Carbon Neutral Government Programme

A guide to measuring and reporting greenhouse gas emissions

Version 2.1 October 2021

Carbon Neutral Government Programme

Te Kāwanatanga o Aotearoa
New Zealand Government

Purpose

This document contains guidance for Carbon Neutral Government Programme (CNGP) organisations on measuring and reporting their greenhouse gas (GHG) emissions. It includes information on what sources of GHG emissions organisations need to collect, standards to follow, methods for calculating emissions, the required information to report, who to report to, and by when. For further enquiries, contact cngp@mfe.govt.nz.

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Version control and updates

Updates to this document are as follows:

Date	Update
Version 1.0 5 January 2021	Initial version circulated to Tranche 1 agencies.
Version 2.0 30 June 2021	Full version circulated to Tranche 1 agencies and to Tranche 2 agencies as part of consultation on a whole-of-government direction. This version provides updated and expanded guidance on measuring, verifying and reporting emissions.
Version 2.1 1 October 2021	Revision following consultation on whole-of-government direction and confirming alignment with ISO14064-1:2018 and the Greenhouse Gas Protocol. Key updates: • section re-ordering and full contents added for easier navigation • additional information on standards • clarity on scope of reporting • inclusion of all scope 1 and 2 emissions and mandated and material scope 3 emissions in table 3 and appendix 1 • inclusion of subsidiaries and international sites within mandated scope of reporting as relevant • average base year added • extra guidance on selecting emission factors.

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This section provides important information and key dates regarding your participation in the Carbon Neutral Government Programme (CNGP).

1. Background

Climate change is one of the greatest challenges of our time. Aotearoa New Zealand has committed to taking urgent action on greenhouse gas (GHG) mitigation and climate change adaptation through the Paris Agreement and the Zero Carbon Act. The Government also needs to show leadership within and outside Aotearoa to reduce emissions from its own activities. It needs to demonstrate what is possible to other sectors in the economy and showcase positive action to the rest of the world.

On 2 December 2020, the New Zealand Government announced the CNGP – with the aim of GHG emissions faster and working towards carbon neutrality by 2025. The Government and many of our partners and stakeholders expect organisations to take responsibility for their own GHG emissions.

CNGP participants

CNGP organisations have been phased into three tranches.

- **Tranche 1** organisations include departments, departmental agencies and non-public service departments, excluding the Office of the Clerk of the House of Representatives and the Parliamentary Service – instructed from 2021/22 to measure and report their emissions.
- **Tranche 2** organisations include Crown Agents – to be directed from 2022/23 to measure and report their emissions.
- **Tranche 3** organisations include the Reserve Bank of New Zealand, Offices of Parliament, the Office of the Clerk of the House of Representatives, the Parliamentary Service and tertiary institutions (including the New Zealand Institute of Skills and Technology) – to be encouraged from 2022/23 to measure and report their emissions.

Programme Lead

The Programme Lead referred to throughout this document is the lead agency coordinating the Carbon Neutral Government Programme, currently the Ministry for the Environment (MfE). MfE works closely with the Ministry of Business, Innovation and Employment (MBIE) and the Energy Efficiency and Conservation Authority (EECA) to manage the programme.

2. What you are expected to do

This section outlines the key requirements in this long-term work programme.

Measure and report your organisation's GHG emissions, and set gross GHG emissions reduction targets

This guide walks you through the measuring, reporting and reduction requirements agreed to by Cabinet[1].

- Report your emissions and set a gross emissions reduction target for 2025 and 2030, using this guidance to develop and implement credible reduction plans to help you reach your gross emissions reduction targets.
- Report your emissions, reductions plans and progress towards your gross emissions reduction targets to the Programme Lead by 1 December each year, using the guidance.
- Include summarised information provided to the Programme Lead in your annual reports.

Reduce your organisation's GHG emissions

Cabinet agreed to a range of actions under the CNGP to reduce organisational GHG emissions across government.[2] Initial priority areas include:

(a) phasing out state sector coal-fired boilers with a focus on removing the largest and most active by the end of 2025

(b) requiring agencies mandated to apply the Government Procurement Rules to:

- optimise their fleets with the aim of reducing the number of vehicles
- choose a battery electric vehicle, or plug-in hybrid electric vehicle if a battery electric vehicle is not appropriate, when replacing vehicles (unless there are operational requirements or other circumstances that prevent them from doing so)

(c) continuing to invest in low-emissions heating, cooling, and vehicles, and energy efficient lighting through the State Sector Decarbonisation Fund

(d) requiring NABERSNZ (a building energy efficiency rating) from January 2021 for agencies that occupy large office spaces (over 2,000m^2) that are mandated to apply the Government Procurement Rules

(e) implementing strengthened directions regarding the procurement of new government buildings to prioritise low carbon designs, building materials, products and construction processes.

How to reduce emissions is not the main focus of this guide but there is information on where to go for help in reducing emission sources.

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1 CAB-20-MIN-0491 and CBC-21-MIN-0030.

2 See list of organisations included in the CNGP.

Offset your organisation's remaining GHG emissions

There will be some GHG emissions that cannot be reduced. Your organisation will need to offset those remaining emissions by December 2025 onwards. At this stage, the focus is on measuring, reporting and significantly reducing your emissions. The Programme Lead recognises that clarity on offsetting requirements will assist in making operational and investment decisions. Work is underway on the offsetting component of the CNGP, which requires further decisions from Ministers. The Programme Lead will keep participants updated as the work progresses.

CNGP reporting requirements

This section provides further detail and timelines for the two types of CNGP reporting requirements.

1. Each CNGP organisation needs to submit GHG emissions information to the Programme Lead through an annual survey.
2. Each CNGP organisation needs to publicly report their organisational-level GHG emissions in their annual report.

When and what to submit

The important submission dates for Tranche 1 organisations are:

- 1 December 2022 for submission of your GHG inventory, other supplementary information and evidence of verification (ie, your assurance statement or verified disclosure statement) to the Programme Lead for 1 July 2021–30 June 2022
- follow normal annual reporting timeframes for including GHG reporting information in your annual report
- if you have set a base year that is prior to the financial year 2021/22 for the purpose of emissions reduction target setting, submit your base year inventory and accompanying assurance statement by 1 December 2022.

The important submission dates for Tranche 2 and 3 organisations are:

- 1 December 2023 for submission of your GHG inventory, other supplementary information and evidence of verification (ie, your assurance statement or verified disclosure statement) to the Programme Lead for 1 July 2022 – 30 June 2023
- follow normal annual reporting timeframes for including GHG reporting information in your annual report, and
- if you have set a base year that is prior to the financial year 2022/23 for the purpose of emissions reduction target setting, submit your base year inventory and accompanying assurance statement by 1 December 2023.

