NABERS

NABERS Carbon Neutral Technical Guidance Document

Version 1.0 – March 2024

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1 Introduction

1.1 General

The National Australian Built Environment Rating System (NABERS) is a performance-based rating system managed by the **National Administrator**.

Data collected for NABERS ratings can be used to support a Climate Active carbon neutral certification via the NABERS Pathway (this document).

This Pathway will supersede the following documents:

a) The *NABERS Minimum Requirements for Climate Active Certification Ruling, v1.0* (June 2022).

b) The minimum NABERS Energy requirements outlined in the following elements of the Department of Industry, Science, Energy and Resources, *Climate Active Carbon Neutral Standard for Buildings*:

1) Section 2.4: REDUCE: Develop and implement an emissions reduction strategy.

2) Box 6: For buildings seeking carbon neutral certification through NABERS Energy or Green Star — Performance.

NABERS currently offers a Climate Active carbon neutral certification Pathway for office buildings (whole buildings and base buildings), shopping centres and hotels.

This guidance document was developed to facilitate the expansion of the certification Pathway to other NABERS-rateable building types.

The proposals in this paper have been developed by the NABERS **National Administrator** in consultation with Climate Active (CA) and Green Building Council of Australia (GBCA).

This guidance document should be read in conjunction with *NABERS Metering and Consumption Rules*, v*2.1* (June 2023).

1.2 Interpretation of the Pathway

This Pathway is to be read in conjunction with the respective NABERS **Rules** as they apply to the specific building type.

Where a conflict between this Pathway and existing **Rules** is present, the requirements of the **Rules** or **Ruling** take precedence over this guidance document for the purpose of a Climate Active carbon neutral certification.

This Pathway applies to any building eligible for Climate Active carbon neutral certification using the NABERS Pathway.

1.3 How to use this document

This document provides guidance on obtaining carbon neutral certification using NABERS' **minimum energy efficiency requirements**. The term "**Ruling**" refers to a body of works produced by NABERS that specify what must be examined, tested and documented when an Assessor conducts a rating. Wherever the term "**Ruling**" is used in this document from Chapter 3 onwards, it refers to the document, *NABERS Ruling — Minimum Requirements for Climate Active Certification* (Version 1.0 - June 2022). Other **Rules** documents mentioned in the text are distinguished from the present document by the inclusion of their title.

Text appearing **dark green** and **bold** is a defined term. Defined terms can be found in Chapter 2 of this guidance document or in the terms and definitions chapter of the respective **Rules** documents.

The following formatting conventions may appear in this text:

⚠ Important requirements and/or instructions are highlighted by an information callout box.

Note: Text appearing with a grey background is explanatory text only and is not to be read as part of the guidance Pathway.

Example: Text appearing with a green background is intended to demonstrate a worked example of the respective guidance section.

This is a documentation requirement callout box.

1.4 Related documents

The following documents have been referenced within this guidance document:

Climate Active Carbon Neutral Standard for Buildings October 2022

Climate Active Electricity Accounting paper August 2023

Energy for Data Centres (Version 1.1 July 2014)

Energy and Water for Offices (Version 5.1 — June 2023)

Energy for warehouses and cold stores (Version 1.0 — August 2022)

Energy and Water for Hotels (Version 4.0 — October 2022)

Energy and Water for Shopping Centres (Version 4.1 – February 2022)

Metering and Consumption (Version 2.2 - January 2024)

NABERS Waste Rules (Version 2.0 June 2024)

NABERS Waste Data Verification Ruling (Version 2.0 September 2022)

Thermal Energy System Rules (Version 1.0 August 2021)

Waste for Offices (Version 1.0 — January 2024)

Note: The versions mentioned throughout this document are up to date as of March 2024. Please refer to the latest **Rules** version at your time of view.

2 Terms and definitions

This chapter lists the key terms and their definitions that are integral to the proper use of this document.

Term	Definition
Acceptable data	Data which meets the applicable accuracy and validity requirements of the Rules.
Assessor(s)	An accredited person authorised by the National Administrator to conduct NABERS ratings.
Carbon Neutral Electricity	The emissions associated with this electricity are deducted from the business's gross offset liability as they have been fully compensated for through the purchase of carbon offset units.
Global Warming Potentials (GWPs)	Values that allow direct comparison of the impact of different greenhouse gases in the atmosphere by comparing how much energy one tonne of a gas will absorb compared to one tonne of carbon dioxide.
GreenPower®	The GreenPower® program aims to decrease greenhouse gas emissions associated with electricity generation and to facilitate the installation of new renewable energy generators across Australia. Therefore, the purchase of GreenPower® from energy providers accredited under the National GreenPower® Accreditation Program (known as a "GreenPower® Accredited Generator"), is considered to be the purchase of a zero-greenhouse emission energy source.
Large-scale Generation Certificates (LGCs)	A certificate of renewable energy generated by a renewable energy generator registered with the Clean Energy Regulator.
Minimum energy efficiency requirement	A minimum NABERS Energy rating needed to be eligible for Climate Active carbon neutral certification using the NABERS Pathway.
National Administrator	The body responsible for administering NABERS, in particular the following: a) Establishing and maintaining the standards and procedures to be followed in all aspects of the operation of the system. b) Determining issues that arise during the operation of the system and the making of ratings. c) Accrediting Assessors and awarding accredited ratings in accordance with NABERS standards and procedures. The functions of the National Administrator are

Term	Definition
	undertaken by the NSW Government through the Department of Planning and Environment.
On-site Renewable Electricity Generation (OREG) System(s)	A system installed on the rated premises that generates renewable electricity.
Public Disclosure Statement	A report published on the Climate Active website, communicating progress on emissions reductions activities and offsetting as part of a carbon neutral claim.
Rating period	The 12-month base period for the rating, requiring at least 12-months of acceptable data upon which the rating is based.
Renewable electricity	Electricity that is derived from sources that are regenerated, replenished or, for all practical purposes, cannot be depleted. For NABERS purposes, these sources are wind and solar.
Renewable Energy Target (RET)	The amount of electricity generated from renewable sources as a part of the Commonwealth Government's scheme. The RET contribution to the grid varies from State to State.
Renewable Power Percentage (RPP)	Liable entities (generally electricity retailers) are required to surrender large-sale generation certificates (LGCs) to meet their Large-scale Renewable Energy Target (LRET) obligations each year. If this requirement is not met, entities must pay a non-tax-deductible shortfall charge.
Rules	Authoritative document produced by the National Administrator that specifies what must be covered by an Assessor in order to produce a rating.
Ruling(s)	An authoritative decision by the National Administrator which acts as an addition or amendment to the Rules.
Utility	An organisation or company that holds a licence to retail electricity, gas or water, and that sells energy or water as its primary business.
Validity period	The post-certification period during which the rating is valid for up to 12 months.

3 NABERS Pathway process and updates

3.1 Offsets paper

NABERS references the Property Council of Australia offsets guide, as best practice for offset purchasing.

The carbon offsets framework outlines four key components as listed below, to ensure environmental integrity of an offset program that delivers reliable and durable emission removal, mitigates the risk of greenwash challenges and avoids reputational damage:

1) Demonstrate the role of offsets in a science-aligned net zero plan.
2) Document the offset strategy.
3) Show how a program of due diligence ensures offsets meet the quality criteria in the offset strategy.
4) Maintain a Natural Capital Balance sheet – a register of offsets maintained over time recording the results of ongoing stewardship checks and measurements of stored carbon.

Further details about this can be found via Property Council of Australia: Carbon offsets paper.

3.2 Timeline

3.2.1 General

NABERS is proposing to re-introduce a timeline for CN certifications. The table below outlines the expected timeline NABERS administrator and CN assessors must adhere to upon implementation.

Energy rating lodgement date	Today
Energy rating certification	10 days
CN L1 audit	5 days
Offsets are purchased	20 days
Certify rating for carbon neutrality	5 days

Once the NABERS energy rating is lodged, assessors should provide the completed carbon neutral calculator within 20 business days from the date of lodgement of NABERS energy. It is important that the NABERS administrator shall be able to complete the L1 audit with the documentation provided by the **Assessor** in the first instance. Incomplete or inadequate information submitted by the **Assessor** will count towards the delay in Carbon Neutral certification.

