

PAS 2060:2010

Specification for the demonstration of carbon neutrality



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Foreword

This Publicly Available Specification has been developed by BSI in order to specify requirements to be met by any entity seeking to demonstrate carbon neutrality through the quantification, reduction and offsetting of greenhouse gas (GHG) emissions from a uniquely identified subject and came into effect in April 2010.

Acknowledgement is given to the organizations who were involved in the development of this specification as members of the Steering Group.

- Association of British Certification Bodies (ABCB)
- Aviva plc
- Department of Energy and Climate Change (DECC)
- Carbon Clear limited
- The CarbonNeutral Company
- The Carbon Trust
- The Co-operative Group
- Eurostar Group Limited
- Good Energy Group plc
- Institute of Environmental Management and Assessment (IEMA)
- International Carbon Reduction and Offset Alliance (ICROA)
- Marks and Spencer plc
- Mineral Products Association – The Concrete Centre
- School of the Built Environment, Oxford Brookes University
- UPM-Kymmene Corporation

Acknowledgement is also given to the members of the wider Review Panel consulted in the development of this specification.

BSI retains ownership and copyright of this PAS and reserves the right to withdraw or amend it on receipt of authoritative advice that it is appropriate to do so.

The PAS process enables a specification to be developed rapidly in order to fulfil an immediate need in industry or in the wider community. The methodology includes a commitment to review the published PAS at intervals not exceeding two years in order to ensure its continued relevance and accuracy and because of this the PAS will be found to have particular benefit in relation to subjects where concepts and technology are

as yet untried. This review may lead to confirmation, revision or withdrawal in accordance with perceived need. Any amendments arising from the review will be published as an amended PAS and publicized in *Update Standards*.

Alternatively, a PAS may be considered for further development as a British Standard, or constitute part of the UK input to the development of a European or International Standard.

This PAS is not to be regarded as a British Standard. It will be withdrawn upon publication of its content in, or as, a British Standard or if an equivalent European standard is published.

Use of this document

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this PAS are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this PAS cannot in itself confer immunity from legal obligations.

Introduction

0.1 General

Climate change and the emission of greenhouse gases together constitute one of the critical issues facing society today. Strategies and actions to reduce carbon footprints are important and governments, industry and communities are responding to this issue in various ways. As a consequence, there has been a proliferation of entities making claims of carbon neutrality. Such claims are employed by businesses and other entities looking to promote their environmental credentials to key stakeholders and customers. Carbon neutrality can therefore be an important indicator for citizens wishing to choose greener products and services.

However, due to the lack of common definition and recognized method of validation, there have been inconsistencies in how the term is used, resulting in a growing cynicism about carbon neutrality. The perceived need to restore credibility to the concept of carbon neutrality has led to the decision to develop a specification which lays out the requirements for demonstrating carbon neutrality.

The anticipated benefits are:

- enhanced consumer protection;
- increased action on climate change;

- accurate and verifiable declarations of carbon neutrality that are not misleading;
- reduction in confusion between trading partners;
- increased likelihood that corporate entities will make improvement in their carbon management relating to production processes and products, in response to customer pressure;
- increased opportunity for the public, consumers, purchasers and potential purchasers to make more informed choices.

Carbon neutrality can relate to a large variety of areas including products, organizations, communities, travel, events, projects, and buildings. A declaration or claim of carbon neutrality can take the form of a statement and may be expressed in advertising, literature, publicity, labels, technical bulletins as well as digital or electronic media such as the internet.

The methodologies applied to collate evidence that substantiates such declarations should be clear, transparent, and scientifically sound, documented and readily available so that interested parties can be assured of the validity of the declaration.



0.2 This Specification

0.2.1 This Publicly Available Specification (PAS) is being drafted in response to the perceived need to provide a common, consistent approach by means of which carbon neutrality can be demonstrated. The availability of such a specification will encourage entities to work towards implementing GHG reduction strategies and achieve genuine reductions in those emissions. Its use will facilitate comparability between claims and assist in overcoming public cynicism about carbon neutrality.