Table 1: High-level timeframes for CNGP reporting requirements

Milestone	Tranche 1	Tranche 2 and Tranche 3
Start measuring your organisation's emissions for the financial year.	1 July 2021	1 July 2022
Get your GHG inventory for the year verified.[3]	July-September 2022	July-September 2023
Provide summarised information in your annual report.	In line with annual reporting timeframes (around October 2022)	In line with annual reporting timeframes (around October 2023)
Report your verified emissions for the previous financial year, plus targets for 2025 and 2030 and reduction plans, to the Programme Lead.	December 2022, and by each December subsequently	December 2023, and by each December subsequently
Review of gross emissions reduction targets and collective progress made against targets so far. Start offsetting emissions.	December 2025	December 2025
Review of gross emissions reduction targets.	December 2028	December 2028
Review of gross emissions reduction targets.	December 2030	December 2030

The collated information from CNGP organisations will be shared with CNGP Ministers annually and made publicly available**.** It will also inform the CNGP reviews of collective progress on meeting the 2025 and 2030 gross emissions reduction targets (based on reporting from the previous financial year) in December 2025 and 2030, to ensure the targets are ambitious but also achievable.

Table 2 sets out the information to provide to the Programme Lead and in your annual report.

Table 2: Mandatory information to provide each year

Information required	To Programme Lead	In annual report
Total annual emissions (including all mandatory and material emissions scopes/sources) for the financial year (July-June), reported as total tonnes of carbon dioxide equivalent units (tCO_2e)	Yes	Yes
Emissions profile broken down by emissions source/scopes (tCO_2e)	Yes	Yes
Base year period and total emissions (tCO_2e)	Yes	
The consolidation approach chosen (control or equity share[4])	Yes	
Full-time equivalent of staff (FTE) in the reporting period (based on what is reported in your organisation's annual report)	Yes	Yes
Total expenditure in the reporting period (based on what is reported in your organisation's annual report)	Yes	Yes

[3] See notes on Allowances regarding verification.

[4] See notes under Define your organisational boundary.

Information required	To Programme Lead	In annual report
Change in total emissions each subsequent year compared to the base year (tCO_2e) [5]	Yes	
2025 and 2030 gross emissions reduction targets (%) – this must be a combined total across all scopes/sources, and can also be broken down by scope/source	Yes	Yes
Progress towards 2025 and 2030 targets compared to base year (%)	Yes	Yes
Qualitative commentary on results: the agency must explain • their initiatives for reducing emissions and progress towards these, and • the context of their emissions inventory and progress, for example, any data gaps, emissions sources excluded and why, challenges or significant changes experienced, and plans for improvement over time	Yes	Yes

In instances where your organisation faces context-specific challenges in gathering the required data, particularly for agencies with more complex portfolios, the Programme Lead acknowledges that it may take several years to gather data.

The Programme Lead will send CNGP participants a survey and template for reporting emissions totals and associated information each year.

Summarised information submitted to the Programme Lead will be collated annually by the Programme Lead, shared with Ministers, and made publicly available.

Allowances

There are allowances for instances in which your reporting period, verification or annual reports don't line up with submission dates.

- If your GHG inventory reporting period does not align with the July–June financial year, you can submit verified and non-verified data to the Programme Lead. That is, you can submit six months of verified data (from the previous financial year) and six months of non-verified data to the Programme Lead for the ongoing financial year, acknowledging this will be verified at your next audit.
- Notify the Programme Lead if your annual report is published after the December 2022 deadline, and again when the annual report is published.
- If your timeline for verification does not meet your annual report deadlines, you can include estimated and unverified data. However, this needs to be clearly stated and the verified data included in the subsequent year's annual report.

[5] You must report your organisation's absolute emissions reductions, but you may also choose to track your performance against relevant operational outputs or investments (ie, an emissions intensity measure).

Part B: Technical guide to measuring and reporting your greenhouse gas emissions

This section provides technical guidance on how to measure and report your organisation's emissions. This is the information you submit to the Programme Lead and provide in your annual report.

Measuring and reporting your organisation's GHG emissions tells you where your emissions come from and enables you to embed emissions management in your organisation's systems and processes. It also means you can develop reduction plans that are practical and effective for you – you know best how your organisation works. Transparent reporting will help you be accountable to Ministers and other stakeholders for your GHG emissions and the reductions you make.

3. Standards to follow

Your GHG emissions inventory should be prepared using the criteria stated in the international standards: ISO 14064-1:2018 and/or the Greenhouse Gas Protocol. Both standards provide best practice and are widely adopted for organisational GHG reporting. Sector specific standards aligned to these two standards may also potentially be used but check this with the Programme Lead prior to adopting them.

Verification of emissions inventories should be conducted in accordance with the ISAE (NZ) 3410 standard or the ISO 14064-3:2019 standard. See Have your inventory verified.

The Greenhouse Gas Protocol

The GHG Protocol *Corporate Accounting and Reporting Standard* (WRI and WBCSD, 2004) is used globally for organisational GHG accounting. It defines three scopes of emissions reporting. These are covered in more detail in the Create an inventory section of this guide.

A supplementary standard, the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (WRI and WBCSD, 2011), recognises that emissions in value chains often represent the largest source of an organisation's emissions and present the most significant opportunity to influence GHG reductions. The standard is designed to promote best practice in developing a full GHG inventory incorporating scope 1, 2 and 3 emissions. This enables organisations to understand their full emissions impact across value chains and focus efforts where they can have the greatest impact.

Both these documents are freely available and contain useful practical guidance for setting up GHG accounting for organisations. Additionally, the *Technical Guidance for Calculating*

Scope 3 Emissions (WRI and WBCSD, 2013) provides useful guidance on practical approaches to data collection.

ISO 14064-1:2018

ISO 14064 Greenhouse gases Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (International Organization for Standardization, 2018) provides a standard for organisations to quantify and report their emissions which is largely based on and aligns with the GHG Protocol. It is part of a broader suite of standards. Part 2 provides standards for the project level and Part 3 deals with verification and validation.

4. Key principles for CNGP implementation

The principles set out in ISO14064-1:2018 and the GHG Protocol aim to create an emissions inventory at the organisational level which is relevant, complete, consistent, accurate and transparent. Aligning with the principles in these international guidelines ensures you are following best practice to consider your organisation's full emissions, and where you can focus efforts to have the greatest reduction impact.

As you measure and report your emissions keep these three CNGP principles of implementation in mind:

Credibility
We are doing this to show leadership, credibility and integrity in reporting emissions and emission reductions.

Consistency
We measure and report GHG emissions in a consistent and coordinated way, enabling annual comparability for each organisation. We take responsibility for our own organisations, while working to ensure we act as a whole.

Collaboration
We empower our 'champions', share best practice, and commit collectively to building our capacity to measure, report and reduce our organisations' emissions.

5. Timeline for preparing your GHG emissions inventory and reduction plans

All organisations in Tranche 1 have been instructed to report emissions and publish reduction plans (including gross emissions reduction targets) from the 2021/22 financial year by December 2022. The work is expected to be funded from your organisational baseline. This means:

- you need to start measuring emissions from July 2021 (for the period 1 July 2021 – 30 June 2022)

- you have five months (1 July – 1 December 2022) to verify and publicly report your emissions in your annual report and to the Programme Lead, and to set in place your reduction plan and targets.