NABERS will make a request from the assessor to provide Carbon Neutral documentation if no information is provided in the first instance or if no extension of time has been previously granted to the assessor. In cases where the **National Administrator** considers that if some information is still incomplete after the first request and no extension of time has been granted, the **Assessor** will be asked again second time to provide complete information.

3.2.2 Application for an extension

If a NABERS **Assessor** is unable to meet the timeframes above, they must notify the **National Administrator** as soon as possible to arrange a time extension.

Applications for an extension must be made at least five business days in advance of the deadline, and should be sent to nabers@environment.nsw.gov.au and detail the:

a) address of premises, NABERS rating number;

b) information that cannot be supplied in the required timeframe;

c) reason for the delay;

d) proposed date by which the information can be supplied.

The **National Administrator** reserves the right to deny a time extension request.

4 Minimum energy efficiency requirements

4.1 Climate – General

In accordance with the *Climate Active Carbon Neutral Standard for Buildings*, buildings obtaining carbon neutral certification using NABERS must meet a **minimum energy efficiency requirement**. This is to ensure that energy efficiency is used as the primary strategy for reduction of emissions, in accordance with the *Climate Active Carbon Neutral Standard for Buildings*.

4.2 Minimum energy requirements

4.2.1 Minimum NABERS Energy rating requirement

To obtain Climate Active carbon neutral certification using the NABERS Pathway, a building must achieve a minimum NABERS Energy (without GreenPower™) rating as follows:

a) *Offices and shopping centres*: minimum 4-star NABERS Energy rating.

b) *All other building types*: minimum 3-star NABERS Energy rating.

4.2.2 Commitment to achieve minimum NABERS star rating requirement

Where the minimum NABERS Energy rating requirements outlined in Section 4.2.1 cannot be met, a commitment to achieve the requirements can be made to the NABERS **National Administrator** at the time of submitting the carbon neutral certification. This will allow buildings working towards their rating requirement to achieve carbon neutral certification.

The **minimum energy efficiency requirement** must be achieved within three (3) years from the start of the carbon neutral certification.

Note: The commitment to achieve the specified requirements cannot be extended.

If the commitment is not met at the end of the three (3) years, the carbon neutral status of the building will no longer be certified.

4.2.3 When the minimum requirement is not achieved, and a commitment cannot be made

Where the minimum NABERS Energy rating is not achieved, and a commitment cannot be made, the alternative is to disclose the following information in the **Public Disclosure Statement**:

a) Why the minimum NABERS Energy rating cannot be achieved.

b) Why a commitment cannot be made to achieve the rating within three (3) years.

c) What the building's emissions reduction strategy is in accordance with Section 2.4 of the *Climate Active Carbon Neutral Standard for Buildings*.

In addition, **renewable electricity** must be purchased to bring the carbon emissions intensity (kgCO2e/sqm) of the rated energy to the equivalent of the minimum NABERS Energy rating requirement. Various units of measurement are used, depending on the building type being rated. For example, KgCO2/m2 for offices and shopping centres, WaCS and KgCO2/room for hotels, and KgCO2 for data centres. The required **renewable electricity** purchase can be calculated using the NABERS "Estimate your rating" calculator.

⚠ **Assessors** must seek approval from the NABERS **National Administrator** to use this method prior to lodging the rating. The **Assessor** must justify why the minimum star rating could not be achieved.

Example: An office building has a 3-star NABERS Energy rating and cannot commit to obtaining the minimum energy rating requirements (i.e. 4-star) in the next three (3) years.

In addition to the information that needs to be included in the **Public Disclosure Statement**, the building owner must purchase **renewable electricity** to bring the carbon emissions intensity of the building to the equivalent of a 4-star rated building. The **Assessor** must calculate how much **renewable electricity** needs to be purchased.

The building details and energy consumption are as follows:

Rating type	Office base building
Postcode	2000
Hours	50
Area (m^2)	2,400
Electricity (kWh)	340,000
Gas (MJ)	300,000
Diesel (L)	150

The **Assessor** uses the NABERS "Estimate your rating" tool to determine how much the current electricity consumption must be decreased by for the building to reach 4 stars. This is achieved by gradually reducing the electricity value in the calculator until the building reaches 4 stars.

This example shows that for the building to obtain a 4-star rating it must consume 260,000 kWh of electricity instead of the current 340,000 kWh. Therefore, the building owner needs to match 80,000 kWh of consumption with **renewable electricity** .

4.2.4 Climate Active carbon neutral certification for a building that wouldn't usually obtain a NABERS rating

There may be buildings that are unable to obtain a NABERS rating but may still wish to obtain Climate Active carbon neutral certification.

Please contact the **National Administrator** if a building is in a sector where NABERS ratings are available, but one of the following situations occurs:

a) The building is deemed as unrateable by NABERS and/or the Commercial Building Disclosure Program (www.cbd.gov.au).

b) The building wouldn't normally obtain a NABERS rating.

In a limited number of situations there may be an alternative pathway available to obtaining Carbon Neutral certification.

5 Waste carbon neutral guidance

5.1 How emissions from waste are assessed

Waste emissions are captured under Scope 3 emissions and must be considered in any building's claim of carbon neutrality.

For claims made via the NABERS Pathway it is preferable (but not mandatory) that the waste emissions data is sourced from a NABERS Waste rating (for NABERS Waste rateable buildings) or in accordance with the NABERS Waste Data Verification Ruling (for non-NABERS Waste-rateable buildings). Irrespective of the above, the Assessor must be familiar with the NABERS Waste Rules and apply them in the waste emissions assessment wherever it is practical to do so within the limitations of the available evidence.

This document provides guidance on what evidence is expected to verify waste emissions data, particularly for claims not based on formal NABERS Waste ratings or NABERS Waste Data Verification. The guidance document provided here should be read in conjunction with the *NABERS Waste Rules (Version 2.0 June 2023)* and the *NABERS Waste Data Verification Ruling (Version 2.0 September 2022)*.

5.2 NABERS proposed changes

5.2.1 Waste types

Data must be captured for the same waste types as those required for the building type and rating scope, as per the NABERS Waste Rules. The intent of this is to:

a) capture emissions from solid waste disposed to landfill; and

b) from waste streams within the operational control of the entity making the carbon neutral claim; and

c) where the waste is due to the day-to-day operations of the building.

Contamination in waste streams not intended for landfill must also be accounted for by a site visit or an equivalent method outlined in the NABERS Waste Rules.

Note: General Waste and Mixed-Recycling streams are mandatory inclusions for a CN rating via the NABERS Pathway regardless of rating type (base or whole building) and operational control.

5.2.2 Waste collection and data requirements

NABERS appreciates that waste collection data quality will vary from building to building. Whilst the industry transitions to better data quality in waste collection, NABERS encourages take-up of best-practice waste collection data for carbon neutral claims, without necessarily prohibiting claims for buildings that have a NABERS Waste data quality assessment that is deemed "poor".

5.2.3 Determination and declaration of waste data quality

The declaration of waste data quality aims to uplift the waste data received for any CN certification via the NABERS Pathway. Assessors are encouraged to understand the different waste data categories to promote the use of better data for CN ratings. This also incentivises buildings championing NABERS Waste ratings to obtain a CN rating more conveniently.

The NABERS Waste Rules defines four tiers of data quality for waste collection data including "basic", "acceptable", "good" and "excellent". For carbon neutral claims via the NABERS Pathway, assessors are required to refer to the NABERS Waste Rules and declare in which tier the waste data quality would be categorised in the NABERS Carbon Offset Calculator Spreadsheet. The NABERS Waste Basics free course provides a comprehensive summary for determining the waste data quality. It is mandatory for assessors to complete this training. If the data quality doesn't meet the criteria of "basic", assessors must declare the waste quality as "poor" by default.