0.2.2 This specification establishes a definition for “carbon neutral” and a credible means of determining and demonstrating carbon neutrality. The specification encourages entities to work towards reduced greenhouse gas emissions and to achieve genuine reductions in those emissions. It encourages a real change in behaviour to help drive society towards a low carbon economy.

0.2.3 This specification recognizes that transparency and accountability around declarations of carbon neutrality are essential to build trust and confidence. It establishes good practice with respect to the making and substantiation of carbon neutral claims but recognizes and makes provision for the fact that currently determined good practice is likely to evolve as better ways are found to determine and communicate carbon footprints.

0.2.4 This specification provides a credible and logical roadmap for entities that are setting out to achieve carbon neutrality for any subject that they have unambiguously identified and clearly defined (see definition 3.28). For an entity that has successfully undertaken the reduction of greenhouse gas emissions from such a subject in a manner that meets the requirements of this PAS and is seeking to obtain recognition of that reduction in issuing a declaration of carbon neutrality, this specification makes provision for taking account of historical GHG emission reductions made up to a maximum of three years prior to any declaration being made.

0.2.5 It is intended that this specification be used with other existing standards, industry codes and established protocols that prescribe methodologies for carbon footprint quantification, greenhouse gas reduction and offsetting. It therefore identifies those that are accepted as appropriate for application in connection with the demonstration of carbon neutrality.

0.2.6 This specification also refers to some aspects of carbon neutrality for which no standard currently exists and sets out rules and principles whereby new

standards or codes can be judged acceptable for use in connection with a declaration of carbon neutrality.

0.2.7 During preparation of this document, consideration was given to including a requirement for a specific minimum relative reduction and indeed some members of the Steering Group strongly favoured such an inclusion. In the event, with this being an as yet untested specification for carbon neutrality, it was decided that the first edition of this specification whilst requiring that reduction in absolute terms and/or a reduction in emission intensity be clearly evident for the defined subject, would not seek to impose an arbitrary minimum. It is however envisaged that further consideration will be given to the inclusion of a minimum relative reduction requirement at the time of the first revision which in accordance with the principles of PAS development will be not more than two years after first publication.

Attention is drawn to the fact that users of this PAS will be expected to publicly justify their selection of particular standards or approaches in respect of the identified subjects under analysis.



1 Scope

This Publicly Available Specification (PAS) sets out requirements to be met by any entity seeking to demonstrate carbon neutrality through the quantification, reduction and offsetting of greenhouse gas (GHG) emissions from a uniquely identified subject. It is not the intention of this PAS to exclude any specific subjects or entities.

It is intended that this specification be used by any entity, including:

- Regional or local government
- Communities
- Organizations/companies or parts of organizations (including brands)
- Clubs or Social Groups
- Families
- Individuals

This specification is applicable to the demonstration of carbon neutrality in respect of any subjects selected and defined by the applying entity, including for their:

- Activities
- Products
- Services
- Buildings
- Projects and major developments
- Towns and cities
- Events

Achieving carbon neutrality solely through reduction of direct GHG emissions will not be practicable in most instances and hence carbon offsets (see 3.7) will play a role in achieving carbon neutrality. **However, this specification does not make provision for a declaration of the achievement of carbon neutrality solely through offsetting** other than for the first application period, where to facilitate initiation of the process, concession is made to enable entities to take up the option of making a declaration of the achievement of carbon neutrality solely through carbon offsets. In all subsequent periods it is essential that a reduction in absolute terms and/or a reduction in emission intensity be evident for the defined subject, if carbon neutral status in accordance with PAS 2060 is to be claimed.

This specification provides two forms of declaration.

