetting of carbon neutral organisations and products. The periodic report should be made against an Emissions Management Plan and should 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 given 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;
- (d) Details of the quantity and type of offset units purchased and register into which they have been retired, or cancelled.

5.4 Use of the National Carbon Offset Standard logo

Following independent audit of the calculation of the carbon footprint for an organisation or product and development of an Emissions Management Plan, the proponent may complete an agreement to use the National Carbon Offset Standard logo to state that the organisation or product is carbon neutral in accordance with the requirements of the Standard.

Completion of this agreement will require the proponent to make publicly available information about the organisation or product, including those details listed under section 5.3.

Audit

A robust and transparent audit model is fundamental to provide confidence in offset projects and carbon neutral claims. Independent audit validates the eligibility and robustness of offset project methodologies, the amount of emissions reductions offset projects achieve, and the accuracy and completeness of carbon footprint calculations. Audits of offset methodologies, projects and carbon footprint calculations required under the Standard should be undertaken by a suitably qualified auditor.

Suitably qualified auditors may include individuals or bodies that:

- (a) Are registered under the greenhouse and energy audit framework currently being established by the Department of Climate Change for the NGER Act and CPRS;
- (b) Have demonstrated knowledge and expertise in the relevant Australian and international standards, specifically AS ISO 14064 and ISO 14040 series; or
- (c) Are accredited to the international standard ISO 14065:2007 or recognised international standards based on ISO 14040.

Once offset projects are established or carbon neutrality is achieved for an organisation or product, emissions reductions and offsetting activities should be reported and independently audited on a regular basis. Audited progress reports should be made publicly available.

Project proponents and organisations making carbon neutral claims are responsible for having activities independently audited and bearing the associated costs. Appropriate records must be maintained to allow emissions reductions and carbon neutral claims to be audited.