Assessors are required to maintain evidence to support any declaration of waste data quality. In order to be declared as "good" or "excellent", the additional requirement applies that the waste data must be compiled on the NABERS Waste Manager platform.

A fifth data quality tier is provided in relation to carbon neutral claims via the NABERS Pathway to account for waste collection data that would not satisfy the requirements of the NABERS Waste Rules. For such data, the waste collection data quality tier must be deemed "poor" as per NABERS Waste data quality assessment.

The data quality declaration will appear on the building's NABERS issued **Public Disclosure Statement (PDS)**.

5.2.4 Waste collection data that does not satisfy NABERS Waste requirements

5.2.4.1 General

Poor quality of waste collection data is not intended to be a barrier to a building's ability to make a carbon neutral claim via the NABERS Pathway. However, in lieu of waste collection data that would at least meet the "basic" tier of NABERS Waste requirements, waste emissions must still be quantified by other means, such as those noted below.

5.2.4.2 Sites lacking individual bin collection records

A common hurdle preventing a building's waste collection data from NABERS compliance is the absence of individual bin collection records. In lieu of this data, the following alternative methods may be employed to assess annual waste volumes, in order of preference:

a) **Aggregated collection data** would be expected to be in the format of number of collections per bin per period. The period would be expected to be, at most, monthly.

b) **Contract waste collection data** would be expected to be in the form of contracted number of collections per bin per period, which may be monthly, quarterly or annual.

Manually estimated calculations may be performed by the **Assessor** assuming a daily pick up for each bin service (365 pick-ups per year).

In each of the above instances, the waste collection data quality would be declared as “poor”.

5.2.4.3 Sites lacking building-specific waste collection data

Another common hurdle preventing a building’s waste collection data from NABERS compliance is the absence of building-specific collection records, such as in the case where the waste management service is shared with adjacent buildings. In these instances, waste collection data specific to the building making the carbon neutral claim may be determined via apportionment in accordance with the principles of the latest *NABERS Shared Services and Facilities Ruling (Version 1.0 – March 2022)*, via either financial reconciliation or area-based allocation.

Apportionments inherently make the data an estimation. Therefore, where the apportionment results in less than 80% of the total waste emissions (kgCO2-e) associated with the waste collection service being assigned to the building making the carbon neutral claim, the waste collection data quality for the claim must be declared as “poor”.

5.2.5 Period of data collection for waste emissions

A full 12 months of waste emissions data is required for the claim. The Climate Active Carbon Neutral for Buildings Standard defines the 12-month period for which emissions data is collected as the base year. For claims made via the NABERS Pathway, the base year is set according to the **Rating Period** of the NABERS Energy rating at the core of the claim. **Assessors** must prioritise collecting waste emissions data for that same base year. However, up to two months misalignment between the base year and the waste data collection period is acceptable where such data is not available.

5.2.6 Site visit requirements for waste collection data evidence

Assessors are expected to conduct a site visit that would satisfy the requirements of a NABERS Waste rating for the site.

5.2.7 Waste boundary for carbon neutral assessments

Assessors should be mindful of the emissions boundary when assessing waste data for a carbon neutral claim. Specifically noting that the emissions boundary of the carbon neutral claim is the building in its entirety, not just the NABERS-rated component of the building. Therefore, for example, any waste generated from the retail section of an office building will also need to be considered in the carbon account.

For base building carbon neutral claim (that is, for base building office, shopping centres or data centres infrastructure sites), general waste and mixed recycling waste streams in a building, irrespective of the operational control, falls under the emissions boundary.

Further guidance on how to assess the emissions boundary in base building carbon neutral claims is provided in Section 7.2.

5.2.8 Scaled penalties for waste emissions

Waste emissions are to be scaled based on waste data quality:

a) Waste data quality “excellent” => 100% x calculated emissions.

b) Waste data quality “good” => 110% x calculated emissions.

c) Waste data quality “acceptable” => 125% x calculated emissions.

d) Waste data quality “basic” => 135% x calculated emissions.

e) Waste data quality “poor” => 150% x calculated emissions.

Some buildings do not have the resources or capital to capture waste data at all. To overcome this, we propose:

1) NABERS will give building owners one year to start capturing waste data.
2) Building owners may implement the minimum waste standard for CN lodgements (that is, have waste pick-ups captured daily instead of monthly or yearly figures).

The scaled emissions proposed above will not be applied to the total waste emissions until 1 July 2025. Any CN lodgements after 1 July 2025 will have the scaled emissions applied to their total waste emissions. This is to provide **Assessors** and building owners the time required to improve on their waste data quality. In the meantime, these scaled emissions will be showcased in the CN Offset Calculator, for assessors and building owners to understand the impact of the scaled emissions penalty applied.

6 Refrigerants carbon neutral guidance

6.1 How emissions from refrigerants are assessed

Refrigerant emissions are captured under Scope 1 and must be quantified for a carbon neutral claim via the NABERS Pathway.

As per AIRAH's Best Practice Guidelines "Methods of calculating Total Equivalent Warming Impact (TEWI) 2012", instances of refrigerant emissions generally occur as either:

a) gradual leaks during normal operation;

b) catastrophic losses during normal operation;

c) losses during plant service and maintenance;

d) losses at end of plant life.

6.2 Accounting for refrigerant-derived emissions

6.2.1 General

In the context of capturing refrigerant emissions due to leakages, two accounting methods are recognised under the NABERS Pathway for a carbon neutral certification. At present, direct and accurate measurement of refrigerant emissions from air-conditioning and/or refrigeration equipment is not commonly practised within the built environment, and the technological means by which to do so is not widely available. Hence assessors are allowed to estimate refrigerant emissions based on the two methods outlined below.

6.2.2 Method 1: Estimation based on a default average annual leakage rate

A default annual leakage rate is applied to represent the average aggregated impact of leaks during normal operation and major losses during servicing and failure events over the course of an item’s operating life.

The default annual leakage rates that should be applied are those identified in the National Greenhouse and Energy Reporting (Measurement) Determination 2008. System categories and default leakage rates as per the NGER Determination are provided in the table below. To help **Assessors** identify which rate should apply to which equipment, we have added category definitions and examples as noted in AIRAH's Best Practice Guidelines "Methods of calculating Total Equivalent Warming Impact (TEWI) 2012”.

For equipment that does not fit into any of these categories, default leakage rates may be set based on evidence gathered from other credible sources. Table 6.2.2 states default leakage rates. Other credible sources could include, for example, the Commonwealth’s National Greenhouse Accounts Factors reports, the Commonwealth’s Cold Hard Facts reports or AIRAH’s Best Practice Guidelines "Methods of calculating Total Equivalent Warming Impact (TEWI) 2012”.

Table 6.2.2: Default leakage rates

System	Default leakage rate	Example / Definition
Commercial air-conditioning	9%	Any built-up or stand-alone heating or cooling system, including split systems, packaged air-conditioning systems, heat pumps and chillers, etc.
Commercial refrigeration	23%	Built-up refrigeration systems with remote condensers such as for example, supermarket racks and walk-in cool rooms.
Industrial refrigeration	16%	Built-up refrigeration systems serving cold storage facilities or process refrigeration systems.
Domestic Refrigeration	1.7%	For example, mini fridges in hotel rooms.

6.2.3 Method 2: Approximation based on records of top-ups

Emissions lost to the atmosphere over a 12-month period are approximated as the quantity of refrigerant that is topped-up into equipment during that 12-month period. When applying Method 2, it is important to consistently apply this method over time (that is, in carbon neutral claims for following years) to ensure that emissions from the equipment's full lifecycle are properly accounted for.

It is essential to the accuracy of Method 2 that records are maintained whenever refrigerant gas is topped-up to equipment on site. Evidence that can be used for Method 2 includes:

a) A Refrigerant Gas Equipment Maintenance Register completed for the 12-month base year (see below).

b) Job records/invoices for services of equipment where refrigerant was added to the system.

c) Statements from maintenance contractors to verify how much refrigerant was added to a system.