Crown Agents in Tranche 2 and organisations in Tranche 3 will follow the same trajectory but start a year later.

The earlier your organisation starts, the better placed you will be to meet the expectations of the CNGP. While measuring emissions can seem complex at first, once you have established the right systems, they become easy to administer and maintain.

You will need to show progress towards your targets and meeting your reduction plans each year.

6. Key steps to compile your GHG emissions inventory

Table 3 shows an overview of actions required for compiling an organisational GHG inventory, which is explained in more detail on the following pages.

Table 3: Actions required for compiling a GHG inventory

The groundwork	Action	Outcome
Understand your organisation's facilities, assets and activities.	Define your base year.	A base year emissions inventory to measure the changes in your emissions over time and develop your reduction plans.
An asset register can be useful in identifying potential emission sources within your organisation.	Define your organisational boundary - based on legal structure, sites, assets and activities that your organisation is responsible for.	A clear organisational boundary to define the sites, assets and activities that are deemed to be within the scope of your GHG reporting.
A list of suppliers can be useful in identifying emission sources within your organisation's control. Procurement teams can often provide data on financial spending by supplier. Identify key people within your organisation with relevant information (eg, facilities	Create an inventory to quantify all emissions sources within scope of your organisational boundary for that year. Refer to the GHG emissions sources reported under the CNGP illustrated in table 4 and appendix 1. Consider the criteria to determine the significance of emission sources to be included, see table 5.	List of all material sources of emissions for your organisation.
	Document information and assumptions for each emissions source, number of suppliers and how/where you obtained the	Total consumption/usage of emitting activities, and emission removals.

The groundwork	Action	Outcome
managers, finance managers, procurement managers).	information. Include any assumptions you have made in calculating the total activity data.	
Identify existing sources of information and systems which provide the reporting you need.	Apply the appropriate emission factor to the sources and calculate the total emissions per source. Document any assumptions you have made related to emission factors.	Total GHG emissions per source/sink.
Review your organisation's annual OPEX and CAPEX reports to ensure key activities are not omitted.	Have your inventory verified. Document your methodology in an inventory report, emissions database (or both) to ensure your inventory is auditable, traceable and transparent. Seek early feedback from your assurance/verification provider that the inventory methodology and approach being followed aligns with the standards and CNGP requirements.	Your inventory is documented, traceable, transparent, and the results can be summarised easily for reporting proposes. The method followed can be understood, audited, and picked up and repeated by others in your organisation.

Define your base year

A base year emissions inventory allows you to measure the changes in your emissions over time and develop reduction plans. The base year inventory, and your inventories following, are accounts of the total GHGs emitted through your organisation's activities for a given year.

The base year you set under the CNGP should be no earlier than 1 July 2015 – 30 June 2016 and no later than 1 July 2021 – 30 June 2022 for Tranche 1 (or no later than 1 July 2022 – 30 June 2023 for Tranches 2 and 3). Setting an average base year is permitted, which represents an average period of up to three consecutive years of verified annual data.

Your base year should be representative of your organisation's typical emissions profile. The rationale for choosing your selected base year period should be documented. It must be 12 consecutive months, or an average of up to three consecutive years of verified annual data.

You should ensure you have the required data to complete an emissions inventory for the selected base year period covering all mandatory sources. If you think there are aspects of your activity that are significantly impacted by COVID-19, consider using an earlier period for your base year representing 'business as usual' if you have annual inventory data available.

Verification of base year data

You must obtain external verification of your base year inventory data, whether that represents a single year (the current year, or a historic year), or an average drawn from up to three verified annual inventories. However, verification of inventories for intervening years between the base year and the financial year your organisation is required to start reporting

is optional. For CNGP purposes it is important that the base year uses robust verified data, and current and future reporting is robust and verified. For further information, see the Have your inventory verified section of this guide.

Changing the base year

Recognising there will be ongoing change, you may signal a need to recalculate your base year to the Programme Lead. For example, if your organisation will undergo a substantial re-organisation of structure and functions or a change in calculation methodologies. In such a case, an explanation and rationale for the change needs to be submitted to the Programme Lead for consideration. Refer to the GHG Protocol and ISO 14064-1:2018 for guidance on reviewing base years.

Define your organisational boundary

Both the ISO 14064-1:2018 and the GHG Protocol have guidance on how to set an organisational boundary.

For measuring and reporting GHG emissions, the main GHG standards recommend organisations select an approach for grouping activities or the GHG-emitting sources under the organisation's responsibility. Two consolidation approaches are: control or equity share.[6] The Programme Lead does not have a view on a preferred method.

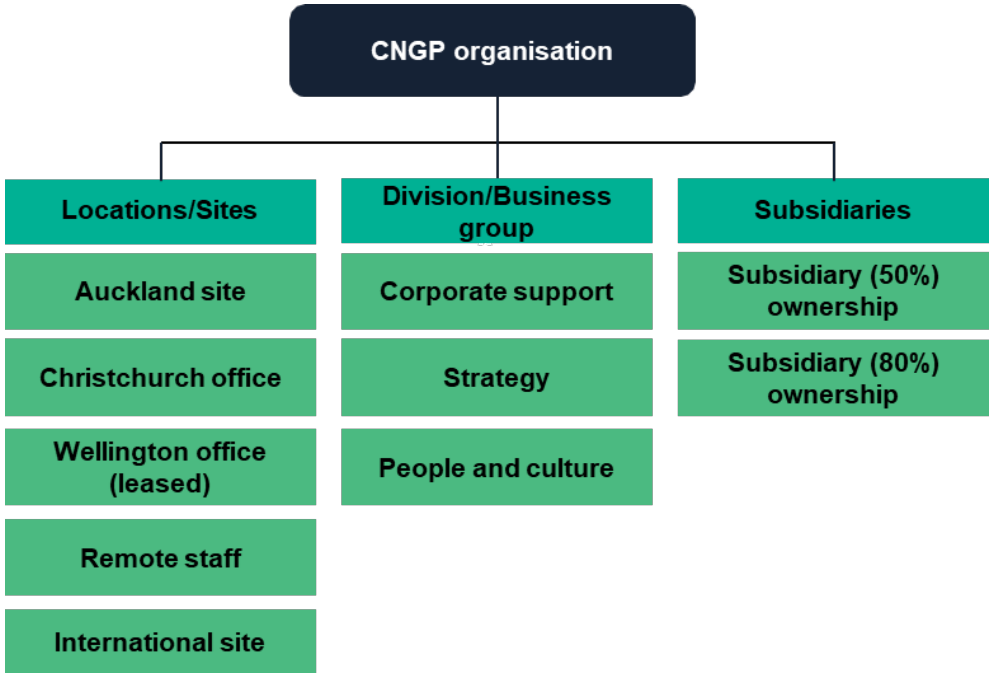
If your organisation has partial or full ownership of a subsidiary organisation, you may submit associated emissions if deemed significant (see table 5 for more information on how to determine other sources of significance). If you report on emissions associated with separate entities, those emissions need to be clearly described and reported to the Programme Lead separately. Make sure you document anything considered but ruled out of the boundary and explain why.

