Proposed carbon accounting methodology

(Adapted by Local Authority Climate Policy Group, original work produced by Sustainability Adviser, Lake District National Park Authority)

The purpose of this methodology is to ensure that a consistent framework for carbon accounting and reporting is followed.

Definitions

1. Greenhouse Gases (GHG)

The Kyoto Agreement identified six GHG emissions:
carbon dioxide (CO_2)
methane (CH_4)
nitrous oxide (N_2O)
hydrofluorocarbons (HFCs)
perfluorocarbons (PFCs)
sulphur hexafluoride (SF_6)

2. CO_2 equivalent (CO_{2e})

A carbon footprint is measured in tonnes of CO_2 equivalent (tCO_{2e}) to create a common unit for ease of comparison.

It is calculated using the activity data collated and then multiplied by standard emissions factors. The official set of standard emission factors are published by the UK Government, the 2019 UK Government Greenhouse Gas Conversion Factors for Company Reporting (2019 GHG Conversion Factors) are the most recent set.

The use of a factor is a substitute for the actual measurement of emissions, allowing for the calculation of GHG emissions from a range of activities, including energy use, water consumption, waste disposal and recycling, and transport activities. The factors include estimates within the calculations and are subject to annual review which has led to significant changes from year to year.

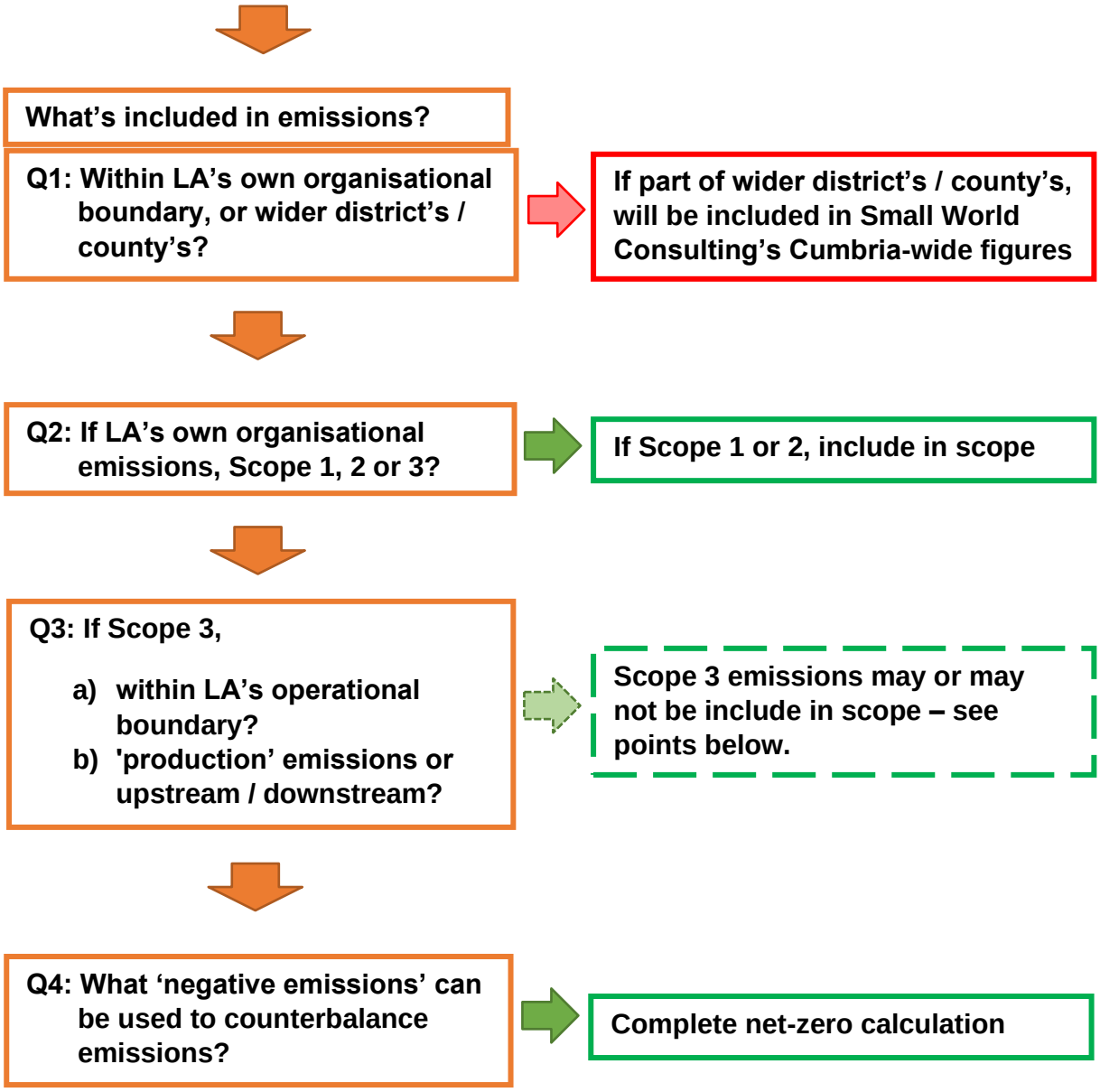
3. Net-zero

In simple terms, net-zero is achieved when greenhouse gas (GHG) emissions (measured as carbon-equivalents, CO_{2e}) are balanced and neutralised (offset[1]) by carbon sequestration and/or other measures which result in a net decrease in atmospheric GHGs.