Effective from 1 July 2025 all three criteria (a,b,c) must be met. Until then, **Assessors** can use b) and c) to claim refrigerant emissions via Method 2.

In case you do not find any evidence related to top-ups made on site after the 12-month period, you can continue using Method 2 for reporting refrigerant emissions rather than going back to default leakage rates (Method 1).

Note: Method 1 or 2 can be applied across the refrigerant equipment register, subjective to the independency of the equipment against one another. Section "NABERS additional aspect for accounting of refrigerant emissions" must be followed for the case where both methods are used for determining refrigerant leakage.

6.3 Refrigerant Gas Equipment Maintenance Register

Building managers are to maintain a Refrigerant Gas Equipment Maintenance Register that is updated with each monthly/quarterly/annual service with information relating to the status of refrigerant charge for each item of equipment. NABERS further advise that the asset register should be included for each item:

a) Equipment identifier.

b) Equipment type.

c) Refrigerant type.

d) Heating/cooling capacity (kWr).

e) Refrigerant charge (kg).

f) Service notes for each service to confirm:

1) Is the equipment demonstrating symptoms of less-than-design refrigerant charge?

2) Was the refrigerant charge tested during this service?

3) Was a refrigerant leak detection undertaken during this service?

4) Was refrigerant added to the system during this service and if so, how much (in kg)?

Note: Refrigerant charge and leak detection tests are not expected to be undertaken with each service, however maintaining records of these activities when they do occur will help to ensure the accuracy of the refrigerant emissions account.

NABERS' intent is that tracking of refrigerant top-ups should not be an afterthought that is only considered at the time of the carbon neutral assessment. The building management team and their contractors should actively monitor refrigerant top-ups on a regular basis. Keeping an up-to-date Refrigerant Gas Equipment Maintenance Register will help them to do so.

6.4 Statements from maintenance contractors

NABERS will request a signed statement from a maintenance contractor to confirm how much refrigerant was added to a system over a given time period, these statements can be monthly/quarterly/annual, and this is acceptable as evidence under Method 2 (either instead of, or complementary to, the Refrigerant Gas Equipment Maintenance Register). The statement should include:

a) Contractor's business name.

b) Name of the contractor's representative.

c) Contractor's Refrigerant Trading Authorisation number.

d) Acknowledgement of the time period that the statement pertains to.

e) Confirmation that the contractor had an active maintenance contract for the equipment throughout that time period.

f) Identification of each item of refrigerant gas equipment that was included under the maintenance contract.

g) Confirmation of how much refrigerant (in kg) was added to each individual system over the time period.

The time period should be no longer than 16 months.

Note: If no maintenance contract was in place for a particular item of equipment over the 12-month reporting period then a statement is not considered acceptable evidence for that item of equipment, and a default leakage rate (Method 1) should be applied.

6.5 NABERS' additional aspect for accounting for refrigerant emissions

6.5.1 Refrigerant emissions accounting methods over multiple years

NABERS acknowledges that there is a risk of under-reporting refrigerant emissions in the scenario where zero top-ups are assigned under Method 2 for one or more years, followed by application of Method 1 in a year where significant loss of refrigerant may have occurred.

For this reason, NABERS proposes that **Assessors** are expected to apply Method 2 for any site where Method 2 has already been applied in previous carbon neutral assessments. Where this is not possible, **Assessors** are expected to document evidence justifying the change in methodology and describing how the risk of under-reporting of refrigerant emissions has been addressed.

Where a catastrophic loss of refrigerant gas appears to have occurred but has not been accounted for due to a lack of documentation, **Assessors** can (and should) continue to apply Method 2 but assume that 100% of the refrigerant charge has been added as a top-up during the reporting period and enter that into the carbon account accordingly.

Assessors are required to acknowledge the refrigerant accounting methods that were applied in previous carbon neutral assessments in the NABERS Carbon Offset Calculator spreadsheet as well as the refrigerant emissions from each year's claim. If zero refrigerant emissions are claimed over more than three consecutive years, assessors are encouraged to follow up with their client to investigate the integrity of information that they have been given.

6.5.2 Refrigerant gases that must be considered

All refrigerant gases with a **Global Warming Potential (GWP)** greater than zero must be included in the carbon account (including those with very low GWP).

6.5.3 Materiality with respect to refrigerant gas emissions

The materiality threshold as defined by the Climate Active Carbon Neutral Standard for Buildings may be applied when determining whether to quantify emissions from a particular item of refrigerant gas equipment for the carbon account.

When applying the materiality threshold for refrigerant gas equipment, potential emissions should be evaluated under Method 1. If, when considered under Method 1, the emissions would constitute one percent or more of the claim's carbon account, then the emissions must be considered material (irrespective of which method is ultimately used to quantify the emissions).

In cases where individual items of refrigerant gas equipment are part of a broader system or service that contains many similar items of that same equipment, the materiality threshold should be considered against the aggregated emissions for all individual items that make up that system or service. For example:

a) A single split system AC unit serving the main switch room would be evaluated for materiality on its own, as an individual unit.
b) For an office building where split system AC units were the main base building air-conditioning system, the array of individual split systems would be evaluated for materiality all together, as an aggregated system.
c) A single domestic fridge in the building manager's office would be evaluated for materiality on its own, as an individual unit.
d) Bar fridges in each room of a hotel would be evaluated for materiality all together, as an aggregated service of the hotel.

Note: Refrigerant emissions sources that are not quantified because they have been deemed immaterial should be declared on the "Other emissions" tab of the NABERS Carbon Offset Calculator spreadsheet.

7 Mixed-use buildings carbon neutral guidance

7.1 How emissions from mixed-use buildings are assessed

7.1.1 General

One of NABERS' key objectives in producing this guidance document, is to help assessors navigate decisions for mixed-use buildings and thus help to ensure consistency and transparency across different carbon neutral claims.

For mixed-use buildings, emissions from other parts of the building may also be relevant to the carbon neutral claim. Their relevance shall be determined in accordance with the principles outlined in the Climate Active Carbon Neutral Standard for Buildings. Items (1) and (2) of Section 2.1 of the Standard address emissions deemed to be relevant for whole building and base building claims, respectively. Section 2.3.1 of the Standard also directs **Assessors** to consider:

a) Geographic boundary.

b) Building operations.

c) Relevance.

Key points that NABERS **Assessors** should take away from the Standard in this respect are:

1) Similar to the scope of NABERS ratings, whole building carbon neutral claims account for the emissions of the whole building, including emissions as a result of both the building owner's services and tenant operations. Base building carbon neutral claims relate only to the building's core services (air-conditioning, common area and external lighting, hot water, lifts, car parking or similar).

2) Dissimilar to the scope of NABERS ratings, the geographic boundary of the asset must be determined as the building in its entirety. A building with multiple uses, such as an office with hotel and retail spaces, must be considered as one entity. Tenanted parts of the building must also be included in the geographic boundary.

3) When assessing the emissions boundary between building owner and tenant emissions for a base building carbon neutral claim, the **Assessor** must consider the criteria of operational control. Scope 1 and Scope 2 emissions sources outside the operational control of the building owner or manager are deemed as not relevant for a base building carbon neutral claim. Scope 3 emissions sources must be assessed for relevance in accordance with the relevance test.

7.1.2 Energy-related emissions boundary

Energy and water exclusions that are made from a building's NABERS rating may need to be added back into the building's carbon account for the building's carbon neutral claim. For example, manufacturing process operations are an allowable energy exclusion from a NABERS rating for a warehouse, however, that energy must still be included in the building's carbon neutral claim. In this case, the manufacturing process emissions are deemed relevant to the carbon neutral claim because they relate to the operation of the building and the claim is for whole building operations.

Similarly, in the case of a Data Centre (Infrastructure) carbon neutral claim, any of the building owner's energy consumption excluded from the NABERS Energy rating for support areas within the geographic boundary of the data centre (such as offices, exterior lighting and car parks), would also need to be added back into the carbon account.