1. **The declaration of commitment to carbon neutrality** requires the entity to establish the carbon footprint

of the subject and to document a Carbon Footprint Management Plan describing how the entity intends to achieve carbon neutrality with respect to the defined subject.

2. **The declaration of achievement of carbon neutrality** requires the entity to have achieved reductions in the carbon footprint of the subject and to have offset remaining GHG emissions. Such declarations of achievement therefore only apply to the scope and period validated and should the entity intend to extend its claim to future periods, further validation will be required.

This specification provides for the validation of declarations by the entity itself as well as by other parties and independent third parties, engaged to do so. To claim compliance with this PAS, it is necessary that the entity satisfy all of the requirements within the specification relevant to the declaration being made.

This specification incorporates provision for the use of other, widely accepted standards and methodologies and provides new requirements only where corresponding provisions are not known to exist or are not sufficiently robust to substantiate claims of carbon neutrality in the terms of this PAS. It also establishes a set of principles to enable the use of entity-developed or newly available methodologies provided they are sufficiently robust to unequivocally support demonstration of carbon neutrality in a manner that meets the requirements of this PAS and can be reliably and repeatedly validated.

Annex A (Normative) sets out the permissible declarations in respect of carbon neutrality including that for a unified declaration for entities wishing to declare both achievement of and future commitment to, carbon neutrality.

Annex B (Informative) provides a list of the information required to complete the qualifying explanatory statement (QES) for each declaration and is appropriate for use as a check list to assist in establishing the completeness of a QES.

The application of proprietary logos or symbols to represent the status of carbon neutrality is outside the scope of this specification.

2 Normative references

The documents identified in Table 1 of this PAS can be fundamental to its successful application but are not normative in the usual standards related meaning of that term. This is because choice as to which document provides the most appropriate methodology for any particular entity or subject, rests with the user of this PAS, on the basis of the principles and requirements embodied in it.

Within the terms of this PAS however, conformity to the requirements of the entity selected documents, is an integral part of conformity to this specification.

To conform to PAS 2060, it is necessary that an entity satisfy the requirements of all of the documents that it identifies as being applicable to it and/or to the subject. The manner of application of the methodologies provided shall conform to the principles of PAS 2060.

For dated documents, only the edition cited applies. For undated documents, the most recent edition of the document (including any amendments) applies.



3 Terms and definitions

For the purposes of this PAS the following terms and definitions apply:

3.1 application period

period of time between the baseline date and the first qualifying date or between successive qualifying dates, for which a declaration in respect of carbon neutrality is made

3.2 baseline date

date on which the carbon footprint for the subject was first determined in accordance with this PAS

3.3 carbon dioxide equivalent (CO₂e)

the universal unit of measurement used to indicate the global warming potential of greenhouse gases expressed in the terms of the 100 year global warming potential of one metric tonne of carbon dioxide
NOTE The carbon dioxide equivalent is calculated using the mass of a given greenhouse gas multiplied by its global warming potential.

3.4 carbon footprint

absolute sum of all emissions of greenhouse gases caused directly and indirectly by a subject either over a defined period or in relation to a specified unit of product or instance of service and calculated in accordance with a recognized methodology

3.5 carbon neutral

condition in which there is no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject

3.6 carbon neutrality

state of being carbon neutral

3.7 carbon offset

discrete reduction in greenhouse gas emissions not arising from the defined subject, made available in the form of a carbon credit and used to counteract emissions from the defined subject
NOTE Carbon offsets are acquired to compensate for greenhouse gas emissions arising from a defined subject. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project that generates the offsets. A carbon credit is a generic term to assign a value to the carbon offset. One carbon credit is usually equivalent to one tonne of carbon dioxide.