Quick tip
International standards provide guidance on setting your organisational boundary. Speak to your legal or financial team about this, as the boundary of the organisation typically aligns with the legal and/or organisational structure; a financial boundary must be drawn within this too.

[6] Control means the organisation accounts for all GHG emissions from facilities over which it has financial or operational control. Equity share means the organisation accounts for its portion of GHG emissions from respective facilities. The *GHG Corporate Accounting and Reporting standard* (2004) includes an explanation of these two approaches.

Figure 1 illustrates an example CNGP organisational boundary chart and how GHG emissions from subsidiaries and international sites are included within the scope of reporting if deemed significant.

Figure 1: Example CNGP reporting boundary chart



Where your agency shares space or works closely with another agency (meaning double counting or missed emissions may be a risk), talk to contacts at the other agency or agencies to discuss where lines are drawn to ensure activity is apportioned correctly and not missed or double counted. If you need linking with the CNGP contact at another agency, contact cngp@mfe.govt.nz.

Create an inventory

Your organisation will have GHG emissions associated with a wide range of owned and leased assets and purchased products and services through its value chain. You will need to group emissions sources into ‘scopes’ or ‘categories’ in line with international standards referenced in the Standards to follow section of this guide.

ISO 14064-1:2018 and the GHG Protocol contain extensive guidance related to GHG measuring and reporting. What you report in each scope, and their relative weightings, will vary depending on your organisation’s activities, assets and functions.

Direct and indirect sources

GHG measuring and reporting standards categorise emissions as direct or indirect sources. This is to manage double counting of emissions (such as between an electricity generator’s

direct emissions associated with generation and the indirect emissions linked to the user of that electricity).

Direct GHG emissions come from sources controlled by the organisation. Indirect GHG emissions are a consequence of the activities of the organisation which occur at sources owned or controlled by another organisation. The GHG Protocol places emission sources into scope 1, scope 2 and scope 3 activities.

- **Scope 1:** Direct GHG emissions from sources owned or controlled by the company (ie, within the organisational boundary). For example, emissions from the combustion of fuel in vehicles owned or controlled by the organisation.
- **Scope 2:** Indirect GHG emissions from the generation of purchased energy (in the form of electricity, heat or steam) that the organisation uses.
- **Scope 3:** Other indirect GHG emissions occurring because of the activities of the organisation but generated from sources it doesn't own or control (eg, air travel).

Note the terminology of 'categories' is used in ISO 14064-1:2018, to add further definition to the different 'scopes' that are used in the GHG Protocol. Scope 1 and 2 are the same as categories 1 and 2, respectively. Scope 3 includes categories 3, 4, 5 and 6, as shown in Table 4. Category 5 is unlikely to apply to CNPG participants. Category 6 is intended to capture any emissions not reported elsewhere.

CNGP mandatory and material GHG emissions sources

For the purposes of the CNGP, there is a defined minimum mandatory set of emissions outlined in table 4. This covers all scope 1, all scope 2 and specified scope 3 emissions. However, all CNGP participants must include all material emissions to the extent possible in their GHG emissions inventory. This means you may have additional scope 3 emissions you need to include depending on the activities of your organisation. Note that any emissions source across any scope can be excluded if it is 'de minimis', meaning less than one per cent of your organisation's total inventory. The total of all sources excluded for being de minimis should not exceed five per cent of the total inventory.

Material (scope 3) emissions means other significant indirect sources that your organisation is responsible for. See table 5 for more details of the criteria you should use to determine whether to include or exclude such sources. You need to disclose and justify any specifically excluded emissions sources, including if data is not available. The Programme Lead acknowledges that some emissions sources can take time to collect, and data improvements will occur over several years.

Table 4: GHG emissions sources reported under the CNGP

All scope 1 emissions	All scope 2 emissions	Mandatory scope 3 emissions and material scope 3 emissions
Category 1 Direct GHG emissions	**Category 2** Indirect GHG emissions from imported energy	**Categories 3, 4, 5 and 6** Indirect GHG emissions from transportation, products an organisation uses or supplies, or other sources
Examples: • Fuel use (eg, aviation fuel, biofuel and biomass (N_2O, CH_4), coal, diesel, light and heavy fuel oil, LPG, natural gas, petrol) • Refrigerant and other gas use (eg, HVAC, medical gases) • Composting • Wastewater treatment plant (owned) • Solid waste facilities (owned) • International operations (scope 1) • Agriculture and forestry (eg, enteric fermentation, fertiliser use, forest growth, forest harvest)	Examples: • Purchased electricity • Purchased heat or steam • International operations (scope 2)	**Mandatory scope 3 emissions:** • Staff travel for work (eg, domestic and international air travel, hotel stays, taxi, private car, public transport, rental vehicles) • Freight transport • Staff working from home • Transmission and distribution losses • Water supply • Wastewater services • Waste to landfill **Material scope 3 emissions:** • All other scope 3 emissions material to the organisation
Biogenic emissions mandatory to report but separated from scope 1		
Examples: Biodiesel (the CO_2 from the biofuel proportion), Bioethanol (the CO_2 from the biofuel proportion), Biomass (the CO_2)		

Appendix 1 provides further information on what each emission source covers and how to collect this information.

Appendix 2 provides further information on specific emissions sources:

- clarification on leasing arrangements
- clarification on international emissions sources
- clarification on biogenic GHG emissions
- emissions associated with sale of generated electricity
- financed emissions (emissions from investments)
- embodied emissions from construction materials and products
- waste audit methodology
- accounting for land use, land-use change and forestry
- accounting for agricultural emissions.

Outsourced activities

If you outsource some activities to third parties to deliver on your behalf, include emissions associated with outsourced activities under your material scope 3 emissions if deemed significant and within your reporting boundary.

Determining the significance of an emissions source

For many public sector organisations in New Zealand, a significant amount of their total emissions is made up of indirect scope 3 emissions, such as air travel. Identifying other operational indirect emissions (upstream and downstream of the organisation) not included in scope 1 and 2 helps get a fuller understanding of emissions. It also helps identify priority reduction areas and identify risks and opportunities associated with GHG liabilities.

When evaluating all potential GHG emissions sources, you can use the following set of criteria to help determine which sources should be included in your GHG inventory (table 5). Make sure you clearly document the rationale for excluding an emissions source.

Table 5: Criteria to determine sources to include in your GHG inventory

Criteria	Description
Size of the source in relation to total inventory	A GHG emission source which is expected to make up a significant portion of your total operational emissions; or the emission source is expected to make up a significant portion of the total scope 3 emissions (see the CNGP mandatory and material emissions section of this guide). Also consider if there are any sources that will become more significant in the future due to expansion, growth, change of operations, etc.
Risk	You may deem that some sources significantly contribute to your organisation's GHG risk exposure (eg, climate change related risks such as financial, regulatory, supply chain, product and technology, reputational, and physical risks).
Influence	You may decide your organisation has significant potential to influence emission reductions or better practice, for example: Can I implement travel budgets? Can I influence our staff to print less paper? Can I influence key suppliers to reduce their emissions?
Stakeholders	Consider if stakeholders such as employees, suppliers, investors, Ministers or the general public have an interest in or expectation of your organisation to be measuring and reducing the emissions sources you are evaluating.
Outsourcing	Many government agencies outsource some core activities. You should evaluate if your organisation has any outsourced activities that may significantly contribute to your organisation's total operational emissions or represent an activity your organisation typically performs 'internally' with its own staff and facilities.
Access to data and data quality	Some data sources may not be possible to collect, or of low accuracy. This may affect your ability to include the data in your inventory. Documenting how you plan to resolve such issues over time should be included in your commentary to the Programme Lead.