Table 7.1.2 presents sectors in which NABERS offers a carbon neutral certification pathway and whether carbon neutral claims for the sector should be considered "whole building" or "base building" under the Climate Active Carbon Neutral Standard for Buildings. Section 5.2 provides further guidance on how to determine relevance for emissions in base building carbon neutral claims.

Table 7.1.2: Example declaration of excluded emissions for a base building office carbon neutral claim

Sector	Scope of the carbon neutral claim (as per Section 2.1 of the Climate Active Carbon Neutral Standard for Buildings)
Office (base building)	Base building operations
Office (whole building)	Whole building operations
Shopping Centres	Base building operations
Hotels	Whole building operations
Warehouses and Cold Stores	Whole building operations
Data Centres (Infrastructure)	Base building operations

7.2 NABERS' advice on emissions deemed to be relevant

The following advice is aimed at helping assessors determine relevance for emissions that are within the geographic boundary of the building, but outside the scope of the NABERS rating, particularly in the context of a base building carbon neutral claim.

Scenario 1: Centralised heating, ventilation, and air-conditioning

Centralised HVAC services are generally considered to be under the operational control of the base building, on the basis that the building owner is responsible for key decisions and operations that impact the emissions resulting from the system's operation, such as equipment selection, plant control strategies, maintenance practices and lifecycle works.

Thus, centralised HVAC services provided to tenants outside of the NABERS-rated component of the building (e.g. like retail spaces, but within the geographic boundary of the building) are generally deemed to be relevant to the base building carbon neutral claim.

There may be instances where both the base building and the tenant each have a degree of operational control over centralised HVAC services. As a default position, centralised HVAC services should be deemed relevant to the base building carbon neutral claim and can only be excluded from the emissions boundary if the following conditions are true:

a) There is metering infrastructure in place and metering data available such that the emissions associated with the HVAC service specific to a respective tenant could be measured and assigned to the tenant for their own individual claim of carbon neutrality; and
b) The tenant can be shown to have a reasonable degree of operational control over the service, citing evidence of one or more of the following:
    1) The tenant being responsible for design and selection of the HVAC equipment.
    2) The tenant having direct access to control systems for the HVAC system, being able to set time schedules, set points and/or other key operating parameters.
    3) The tenant being responsible for engaging maintenance of the HVAC equipment.
    4) The tenant being billed for metered consumption of electrical and/or thermal energy consumption of the HVAC system.
    5) Lease conditions or other agreements stipulating requirements for operation of the plant that are particular and specific to that tenancy (e.g. 24/7 operation).
    6) Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the HVAC services to their tenancy.

Scenario 2: Stand-alone heating, ventilation, and air-conditioning

Dedicated stand-alone HVAC equipment may be deemed as relevant to either the base building or the tenant (but never to both). Similar to the case with centralised HVAC, the determination of the emissions boundary should depend upon consideration of which party has the greatest degree of operational control over the emissions that result from the equipment's operation.

As per the treatment of centralised HVAC, stand-alone HVAC equipment can only be excluded from the emissions boundary of a base building carbon neutral claim if the following conditions are true:

a) There is metering infrastructure in place and metering data available such that the emissions associated with the HVAC service specific to a respective tenant could be measured and assigned to the tenant for their own individual claim of carbon neutrality; and
b) The tenant can be shown to have a reasonable degree of operational control over the service, citing evidence of one or more of the following:
    1) The tenant being responsible for design and selection of the HVAC equipment.
    2) The tenant having direct access to control systems for the HVAC system, being able to set time schedules, set points and/or other key operating parameters.
    3) The tenant being responsible for engaging maintenance of the HVAC equipment.
    4) The tenant being billed for metered consumption of electrical and/or thermal energy consumption of the HVAC system.
    5) Lease conditions or other agreements stipulating requirements for operation of the plant that are particular and specific to that tenancy.
    6) Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the HVAC services to their tenancy.

Scenario 3: Other services and facilities in mixed-use buildings

The same principles as described for HVAC systems can also be applied to other services to determine whether they should be deemed relevant to a base building carbon neutral claim.

Services or facilities that are specific to a particular tenant can be assessed against the criteria of operational control, and can be excluded from the emissions boundary of a base building carbon neutral claim if the following conditions are true:

a) The emissions associated with the service or facility specific to a respective tenant could be measured and actual data allocated to that tenant for their own individual claim of carbon neutrality; and
b) The tenant can be shown to have a reasonable degree of operational control over the service or facility, citing evidence of one or more of the following:
    1) The tenant being responsible for design and selection of hardware associated with the service/facility.
    2) The tenant having direct access to control of equipment associated with the service/facility.
    3) The tenant being responsible for engaging maintenance and/or services for the service/facility.
    4) The tenant being billed for metered energy, water or other consumables associated with the service/facility.
    5) Lease conditions or other agreements stipulating requirements for the service/facility that are particular and specific to that tenancy.
    6) Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the service/facility.

Whilst the above principles are defined with respect to “tenants” of the building, they could also be applied outside the context of a landlord/tenant arrangement. The intent is that these principles could be applied to any entity separate to that making the claim who can be shown to have a reasonable degree of operational control of emissions that result from services/facilities within the geographic boundary of the building.

Summary

In each case, the emissions boundary should be applied equally to all emission sources, that is, energy, water, waste and refrigerant-related emissions. The emissions boundary is not assessed separately for each emissions source, but rather, on the basis of the service and/or facility.

Any exclusions of centralised HVAC services from the emissions boundary must be clearly declared as per the requirements noted under “Declaration of excluded emissions” below.

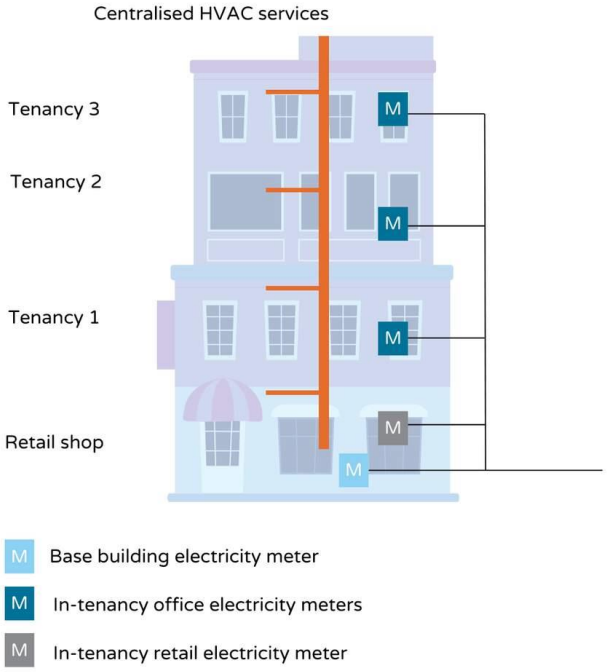
7.3 Example scenarios for mixed-use buildings

The following scenarios are not uncommon to base building NABERS office assessments with mixed-use components. Examples are provided of how the above guidance could be applied for acceptable approaches to the *base building* carbon neutral claim in each scenario. In the case of a *whole building* carbon neutral claim, the emissions discussed in each example below would be deemed relevant to the whole building and included in the whole building emissions boundary.