3.8 declaration

formal statement in respect of carbon neutrality

3.9 determine

ascertain or establish by calculation, the essential characteristics of a subject and allocate a unique identity

3.10 direct emissions (Scope 1 – see below for further definition)

greenhouse gas emissions from sources that are owned or controlled by the entity

3.11 emission factor

amount of greenhouse gases emitted, expressed as carbon dioxide equivalent and relative to a unit of activity
NOTE Emission factors are used to calculate GHG emissions from activity data such as fuel consumption, production, or consumption statistics. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant. Hence an emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

3.12 emission intensity

average emission of greenhouse gasses from a given source relative to the frequency of occurrence of a specific activity (e.g. tCO₂e per specified unit of product, instance of service or value or revenue generated)
NOTE Measuring reductions using emission intensity allows an organisation to account for increases or decreases in production over time. When using economic metrics as a normalising factor, it is essential that consideration be given to the effect of inflation.

3.13 entity

thing with distinct and independent existence, e.g. country; community; organization; company; division; department; family; individual, seeking to achieve carbon neutrality

3.14 global warming potential (GWP)

factor describing the radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time
[BS ISO 14064-1:2006, 2.18]
NOTE Carbon dioxide is assigned a GWP of 1, while the GWP of other gases is expressed relative to the GWP of carbon dioxide from fossil carbon sources. Global warming potentials for a 100-year time period are produced by the Intergovernmental Panel on Climate Change.

3.15 greenhouse gas (GHG)

six gases listed in the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆)

3.16 greenhouse gas emission

release of greenhouse gases to the atmosphere

3.17 indirect emissions (Scope 2 and 3 – see below for definitions)

greenhouse gas emissions that are a consequence of the activities of an entity/subject but occur at sources owned or controlled by another entity

3.18 material (to)

influencing the decisions, actions and performance of an entity or its stakeholders
(from AA 1000 Accountability Principles Standard 2008)

NOTE A materiality threshold (qualitative and/or quantitative criteria for determining materiality) can be used to help determine whether Scope 3 greenhouse gas emissions need to be included. For example, GHG emissions that contribute less than 1% of the total emissions associated with the subject could be excluded – see Clause 5.2.5.

3.19 qualifying date

date at which carbon neutrality has been, or will be, achieved

3.20 qualifying explanatory statement (QES)

collation of evidence in support of the declaration of a commitment to carbon neutrality and / or the declaration of achievement of carbon neutrality, in compliance with PAS 2060

3.21 primary activity data

process-specific data obtained by direct measurement of the energy or business activities
NOTE Examples of primary data include the amount of energy used, service provided, material produced.

3.22 reduction

process or action resulting in a decrease in the greenhouse gas emissions specifically related to/arising from the subject

3.23 residual emissions

greenhouse gas emissions from the defined subject remaining after the achievement of reduction

3.24 Scope 1 emissions (Direct emissions)

greenhouse gas emissions from sources that are owned or controlled by the entity (described as direct emissions)
NOTE This includes GHG emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; GHG emissions from chemical production in owned or controlled process equipment.

3.25 Scope 2 emissions (Energy indirect)

greenhouse gas emissions from the generation of energy utilized in direct connection to the activities of a particular entity/subject but occurring at sources owned or controlled by another entity
NOTE Electricity, heat, steam and cooling that is purchased or otherwise brought into the entity boundary.

3.26 Scope 3 emissions (Other indirect)

greenhouse gas emissions that are a consequence of the activities of an entity/subject but occur at sources owned or controlled by another entity and which are not classified as Scope 2 emissions
NOTE Scope 3 includes the extraction and production of purchased materials; transportation of purchased fuels; and use of bought products and service; use of public transport such as rail and aircraft.