Document information and assumptions for each emissions source

In your inventory report, document who, how and where you obtain the information for each emission source (both for the activity data and emission factors) and include the number and details of the suppliers or internal points of contact for each source.

Document if you have excluded any emissions sources and, if so, why (see the CNGP mandatory and material GHG emissions sources section for guidance on when an emissions source can be excluded).

Include any assumptions you have made in calculating the total activity data so you can explain how you have done something when it comes to the annual verification of your information.

See appendix 1 for more information on collecting data and measuring these emissions.

Apply emission factors

There are many things to consider when selecting emission factors for your GHG inventory (see table 6). However, common factors are available from the Ministry for the Environment's Measuring Emissions Guide (Ministry for the Environment, 2020), and this should be used wherever possible.

In some instances, more accurate factors may be available. For example, the freight company you use may be able to provide an emission factor (or a customised emissions report) specific to their freight service. This is referred to as 'supplier specific' emission factor. Provided their factor has been verified to an appropriate standard, this would be more accurate than the default freight emission factor from the Measuring Emissions Guide.

If you cannot obtain a suitable emission factor from either the Measuring Emissions Guide or your suppliers, you may want to seek expert assistance in finding and reviewing the appropriateness of other emission factors from other sources. These sources could include other NZ Government data, industry research, Intergovernmental Panel on Climate Change (IPCC) reports or foreign government publications (such as the Australian or UK Government emission factors publications). Regardless, your inventory verifier will need to be satisfied that you have selected an appropriate emission factor that adequately matches the type of activity for each of your emissions sources. You will need to provide your verifier with a reference to the origin of each emission factor you use.

Table 6: How to select suitable emission factors

Considerations for selecting suitable emission factors	
1	Geographic – does the factor relate to the area where the activity is occurring? Eg, grid electricity emissions depend strongly on the generation mix of the country in question.
2	Applicable time period – does the factor relate to when your activity occurred? Eg, grid electricity emissions factors vary year to year.
3	Has the factor been peer reviewed and/or verified? Eg, checked by independent experts.

Considerations for selecting suitable emission factors	
4	Does the factor include the warming effect of all the different gases the activity will generate?
5	Would you be using the factor for the use it was intended for? Does it matter?
6	How old is the factor? Could it have been updated?
7	Are there alternatives? How do they compare in terms of magnitude?

Emission factors are required to report emissions of the three main GHG gases; carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). You also need to calculate and report direct (scope 1/category 1) emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3) and sulphur hexafluoride (SF_6). There are useful workbooks within the Measuring Emissions Guide suite of documents with emission factors that can do the calculations automatically for you.

For direct emissions, only apply tailpipe emission factors. For air travel and air freight, you need to apply the emission factors that include radiative forcing[7] (note the freight factors in the Measuring Emissions Guide includes radiative forcing by default).

Emission factors may vary slightly from year to year and need to be reviewed and updated annually in your GHG inventory. Use the most recent emission factors available that apply to your reporting year. If you have GHG data for previous years containing historic emission factors, you should continue to reference those factors for historic purposes. You could consider drafting a policy for emission factor updates within your organisation to ensure a consistent approach over time and clear thresholds for triggering emission factor review.

Have your inventory verified

Obtain third party assurance of your emissions inventory to ensure you have measured your emissions correctly and this information can be publicly reported and scrutinised. You should seek assurance of your base year for CNGP purposes and every subsequent year.[8]

For the purpose of assurance, your organisation's GHG inventory/statement must be prepared in accordance with ISO 14064-1:2018 and/or the GHG Protocol.

There are several considerations when verifying your emissions including the need for verifiers to be independent, suitable professionals with experience and understanding of ISO 14064-1 and/or the GHG Protocol. Some criteria to consider are contained in the Ministry for the Environment's Measuring Emissions Guide.

7 The CNGP has chosen to follow best practice and be conservative in the case of uncertainty, therefore radiative forcing is to be included in air travel and air freight.

8 An exception for intervening years between base year and the FY21/22 is made where verification of inventories is optional. Further note that the reporting of average emissions totals for intervening emissions inventories (pre- FY21/22) is allowed.

Verification of a GHG emissions inventory must be conducted by an independent third-party organisation or individual. When seeking assurance over your GHG inventory submitted to the CNGP, it is recommended that your chosen verifier holds an accreditation or certification. Examples of accreditation or certification of verifiers include: a professional recognition from the NZICA, a carbon auditor certification from Carbon and Energy Professionals New Zealand, or organisations accredited to ISO 14065 (accreditation for an assurance provider).

Acceptable levels of assurance

Your independent verifier must conduct the assurance engagement in accordance with the Assurance Engagements on Greenhouse Gas Statements (ISAE (NZ) 3410) standard (XRB External Reporting Board, 2012) or the ISO 14064-3:2019 standard (International Organization for Standardization, 2019).

Acceptable levels of assurance include reasonable or limited assurance, but reasonable assurance should be obtained where practicable. Speak to your verifier about the methodology.

Engage with your verifier early

If you have compiled your inventory yourself or used a provider to support you, early in your financial year is the time to think about procuring an independent verifier to assure your emissions inventory. Communicating with them early is highly recommended, as they can give you confirmation on methods, as well as plan and manage the verification process to mitigate an end-of-financial-year 'crunch'.

Collect and input data throughout the year, rather than leaving everything to the end of the financial year. This ensures any issues can be addressed as they arise. If data from the last month/quarter is late due to delays in supplier invoicing etc, the verification process can be started and then fully signed off once the final data is included.

It is highly recommended to organise an assurance/verification provider far in advance to ensure timings are manageable. You can seek early feedback from your assurance/verification provider that your methodology and approach align with the standards and CNGP requirements. See the section on external support for a link to a non-exhaustive suppliers list.

If you report on a calendar year basis

If you are currently reporting your emissions on a calendar year basis rather than aligning with a July-June financial year, the Programme will accommodate CNGP participants to submit a combination of verified and non-verified inventory data to the Programme Lead as long as the data reported in the inventory covers the correct time frame (ie, 1 July – 30 June) and that an assurance report can be provided covering at least six months of the submitted inventory.

7. Developing targets and reduction plans

Once you have completed your base year emissions inventory, the next step is to set gross emissions reduction targets and put in place a reduction plan for your organisation.