Table 7.3: Mixed-use building example scenarios

Scenario	Acceptable approach(es)
An office tower has a retail café operating in its own section of the ground floor foyer. The café is air-conditioned by a dedicated water-cooled PAC unit connected to the café's tenant distribution board and the tenant has access to the wall-controller for the unit. Condenser water is provided to the unit via the base building supplementary condenser water system.	The retail portion of the building is deemed to be within the geographic boundary of the building. The condenser water system serving the PAC unit would be deemed relevant to the base building carbon neutral claim as a centralised service. The PAC unit itself may be deemed relevant to either the base building or the tenant on the basis of operational control. As the unit is connected to the tenant's distribution board, it would likely be deemed most appropriate to be excluded from the base building's emissions boundary. In this case, air-conditioning services to the retail café (with the exception of heat rejection) would be declared as an excluded emissions source on the PDS.
An office tower features a podium food court with several retail food outlets. Food court tenants are air-conditioned by chilled water fan coil units served by the same chilled water system that serves the office building. The tenants have access to wall-controllers for their own respective fan coil units. There is a separate fan coil unit that is dedicated to the common area of the food court. The office NABERS Energy rating is assessed with a thermal energy exclusion based on thermal energy meters installed on each of the chilled water supplies to individual fan coil units.	The retail portion of the building is deemed to be within the geographic boundary of the building. The default position is that the entire centralised chilled water system should be deemed relevant the base building carbon neutral claim and the emissions included in the base building carbon account. This is the preferred outcome. However, the tenants may be deemed to have a degree of operational control over their portion of the energy consumption of the chilled water plant on the basis that they control their own fan coil units and are metered and on-charged for thermal energy consumption. Given there is metering infrastructure in place to enable the emissions to be apportioned to the tenants for their own respective carbon neutral claims, exclusion of the thermal energy for the tenant-specific air-conditioning services would be an acceptable approach if desired by the building owner. In this case, air-conditioning services to the retail food outlets would be declared as an excluded emissions source on the PDS. Exclusion of the thermal energy consumed by the common area fan coil unit is not acceptable under any approach. The emissions of common area air-conditioning must be deemed relevant to the base building.

An office tower features a retail podium food court with several retail food outlets. Food court tenants are air-conditioned by two large air handlers serving several tenancies each. Both AHUs are connected to the central office chilled water system. There are no local controllers within the tenancies for the air-conditioning systems. The office NABERS Energy rating is assessed with a thermal energy exclusion based on a single thermal energy meter installed on the supply to whole retail podium.	The retail portion of the building is deemed to be within the geographic boundary of the building. The air-conditioning services to the retail food court tenants must be included in the base building carbon neutral claim. This is the only acceptable approach, for two reasons: a) The tenants cannot be considered to have a reasonable degree of operational control of the air-conditioning service to their respective tenancies as none of the criteria for making that determination are true. b) There is no metering infrastructure in place to allow the emissions of the system to be measured and assigned to the respective tenancies for their own respective carbon neutral claims. Either of the above would be sufficient on its own to determine that the retail air-conditioning services must be deemed relevant to the base building carbon neutral claim.
An office tower includes two levels of basement car park managed by a third party. None of the spaces are reserved for the use of office tenants as a condition of their lease. Car park ventilation and lighting energy consumption is excluded from the rated energy of the NABERS Energy rating via electricity sub-meter.	The car park is deemed to be within the geographic boundary of the building. The energy consumption of car park lighting and ventilation is typically a base building service and typically within the operational control of the base building, and thus deemed relevant to the base building carbon neutral claim. There may be cases where the car park managing agent could be deemed to have a reasonable degree of operational control and thus it could be acceptable to exclude the emissions from the base building emissions boundary, so long as they are declared as such in the PDS.
An office tower includes a retail podium food court with several retail food outlets. The building owner has separate waste management contracts for the office tower and the retail food court, and separate waste collection records for each. Waste from the retail food court is not included in the office tower's NABERS Waste rating.	The retail portion of the building is deemed to be within the geographic boundary of the building. The waste-related emissions from the retail food court must be included in the base building carbon neutral claim, on the basis that none of the tenants can be deemed to have operational control of the waste management service. Even if the tenants could be deemed to have operational control, the waste-related emissions specific to individual tenants in this case could not be measured and assigned to respective tenants because the waste-collection service is centralised. If the tenants could be deemed to have operational control, the service could only be excluded from the base building's carbon neutral claim if there were waste-collection records available that were specific to each tenant, thus allowing the waste-related emissions to be accounted for in the tenants' own respective carbon neutral claims.



Emission Source	Type of Space	Base building rating		Whole building rating	
		NABERS Energy Rating	CN Rating	NABERS Energy Rating	CN Rating
Emissions related to Centralised HVAC	In tenancy office spaces.	Yes	Yes	Yes	Yes
	In tenancy retail spaces.	No	Yes. HVAC is a base building service.	No. NABERS Whole building Energy ratings don't capture in tenancy retail HVAC emissions.	Yes
	Common Areas (office floors and retail floors).	Only Common Areas on office floors.	All common areas including retail floors.	No. NABERS Whole building Energy ratings don't capture retail Common Area HVAC emissions.	Yes. All Common Areas including retail floors.
Emissions related to Common Area power and lighting services	Office floors	Yes	Yes	Yes	Yes

M Base building electricity meter	Retail floors	No	Yes. Common Area power and lighting electricity is a base building service.	No	Yes. All Common Areas including retail floors.
M In-tenancy office electricity meters	Office tenancies (tenancy 1, 2 and 3)	No	No	Yes	Yes
M In-tenancy retail electricity meter	Retail Shop	No	No	No	Yes

7.4 Declaration of excluded emissions

Any emission sources that form the minimum requirements for a CN rating (base or whole building) cannot be excluded. However, emission sources within the geographic boundary but outside the minimum required emissions of the building must be clearly defined and justified in the NABERS Carbon Offset Calculator spreadsheet. See examples outlined in Table 7.4.

Any exclusions made on the basis of operational control following the guidance from sections "NABERS advice on emissions deemed to be relevant" and "Example scenarios for mixed-use buildings" need to be supplemented by adequate evidence as outlined under section 9.7.

These exclusions will be noted on the building's carbon neutral NABERS' issued **Public Disclosure Statement**. This information informs the public of which services and/or areas of the building can be considered as carbon neutral as a result of the claim, and which cannot. This is critical to the transparency of the carbon neutral claim and is expected to be detailed attentively by the NABERS **Assessor**.

The declaration should address all emissions sources that have not been included in the claim's emissions boundary but are within the building's geographic boundary.

Table 7.4: Example declaration of excluded emissions for a base building office carbon neutral claim

Emissions sources not included in this carbon neutral claim	**Description and justification of the exclusion**
Office tenancy light and power	Office tenancy lighting, power and supplementary air-conditioning are excluded as per NABERS minimum energy coverage requirements for base building offices.
Retail tenancy light and power	Retail tenancy lighting, power and supplementary air-conditioning are excluded on the basis these are outside the operational control of the building owner.

HVAC services to retail tenants	Heating, ventilation and air-conditioning services to retail tenants are excluded on the basis of shared operational control. The building owner has elected to exclude these emissions from the claim.
Lighting and ventilation to shared portion of the car park	Fifty percent of car park energy-related emissions are excluded on the basis that the car park is shared with a building external to the claim.
Tenant-managed waste streams	Tenant-managed waste streams that are not managed by the building owner are excluded as per NABERS requirements for base building offices.

7.5 Shared services and facilities

The emissions of services and/or facilities that are shared with users outside the geographic boundary of a carbon neutral claim may be apportioned for the purposes of the claim. The principles and methodologies for the apportioning of emissions in these cases are expected to follow those applied in the NABERS rating at the core of the claim. Thus, the energy and water inclusions/exclusions made in the NABERS rating shall also apply to the carbon neutral claim. Similar apportioning methodologies may also be acceptable for apportioning of other emissions sources associated with the shared service/facility, such as refrigerants and waste.

The Climate Active Carbon Neutral Standard for Buildings notes that for buildings that share facilities and services with other buildings, the responsible entity may seek carbon neutrality separately for each of the individual buildings or together as a precinct (if they qualify under the Climate Active Carbon Neutral Standard for Precincts).

8 Water and wastewater carbon neutral guidance

8.1 How water-related emissions are assessed

8.1.1 General

Scope 3 emissions from water supply and wastewater treatment are deemed relevant to all buildings under the Climate Active Carbon Neutral Standard for Buildings. These emissions account for the off-site emissions associated with:

a) Pumping and treatment of water supplied to the building; and

b) Pumping and treatment of wastewater discharged from the building.

8.1.2 Measuring water consumption for sectors with NABERS Water ratings

Water consumption shall be assessed in accordance with the NABERS Rules for Metering and Consumption.