3.27 secondary data

non-process specific data obtained from sources other than direct measurement of the energy or business activities

3.28 subject

that which is to be analysed for greenhouse gas emissions and in relation to which quantification, reduction and offsetting in the terms of this PAS, can be undertaken

3.29 validate

check or prove the veracity of a claim of compliance with PAS 2060

4 Demonstrating carbon neutrality

4.1 Requirements overview

Any entity seeking to demonstrate carbon neutrality through compliance with this PAS shall undertake the actions specified in a) through g) below (see also Figure 1) and in the related clauses of this PAS that each refers to:

- a) Determine the subject of the intended claim of carbon neutrality (see Clause 5).
- b) Quantify the carbon footprint of that subject using a recognized methodology (see Clause 6).
- c) Develop a Carbon Footprint Management Plan (see Clause 7) and make a declaration of commitment to carbon neutrality in accordance with the requirements of this PAS (see Clause 10).
- d) Take action to reduce the carbon footprint of the determined subject and establish the effectiveness of those actions (see Clause 8).
- e) Re-quantify the carbon footprint of the determined subject, ensuring that subject is unchanged, to determine the residual GHG emissions, using the methodology applied at b) (see Clause 8).
- f) Introduce or take account of a previously initiated, offset programme to balance out the residual GHG emissions (see Clause 9).
- g) In the event that carbon neutrality has been achieved for the determined subject, make a declaration of achievement of carbon neutrality in accordance with the requirements of this PAS (see Clause 10).

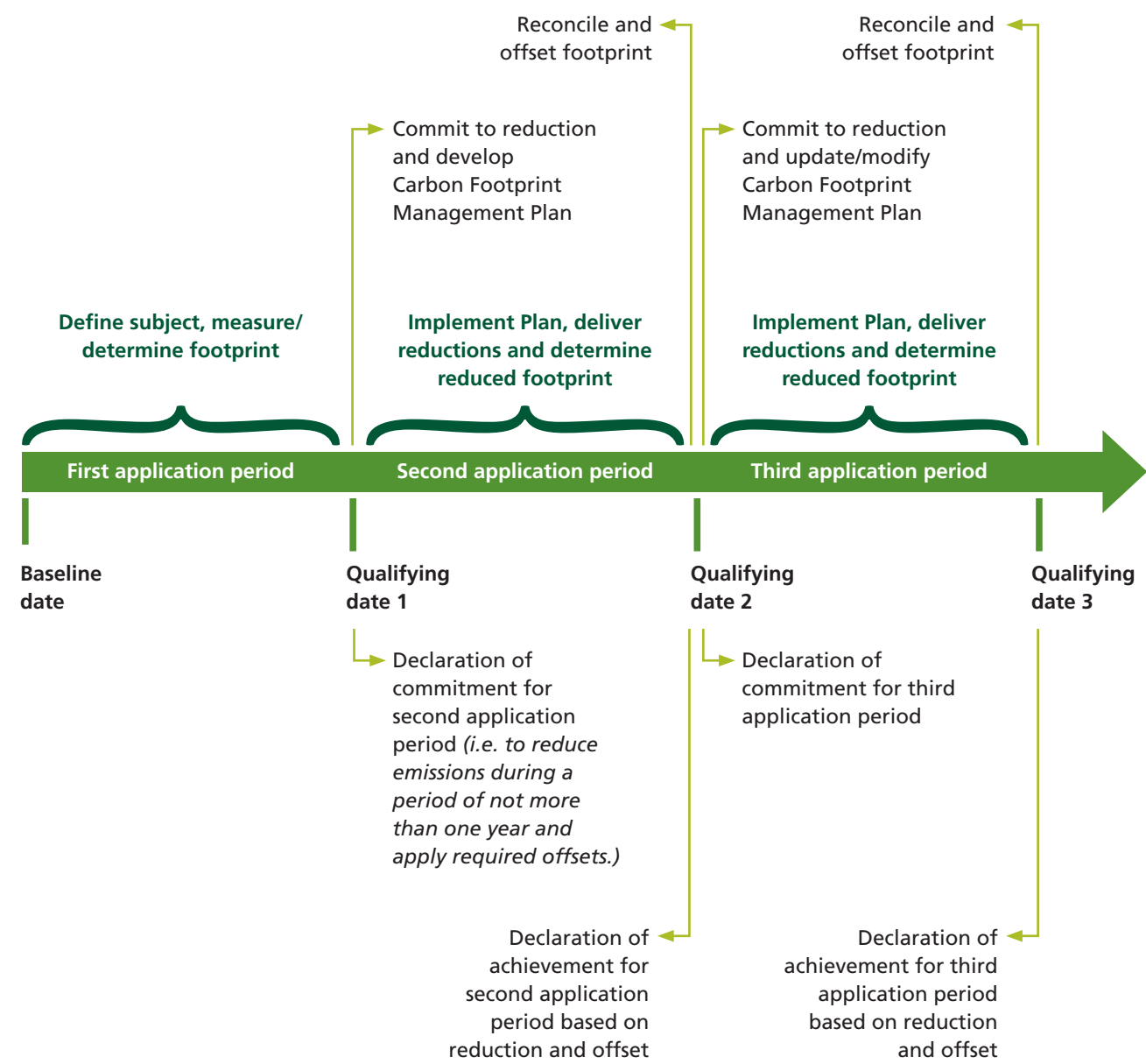
4.2 Selection and reliability of supporting methodologies