Setting your gross emissions reduction targets

Each organisation in the CNGP will need to set their own individual gross emissions reduction targets for their emissions. Your agency must:

- set gross emissions reduction targets for 2025 and 2030 consistent with a 1.5 degree pathway,[9] measured against a base year set by your agency, and based on the reduction potential within your agency. You must measure your progress towards your targets annually
- develop and implement emissions reduction plans to help you reach your gross emissions reduction targets. These plans must be credible, meaning they must be realistic to implement, consistent with your emissions reduction targets and in line with a 1.5 degree pathway.

Further guidance on developing reduction plans and target setting is available together with a target-setting tool to help you set your gross emissions reduction targets consistent with a 1.5 degree pathway.

For those organisations with targets and longer-term reduction plans already in place, keep up the good work. It is recommended you use the tool provided by the Programme Lead to check whether your current targets are in line with a 1.5 degree pathway.

Note that you need to set gross emissions reduction targets, rather than net emissions reduction targets. Removals reported in your inventory must not be included when setting these targets. This avoids the possibility of two agencies accounting for the same removals and ensures real emissions reductions are counted separately to any offsetting.

Start thinking about your reduction plan early

It is a good idea to identify and investigate potential reduction initiatives as you compile your base year inventory. This will also help you be better prepared when you set your targets. As you collect your data for the reporting period you will start to understand the breakdown of your emissions sources. You can initiate discussions with those you will be collecting data from, understand more about your existing operations, and discuss with your colleagues the opportunities or barriers for reductions they see. It is an important time to help others understand what is expected of the organisation, and that reducing emissions will need

[9] A 1.5 degree pathway means setting individual agency targets in line with limiting the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels.

everyone, including senior management, on board and being prepared to support reduction initiatives and raise issues with Ministers as needed.

Remember that developing and implementing reduction plans is an ongoing process. Approach each reduction plan you prepare or review, year-on-year, with best efforts and endeavours, and a culture of evaluation, improvement and transparency. Use support networks and speak with your colleagues in other agencies, use resources already available, and keep checking the CNGP website and communications for more information.

Offsetting

Once you have taken significant steps to reduce your emissions then, by December 2025, subject to further Cabinet decisions, you will need to offset remaining emissions to achieve carbon neutrality. Work on how to achieve this is underway and will inform future guidance. In the meantime, note that best practice is to reduce your organisation's emissions as much as possible first, and this should be your primary focus.

8. Support and resourcing

Support to compile your own inventory

The Ministry for the Environment publishes a Measuring Emissions Guide for organisations of all sizes and levels of expertise. This includes organisations measuring their emissions for the first time and those who have been reporting for multiple years.

The guidance includes an example emissions inventory and emissions inventory report, as well as a spreadsheet you can use as a starting point to produce your own inventory.

External support

If you need external support you can contract an external provider of emissions measurement services. A non-exhaustive list of suppliers is available on the Ministry for the Environment prepared from an open supplier application process to the CNGP. This list is not a pre-qualified list or Government panel. Agencies are expected to procure suppliers based on their own policies and procedures and conduct their own due diligence.

Having someone with technical expertise and knowledge to call on can be helpful, as preparing an inventory can be challenging. You can procure a provider through a standard competitive process.

It is useful to think of measuring and reporting your emissions the same way you think about managing your organisation's finances. Contracting a provider to help is like getting an accountant: they can help you sort out all the technical and complex components and help with the calculations, and an assurance provider can do your verification. Other providers will provide services and support to help you develop and implement reduction strategies.

A number of service providers offer software packages to manage GHG inventories and emissions reporting and assist in ROI calculations for emissions reduction initiatives. CNGP participants may wish to consider the costs and benefits of using these systems, including: data accuracy, ability to import data electronically from suppliers and data bases, ability to automate data collection, ease of verification with all information stored in one place, and the ability to report in multiple ways.

Resourcing

The number of people and the amount of financial resource needed to measure and report an organisation's emissions varies. It will depend on factors like the size of the organisation, the number of sites and the types of operation. While different parts will require different skillsets, it is important to resource this as a whole work programme.

It might also take more time in your first year to compile your inventory. Once systems are set up, this can be done faster in future years. As participants progress, it is expected their focus will shift to emissions reduction initiatives, improving the quality of data and processes for data management and reporting. It is also highly recommended that you establish a good data archiving framework so that institutional knowledge about your inventory can be passed on through any personnel change. This includes documenting assumptions, guidance for internal processes, and so on.

9. Where to go for more information on reducing your emissions

This guide has focused on measuring and reporting your emissions. For guidance on how to reduce your emissions – from boilers, vehicle fleets and buildings, which are the initial focus areas of the CNGP – here are some starting points:

Coal fired boilers and vehicle fleets

EECA provides expert advice, technical support, and facilitates low-emissions energy investments, through co-funding with the State Sector Decarbonisation Fund. This includes replacing fossil-fuelled boilers with low-emissions alternatives such as biomass boilers and heat pumps, including working with the Ministry of Education to replace coal boilers in schools. It also covers fleet optimisation and replacing vehicle fleets with electric vehicles and installing energy-efficient chillers and LED lighting.

For initial queries please contact:
Paul Bull, Manager – Public Sector Portfolio
Paul.Bull@eeca.govt.nz

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DDI +64 4 470 2427
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You can also find a list of EECA tools and services including energy audits, management plans, feasibility studies, and other useful information here: www.eeca.govt.nz/co-funding/energy-and-carbon-reduction/.

Broader information on EECA's work and support it offers the public sector can be found here: www.eeca.govt.nz/our-work/programmes-and-funding/government-leadership/.

For all other enquiries on boilers and fleets, contact your New Zealand Government Property and Procurement (NZGPP) account manager or email procurement@mbie.govt.nz.

Specific to the education sector:

Find information about funding, maintaining and disposing of a school boiler here: www.education.govt.nz/school/property-and-transport/school-facilities/boilers/.

The Sustainability Contestable Fund supports schools to reduce their environmental impact and improve their operational efficiency: www.education.govt.nz/school/funding-and-financials/funding/sustainability-contestable-fund.

NABERSNZ

The National Australasian Built Environment Rating System New Zealand (NABERSNZ) rates the energy efficiency of buildings. New Zealand Government Property and Procurement have provided some useful information and guidance here: www.procurement.govt.nz/property/lease-and-facilities-management/energy-efficient-buildings/.

For enquiries relating to NABERSNZ, contact your Government Property Group (GPG) Property Portfolio Specialist, or email info@gpg.govt.nz.

Building and construction materials and products

The *Procurement guide to reducing carbon emissions in building and construction* is available through the New Zealand Government Procurement website: www.procurement.govt.nz/procurement/specialised-procurement/construction-procurement/construction-procurement-guidelines/.

For enquiries relating to sustainable construction email ConstructionAdvisory@mbie.govt.nz

For all other enquiries, contact your NZGPP account manager or email procurement@mbie.govt.nz.

10. Other avenues for support

All-of-Government Sustainability Group

There is an informal All-of-Government Sustainability network that shares information, best practice, and experiences. If you wish to join, send your query to: cngp@mfe.govt.nz

For all other queries

Please email: cngp@mfe.govt.nz

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Appendix 1: Emissions sources for reporting under the CNGP

Appendix 1 provides a more comprehensive list of likely emissions sources with notes on data collection and typical use by CNGP organisations.