Note: It is preferable but not mandatory that the annual water consumption is sourced from a NABERS Water rating combined with the NABERS Energy rating at the core of the claim.

8.1.3 Measuring water consumption for sectors without NABERS Water ratings

For sectors where a NABERS Water rating is not offered, the water consumption shall still be assessed according to Chapter 4 and Chapter 5 of the NABERS Rules for Metering and Consumption, provided they can be reasonably applied to the building.

The carbon account in sectors where a NABERS Water rating is not offered shall include all water consumed within the geographic boundary of the premises.

In the Warehouses and Cold Stores sector, it is acknowledged that some properties may not have a water meter that is exclusive to the premises. In this sector, the following methods shall be used to evaluate water consumption, in order of priority:

a) **Utility** metered water consumption that is exclusive to the rated premises.
b) Non- **utility** metered water consumption that is exclusive to the rated premises.
c) Apportioning of **utility** or non- **utility** metered water consumption that is shared outside of the premises, based on:
    1) Financial reconciliation (e.g. on-charging rates used by the landlord).
    2) Ratios of Gross Lettable Area.
d) 100% allocation of **utility** metered water consumption at the parent meter where no apportioning is possible.

Apportioning of water consumption is prohibited for any Warehouses/Cold Stores that utilise water-cooled refrigeration and/or water-cooled air-conditioning equipment. Priority (d) must be applied for sites with water-cooled refrigeration and/or water-cooled air-conditioning equipment that do not have a water meter (**utility** or non- **utility**) that is exclusive to the premises.

Utility and non- **utility** water meter data shall be processed in accordance with the NABERS Rules for Metering and Consumption, including the requirements therein for non- **utility** meter validation. Apportionment of consumption applied under Priority (3) shall follow the methods outlined in the NABERS Shared Services and Facilities Ruling (but are not subject to minimum or maximum area thresholds specified in that **Ruling**).

8.1.4 Period of data collection for water consumption

A full 12 months of water and wastewater emissions data is required for the claim in both scenarios mentioned in sections 8.1.2 and 8.1.3. The Climate Active Carbon Neutral for Buildings Standard defines the 12-month period for which emissions data is collected as the base year. For claims made via the NABERS Pathway, the base year is set according to the **Rating Period** of the NABERS Energy rating at the core of the claim. Assessors must prioritise collecting water and wastewater emissions data for that same base year. Up to two months misalignment between the base year and the water consumption data period is acceptable where such data is not available.

8.1.5 Methods for calculating water and wastewater emissions

There are four options provided for calculating water and wastewater emissions in the NABERS Carbon Offset Calculator Default emissions factors employed in the calculator for water and wastewater are published by the Australian Life Cycle Inventory Database Initiative (AusLCI). The options are as follows:

A. **Default combined emissions factor for water and wastewater.** When applying the default combined water and wastewater emissions factor, the water and wastewater emissions are calculated by applying a single emissions factor to the annual water consumption which accounts for all Scope 3 emissions associated with water and wastewater. The emissions factor includes a generic assumption on the proportion of water consumption that is discharged from the property as wastewater (that is, the “wastewater discharge factor”). Using this method, the assessor does not need to source or enter information related to the building’s actual wastewater discharge factor.

B. **Default emissions factors and user-defined wastewater discharge factor.** When the wastewater discharge factor and/or the wastewater discharge volume is known, the assessor can choose to enter this data to allow a more accurate assessment of wastewater related emissions. Under this method, the calculator applies distinct default emissions factors to the water consumption and wastewater discharge. When using this method, the assessor must document evidence for the wastewater discharge factor/volume, in the form of **utility** bills or other credible information. Any wastewater discharge factor presented on the **utility** bills for the site is acceptable to use as a user-defined wastewater discharge factor.

C. **User-defined combined emissions factor for water and wastewater.** For use when there is credible information to support a site-specific emissions factor that includes both water and wastewater emissions. This method is not able to be used for sites where on-site rainwater or bore water collection is used for services that contribute to wastewater discharge.

D. **User-defined emissions factors and user-defined wastewater discharge factor.** For use when the wastewater discharge factor and/or wastewater discharge volume is known, and there is credible information to support a distinct site-specific emissions factor for water supply and a distinct site-specific emissions factor for wastewater.

8.1.6 Emissions related to consumption of rainwater or bore water collected on-site

Some buildings utilise rainwater and/or bore water collected on-site for services that contribute to wastewater discharge (e.g. toilet-flushing). In these cases, there is a risk that wastewater emissions will be under-represented if the water-related emissions calculations are exclusively based on the building's mains water consumption. Where metering data allows, assessors are encouraged to quantify these wastewater emissions applying Method D (above), using the wastewater emissions factors in the AusLCI database. Any exclusion of these wastewater emissions from the carbon account may only be considered with respect to the materiality and relevance tests of the Climate Active Carbon Neutral Standard for Buildings.

9 Evidence documentation requirements

9.1 General

This section outlines the evidence requirements for each component of a carbon neutral claim made via the NABERS Pathway. This evidence must be collected and retained by the **Assessor** and provided to the NABERS Auditor in the event of a Level 2 audit.

9.2 Energy

Evidence requirements for the energy component of the assessment are detailed in the NABERS Energy and Water Rules for the respective building type, as well as in the NABERS Rules for Metering and Consumption.

Additional evidence requirements for **Carbon Neutral Electricity** accounting including Greenpower, Power Purchase Agreements and Retirement of **Large-scale Generation Certificates (LGCs)** are detailed in the document: *Climate Active Electricity Accounting August 2023,* available here. *Note that this document will be updated at the time of reading. Please refer to the latest document.*

The following additional evidence is required to demonstrate evidence for on-site renewable energy generation systems:

a) Evidence to verify the presence, capacity, and coverage of on-site renewable energy generation systems such as:
    1) Single line diagrams; and/or
    2) Other as-built electrical drawings; and/or
    3) Operating and Maintenance Manuals.
b) Evidence to verify the quantity of renewable energy consumed and exported by on-site renewable energy generation systems shall comply with the requirements of the NABERS Rules for Metering and Consumption.

9.3 Waste

For carbon neutral assessments that reference a NABERS Waste rating as the source of waste emissions data, **Assessors** are required to document the NABERS rating certificate and rating report as evidence.

For assessments that do not reference a NABERS Waste rating, **Assessors** should consult the NABERS Waste Rules and the NABERS Waste Data Verification Ruling to confirm evidence requirements, noting that the evidence requirements differ for each tier of waste data quality.

Minimum requirements include:

a) Building waste management configuration evidence as per Section 9.1.1 of the *NABERS Waste Rules (Version 2.0 – June 2023)* demonstrating the quantity and size of each bin presented for collection for each waste stream, including photos of the bins in situ.
b) Waste collection data evidence as per Section 4.1 of the *NABERS Waste Rules (Version 2.0 – June 2023)* demonstrating details of each instance of individual bin collection. Where individual bin collection records are not available, alternative evidence must be provided, including:
    1) Aggregated collection data; or
    2) Contract waste collection data; or
    3) Manually calculated estimates.

9.4 Refrigerants

9.4.1 Evidence requirements for refrigerant type

The following evidence must be documented to demonstrate the refrigerant type and refrigerant charge of equipment included in the carbon account:

a) Photos of the nameplate of each item of equipment clearly identifying the following:
    1) Make.
    2) Model number.
    3) Serial number.
    4) Refrigerant type.
    5) Refrigerant charge (kg).
b) Where photos cannot be gathered, other evidence of the above such as equipment specifications, datasheets, asset registers, etc., as well as notes confirming why nameplate photos were not gathered.

9.4.2 Evidence requirements for equipment

The following evidence must be documented to demonstrate the completeness of the equipment included in the carbon account, including:

a) Mechanical equipment asset register; and/or
b) Mechanical Operations and Maintenance Manual; and/or
c) Mechanical drawings; and/or
d) Assessor's site visit notes.