4.2.1 Methodologies used to deliver the evidence needed to substantiate the declarations contained within this PAS, shall follow, in order of preference, International Standards (ISO), standards that have international acceptability (i.e. regional or national standards) or recognized, proprietary industry or trade methods that are considered to be sufficiently robust to demonstrate carbon neutrality in accordance with this PAS in a manner that can be reliably and repeatedly validated. If there are no methods already in existence, an entity may develop a method, provided it meets the principles and other requirements of this specification, provides reliable and reproducible results and is freely available for peer review.
NOTE Attention is drawn to the fact that legislation may impose specific requirements on entities to use certain methodologies. It is the responsibility of the entity applying this PAS to check for any applicable legislation.

4.2.2 Evidence used to substantiate declarations contained within this PAS shall be fully documented and the documentation retained by the entity for the period that the status of carbon neutrality is valid, and for a period of six years thereafter.



Figure 1 – Illustration of the basic requirements for demonstrating carbon neutrality

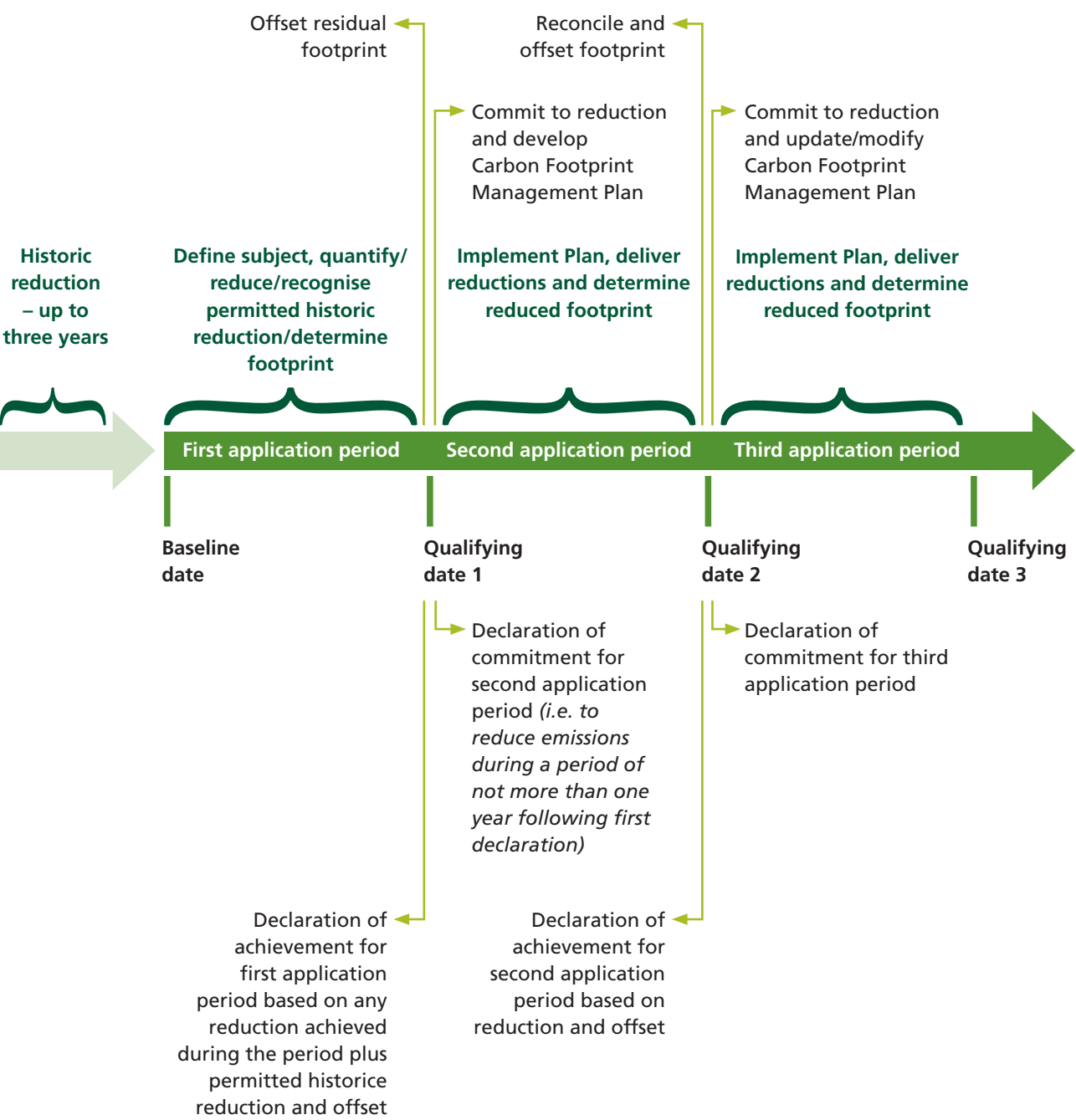


NOTE 1 This option involves setting a baseline date and determining the footprint of the defined subject over the first application period. Once this is complete and the footprint determined, the entity can commit to reduction and implement a Carbon Footprint Management Plan. The plan may involve a parallel programme of ongoing reductions and offsetting with reconciliation occurring at the end of the second application period to ascertain whether carbon neutrality has been achieved. Alternatively, the plan may focus solely on achieving reductions throughout the second application period at the end of which the residual footprint is determined and sufficient offsets

subsequently acquired to achieve carbon neutrality. Declaration of Achievement of carbon neutrality can only be achieved at the end of the second application period.

NOTE 2 Although the timeline for achievement and maintenance of carbon neutrality is essentially linear, the periodic activity will tend to be iterative and therefore cyclical in nature i.e. having defined the intended subject, it could be that quantification proves impracticable or not commercially viable, in which situation it will be necessary to identify and quantify a modified or alternative carbon footprint.

Figure 2 – Illustration of the requirements for demonstrating carbon neutrality, taking into account reductions achieved historically



NOTE 1 This second options enables entities to take into consideration GHG emission reductions associated with the defined subject prior to the baseline date to enable declarations of neutrality. A Declaration of Achievement of carbon neutrality can therefore be made at the end of the first application period and can be based on reductions achieve during the first application period and the three years prior to the baseline date.

NOTE 2 Although the timeline for achievement and maintenance of carbon neutrality is essentially linear, the periodic activity will tend to be iterative and therefore cyclical in nature i.e. having defined the intended subject, it could be that quantification proves impracticable or not commercially viable, in which situation it will be necessary to identify and quantify a modified or alternative carbon footprint.