Access Appendix 1 [PDF, 1 MB] on the Ministry for the Environment website.

Appendix 2: Further information on emissions sources

Appendix 2 contains further information on:

- clarification on leasing arrangements
- clarification on international emissions sources
- clarification on biogenic GHG emissions
- emissions associated with sale of generated electricity
- financed emissions (emissions from investments)
- embodied emissions from construction materials and products
- waste audit methodology
- accounting for land use, land use change and forestry
- accounting for agricultural emissions.

Clarification on leasing arrangements

Many public sector agencies lease, operate and exercise control over GHG-emitting sources such as vehicle fleets and office buildings. Leasing arrangements can be complex, and both the lessee or lessor may contribute to total emissions from the leased asset. However, leases can be part of how an agency fulfils its purpose or provides a public service.

A capital lease enables the lessee to operate an asset and gives the lessee all the risks and rewards of owning the asset. If you are a tenant/lessee under a capital lease (eg, you lease an office floor), for CNGP purposes, you have ownership and both operational and financial control of the asset and should therefore include emissions associated with the asset:

1. Fuel emissions under scope 1 emissions
2. Electricity under scope 2 emissions
3. Other relevant sources under your organisation's scope 3 emissions.

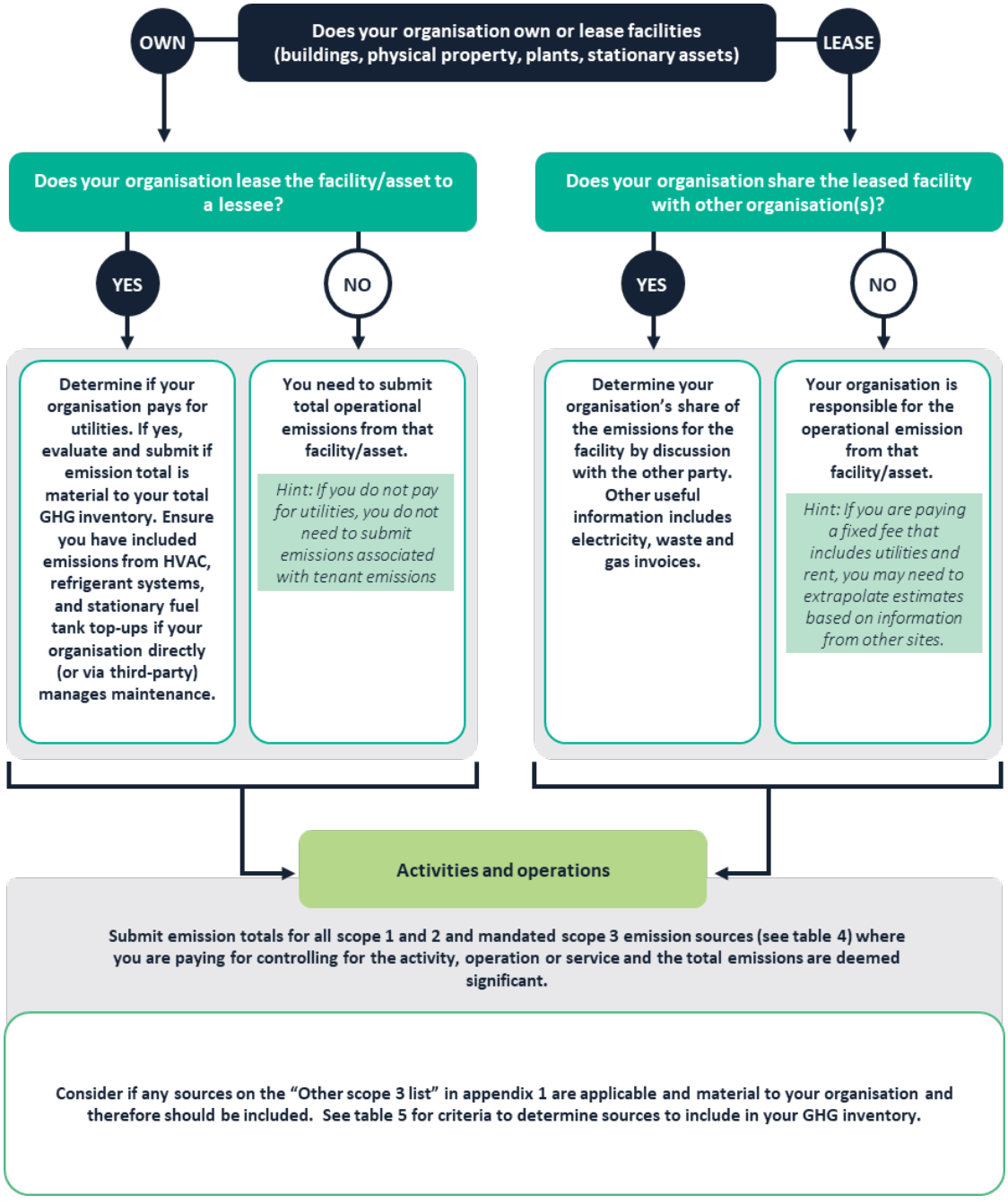
In other words, if you lease a building, a floor of a building, or asset you need to include the associated emission sources if they are material (for definition see CNGP mandatory and material GHG emissions sources; usually electricity, natural gas and waste to landfill). If you lease space from or to another government organisation, it is worth cross-checking to make sure you are using a consistent approach. Talk to contacts at the other agency or agencies to discuss where lines are drawn to ensure activity is apportioned correctly and not missed or double counted. If you need linking with the CNGP contact at another agency, contact cngp@mfe.govt.nz.

Where your organisation is operating an asset under a short-term operational lease (eg, a rental vehicle), your organisation does not obtain any reward or risk associated with owning the asset and is therefore not considered to own or financially control the asset. Therefore, include emissions associated with the leased asset under your scope 3 emissions.

For CNGP purposes, include all significant emissions associated with a capital or operational lease in reporting. If your organisation is the asset owner or landlord of non-government actors, and your organisation holds the contract rather than the tenant/leesee, include your tenant's emissions if deemed significant. See figure 2 for help determining the emissions to include from owned/leased assets, facilities, operations and activities.

There may be instances where you share the use of assets or have joint control of assets. In these cases, you are encouraged to collaborate on the data collection and allocation of emissions. As an example, if you share a facility with another organisation and divide the direct costs (eg, electricity or water bills), decide together your share of the emissions for the facility. If you pay a fixed fee including utilities and rent, you may need to extrapolate estimates based on information from other sites if emissions are deemed significant (more information on how to determine other sources of significance is in table 5). Whatever method you use, document your approach so that it is transparent.

Figure 2: Determination of CNGP reporting requirements of emissions from assets, facilities, operations and activities



Clarification on international emissions sources

For CNGP purposes, international business travel and freight are defined as scope 3 emissions related to:

- travel for overseas placed staff travelling domestically and/or regionally (air travel, taxi, hotel nights) and

- freight domestically and/or regionally between international facilities or for goods purchased from countries outside of New Zealand.