9.4.3 Evidence requirements for refrigerant emissions calculations

The following evidence must be documented to demonstrate the refrigerant emissions calculations:

a) For Method 1 calculations: References to credible sources shall be provided for any assumed leakage rates applied for equipment not specifically noted in the National Greenhouse and Energy Reporting (Measurement) Determination 2008.

b) For Method 2 calculations:

    1) Refrigerant Gas Equipment Maintenance Register completed with a service history for the whole base year; and/or

2) Job records/invoices for services of equipment during the base year where refrigerant was added to the system; and/or
3) Statements from maintenance contractors that comply with the requirements.

9.4.4 Evidence requirements based on the history of refrigerant assessments

The following evidence must be documented to demonstrate that the **Assessor** has considered the history of refrigerant assessments at the site over multiple years:

a) Climate Active Carbon Neutral **Public Disclosure Statements** for each of the five previous years to the base year.
b) Where zero refrigerant emissions are claimed over more than three consecutive years, evidence that the **Assessor** has investigated the integrity of refrigerant emissions information for (at least) the base year.

9.5 Water and wastewater

Evidence requirements for the water component of the assessment are detailed in the NABERS Energy and Water Rules for the respective building type as well as in the NABERS Rules for Metering and Consumption.

The following additional evidence is required where applicable:

a) Evidence to support user-defined wastewater discharge rates. Wastewater discharge rates are typically expected to be sourced from the site's water **utility** bills. Other acceptable evidence may include:
    1) A report from an appropriately qualified third-party;
    2) Correspondence with the water **utility** provider; or
    3) Water sub-metering data, schematics and assessor's calculations showing their own derivation of wastewater discharge figures.
b) Evidence to support user-defined emissions factors for water supply and/or wastewater discharge.
c) Evidence to support the treatment of wastewater emissions in relation to the consumption of rainwater and/or bore water collected on-site, which is expected to include water schematics, sub-metering data, calculations, and assumptions.

9.6 Other emissions

For any "Other scope 1, 2, and 3 emissions" sources noted in the table on the "Other emissions" tab of the NABERS Carbon Offset Calculator spreadsheet, documented evidence should include information sufficient to verify the calculated emissions.

Any emissions sources that are within the emissions boundary of the claim but are not included in the carbon account should be noted and justified within the NABERS Carbon Offset Calculator spreadsheet. Evidence to verify why these emissions sources have been deemed immaterial should be documented, particularly for all emissions sources where this assessment could reasonably be considered as contentious. (Note: the immateriality of emissions of staff travel and waste transport are not considered to be contentious.) Refer to the Climate Active Standard of buildings to determine immaterial emissions.

9.7 Excluded emissions

Emissions sources from within the geographic boundary of the building that are excluded from the claim's emissions boundary must be justified with documentary evidence. Where the exclusion is based on NABERS coverage requirements for that building type, no further evidence is necessary. However, for mixed-use components of the building, the following evidence must be provided to verify compliance with the guidance for mixed-use buildings, specifically to demonstrate:

a) The availability of existing infrastructure that would allow the emissions associated with the excluded emissions source to be measured and assigned to a third party for the third party's own carbon neutral claim; and
b) Evidence that verifies that the third party has a reasonable degree of operational control over that emissions source, such as:
    1) As-built documentation.
    2) Operation and Maintenance manuals.
    3) Photos of equipment and control infrastructure.
    4) Billing records.
    5) Leases and other contractual agreements.
    6) Other written evidence describing operation.

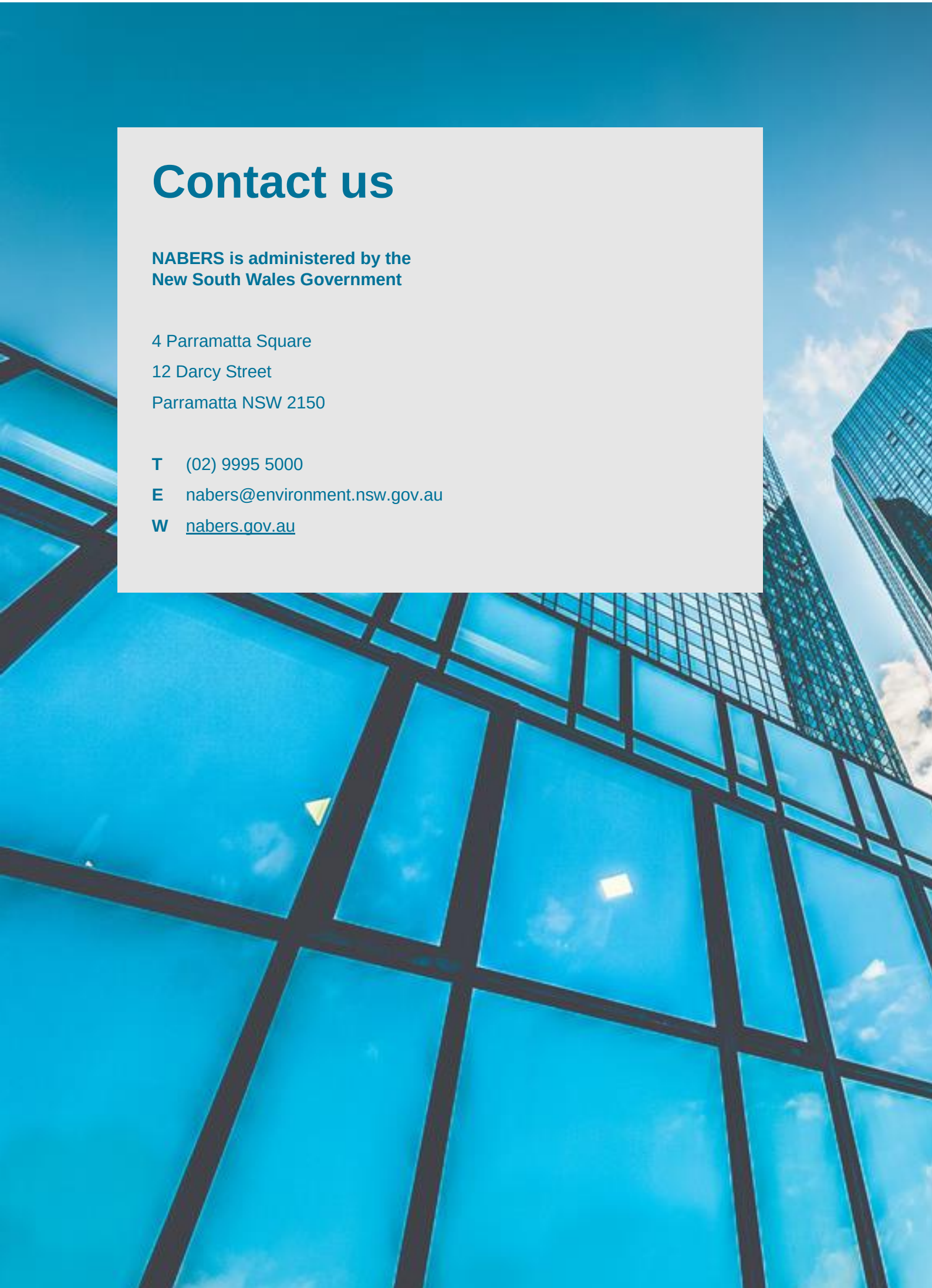
9.8 Carbon offsets

The following evidence must be documented to verify the details and retirement of offsets declared in the NABERS Carbon Offset Calculator spreadsheet, including a screenshot of the registry account and/or a confirmation email from the registry demonstrating:

a) Name of the offset project and project description.
b) Quantity of offsets.
c) Offset type.
d) Offset serial numbers.
e) Offset registry.
f) Date of retirement.
g) Confirmation of retirement in the name of the building for which the claim is made, and for the time period for which the claim is made.
h) Vintage of the offset units.

Any offset units used must meet eligibility requirements as set out in Appendix A of the Climate Active Carbon Neutral Standard for Buildings.

In case of bulk surrender of offsets, assessors are advised to use the surrender note in the CN offset calculator to clarify the surrendering arrangement for any offsets. It is important to ensure the certification is transparent and can be understood by stakeholders and the public.



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