4. Scope and organisational boundary

[1] The term 'offsetting' can have a more specific technical meaning, but used here in a more general way

It is therefore crucial that the Council has a clear understanding and rationale for the components which comprise its emissions and any future offsetting. This is defined by the scope and organisational boundary, and can be answered with a cascade of questions:



Q1: Organisational boundary

We need to distinguish between the Councils own-operation carbon emissions and those of other organisations, the wider district, county or beyond. This is defined as the organisational boundary.

Emissions relating to the Council's owned assets are straightforward, but it is less straightforward with leased assets. **It is proposed that leased-in assets are included in the scope and leases-out assets are excluded from the scope.**

It makes sense to either include leased-in or leased-out assets but not both; and on balance, the user/occupier of a building has more control over its GHG emissions than the owner. **The exceptions to this rule are explored in scope 3.**

The Council's operational and investment assets have been assessed to produce Display Energy Certificates (DECS) and Energy Performance Certificates (EPCS), where required. This information is being used to assess the assets against the Minimum Energy Efficiency Standards (MEES), these are the minimum level of energy efficiency required to let non-domestic property under the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015.

Q2: Scope 1 and 2

Since organisational reporting standards were introduced around 2009, Local Authorities have reported on their own greenhouse gas (GHG) emissions following Government guidelines[2]. These are based on the International Greenhouse Gas Protocol[3], and divide emissions into Scopes 1, 2 and 3.

Scope 1 are direct emissions, these are the emissions from owned plant (such as boilers, vehicles and machinery).

Scope 2 is indirect energy; these are emissions from energy purchased from an external supplier (primarily electricity but also may be heat or cooling).

It is proposed that scope 1 and 2 activities are included in the accounting.

Q3: Scope 3

Scope 3 are other indirect emission. These can be from processes or transport not owned by the Council (such as business travel by public transport, emissions linked to waste disposal). Scope 3 items are optional and are included at the organisation's discretion, dependent on any specific goals determined.

The Council is free to decide what to include in scope, depending on either:

- Equity share
- Financial control
- Operational control

2**https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/791529/E**nv-reporting-guidance_inc_SECR_31March.pdf

3 http://ghgprotocol.org/sites/default/files/ghgp/standards/ghg-protocol-revised.pdf

The Council may or may not include upstream / downstream emissions, known as ‘embodied’ carbon. This is analogous to a consumption approach rather than the preferred production approach.

Scope 3 will therefore be the biggest grey area in terms of organisational boundary but may also represent a high proportion of overall emissions so is an important factor in justifying a ‘net-zero’ declaration.

The two main areas of distinction within Scope 3 are in determining the operational boundary. Where a source of emissions is shared with an external party, such as an operation function which is outsourced. This is a question of operational boundary (as defined in the GHG Protocol).

There are three alternative ways to determine whether to include this emissions source in scope:

- Equity share. This is mainly suited to commercial companies rather than Local Authorities
- Financial control. This is recommended (but not prescribed) by UK government for Local Authorities. The determination hinges on how much financial interest there is in the operation.
- Operational control. This is the party which has operational control who has the greatest influence in the way that the operation is run and hence the carbon intensity.

The proposal is to include activities that the Council has a clear operational and/or financial control.

Production or consumption accounting

The key decision is whether ‘production’ or ‘consumption’ accounting is used – i.e. whether ‘upstream’ and possibly also ‘downstream’ emissions are included.

- Production accounting only considers day-by-day emissions from sources such as buildings and vehicles;
- Consumption accounting includes ‘upstream’ emissions, also referred to as ‘embodied carbon’. ‘Downstream’ emissions – those related to disposal of the item - may also be included.

Production emissions are relatively straightforward to measure and account for, but consumption emissions are much more difficult to quantify – not least because most emissions are occurring elsewhere and produced by other parties. Consumption emissions are also more one-off (for instance, those associated with building a new building), making it harder to compare one year with another.

The proposal is to use production accounting for the Council's carbon footprint and consumption accounting for the Cumbria Carbon Baseline.

'Negative emissions'

Negative emissions are generally referred to as 'offsetting', but care must be taken to distinguish between two aspects:

- Carbon sequestration
  The actual removal of CO_2 (or other GHG) from the atmosphere by plant growth, incorporation of carbon into soil, carbon capture and storage (CCS) or some similar process.
- Emission avoidance
  This covers many things which might be referred to as offsetting, such as:
  - Renewable electricity generation;
  - Recycling or other diversion of waste from landfill;
  - Stabilisation of peat erosion.

The proposal is to use the emissions avoidance activities of the Council, such as renewable electricity generation and recycling of waste as part of the accounting.

Summary of proposals

It is proposed that:

- Leased-in assets are included in the scope and leases-out assets are excluded from the scope. The exceptions to this rule are explored in scope 3.
- That scope 1 and 2 activities are included in the accounting.
- For scope 3, the proposal is to include activities were the Council has a clear operational and/or financial control.
- Production accounting is used for the Council's carbon footprint and consumption accounting for the Cumbria Carbon Baseline.
- The emissions avoidance activities of the Council, such as renewable electricity generation and recycling of waste are part of the accounting.

Annual calculations

In applying these proposals the Council should use the following figures in the annual reporting and net-zero calculations:

1. Net GHG emissions: Scope 1 + Scope 2 emissions plus Scope 3 as defined above
2. Gross GHG emissions: As per (1) with additional reference to:

Full electricity emissions (if taking advantage of renewable tariff discount)

Full biomass emissions (including CO_2)

3. Additional emissions: separately quoted significant ‘upstream’ emissions, such as the embodied carbon associated with a new building