All travel and freight to and from New Zealand must be included in your GHG emissions inventory and submitted to the Programme Lead if deemed significant. Travel and freight not connected to a New Zealand destination must be separately captured in your GHG emissions inventory if material (for definition see CNGP mandatory and material GHG emissions sources).

This is also the same for any scope 1, 2 or 3 GHG emissions associated with international assets eg, sites. Submit this information to the Programme Lead, clearly described and separated from domestic emissions.

The Programme Lead recognises the challenges associated with quantifying international-based GHG emissions. These challenges can include the availability of data, availability of emission factors, complexity of data, national or individual security and/or confidentiality complications. If you have any questions about international-based GHG emissions, please email cngp@mfe.govt.nz and the team will be in touch to address your query.

Clarification on biogenic GHG emissions

If you have significant emissions from combustion of biofuels (bioethanol, biodiesel and wood emission sources), include these in your inventory.

The carbon dioxide (CO_2) emitted from the combustion of biofuels and biomass (including wood) is biogenic, meaning it equates to the carbon dioxide absorbed by the feedstock during its lifespan. This means the CO_2 portion of the combustion emissions of biofuels is treated as carbon neutral. However, the combustion of biofuels generates anthropogenic methane (CH_4) and nitrous oxide (N_2O) which must be included. As per guidance from the Measuring Emissions Guide, calculate the CO_2 emissions in the same way as your (mandatory Scope 1) direct emissions. However, instead of including the CO_2 within the emissions total (where CH_4 and N_2O gases are reported), list them as a separate line item under biogenic emissions for each category/scope.

Note that in many cases, the emissions from biofuel blends can be calculated if the specific percent blend is known. In this case, ensure you multiply the non-biofuel part with the correct emission factor and include emissions under your total (mandatory scope 1 emissions). For the biofuel part, ensure you report emissions as a separate line item under biogenic emissions. Further guidance is available in the Measuring Emissions Guide.

Emissions associated with sale of generated electricity

If your organisation is generating excess electricity and sells this generated electricity to another organisation, you can't deduct the associated emissions from your scope 1 emissions in your inventory. If your organisation generates renewable energy, for its own

use, or for injection into the national grid, you may wish to voluntarily report the associated renewable kWh generated (or non-renewable kWh avoided).

Financed emissions (emissions from investments)

Agencies should measure emissions from their funding/investment portfolios if considered material (for definition see CNGP mandatory and material GHG emissions sources) and as data, information and methodologies become available, in line with the Task Force on Climate-related Financial Disclosures (TCFD)[10] recommendations, until such time as the climate-related disclosure framework has been issued by the External Reporting Board (XRB). From that point agencies should align their disclosures with the XRB's framework.

Embodied emissions from construction materials and products

For construction projects and infrastructure activities the embodied emissions in materials and products are likely to be a significant source of an organisation's scope 3 GHG emissions. If they are a material emissions source[11] for your organisation, include these in your inventory, to the extent possible. Note that retrospective reporting of materials purchased is not required; embodied emissions should be reported for an active project or reporting year.

There is flexibility to report these emissions separately if preferred as it is recognised that construction projects take place as unique projects, or portfolios of projects. As such reporting of carbon emissions may be more appropriate to align closely with construction projects and their reporting timescales, rather than annual corporate organisational reporting. Furthermore, CNGP seeks to align measurement of embodied carbon in construction with best practice methodology which is under development from those in the sector.

In 2020 the Ministry for Business Innovation and Employment launched the Building for Climate Change Programme which included the development of a Whole-of-Life Embodied Carbon Reduction Framework. This proposes that the embodied carbon in buildings is assessed as part of the building consent process, and ultimately will be required to meet a cap. This framework proposes carbon reduction should take place within a whole-of-life building context, and that the assessment of embodied carbon in buildings follows international standards EN 15804 and EN 15978 and the ISO 21930 standard. Policy work to develop the regulatory framework, as well as a methodology to ensure consistency across assessments is underway at MBIE and further details of the implementation of the proposals will be released in due course.

More recently, in 2021 NZ Government Procurement published a Procurement guide to reducing carbon emissions in building and construction. This guide is a first step towards government leading the way in reducing carbon emissions generated by the construction of

[10] The TCFD is the global standard for reporting climate related risks and has a section on metrics and targets which provides specific advice to different types of institution.

[11] For definition see CNGP mandatory and material GHG emissions sources

new government buildings. The guide applies to government agencies mandated under the Government Procurement Rules, and requires the assessment and reporting of GHG emissions resulting from decisions made during the design phase. The guide also requires agencies to develop a 'carbon brief' which sets out the agencies' intent to reduce carbon emissions generated through the project, and setting out the reporting requirements for consultants appointed to carry out the design.

CNGP guidance on reporting embodied emissions reporting may be updated in future to align with policy and market developments including the proposed Whole-of-Life Embodied Carbon Reduction Framework and requirements from NZ Government Procurement.

Waste audit methodology

Tools are available to help you gather some of the data you might need for your inventory. For example, the Ministry for the Environment has a waste audit procedure and measurement template that can be used to estimate your organisation's waste to landfill available on the Ministry for the Environment website. There is also some guidance on implementing recycling systems in multi-tenanted office buildings.

Accounting for land use, land-use change and forestry (LULUCF)

Harvesting forests and deforestation emits GHGs to the atmosphere and vegetation growth removes GHGs from the atmosphere.

Land use, land-use change and forestry for CNGP participants include:

- forest growth
- forest harvest and deforestation.

If your organisation owns forest land within your GHG inventory boundary[12] or owns land that has been deforested during the measurement period, consider if you should include LULUCF emissions in your inventory. The same is true for sequestration due to land-use change (removals by biomass following afforestation or reforestation).[13]

You can use the following guide for more information on the definition of a forest: Measuring forest carbon. The Carbon look-up tables for forestry in the Emissions Trading Scheme includes guidance related to information you will need to determine your forestry stock as well as carbon look-up tables to estimate forest carbon stocks for a given year.

[12] This is only applicable for forestry not under a verified carbon standard or the Emissions Trading Scheme, to avoid any risk of double counting.

[13] Note that emissions sinks (ie, removal of emissions) are not to be included in target-setting since the targets are for gross emissions reductions.

Accounting for agricultural emissions

Agricultural emissions from your owned and managed livestock are reported under direct emissions (scope 1).

Enteric fermentation is the process by which ruminant animals produce methane through digesting feed. Manure management refers to the process of managing the excretion from livestock, particularly when they are not on paddocks. Agricultural soils emit nitrous oxide (N_2O) due to the addition of nitrogen to soils through manure, dung and urine. To calculate estimated emissions from livestock, multiply the number of animals (per head per livestock type) with the appropriate emission factor from the Measuring Emissions Guide.

The Measuring Emissions Guide recommends collecting data on the number and type of livestock at 30 June during the measurement period to calculate emissions from enteric fermentation. This is regardless of whether the measurement period is based on a financial or calendar year.