



# NABERS Carbon Neutral technical guidance **Consultation Paper**

NABERS is administered by the New South Wales Government.

Published September 2023

# Contents

|  |           |
|--|-----------|
| <b>Contents.....</b>   | <b>2</b>  |
| <b>1 Introduction.....</b>   | <b>3</b>  |
| <b>2 Update on Waste guidance.....</b>                                     | <b>4</b>  |
| 2.1 How emissions from Waste are assessed .....                            | 4         |
| 2.2 NABERS’ proposed changes .....   | 4         |
| <b>3 Update on Refrigerants guidance.....</b>                              | <b>8</b>  |
| 3.1 How emissions from Refrigerants are assessed .....                     | 8         |
| 3.2 NABERS’ proposed methods for accounting of refrigerant emissions ..... | 8         |
| 3.3 Refrigerant Gas Equipment Maintenance Register .....                   | 9         |
| 3.4 Statements from maintenance contractors .....                          | 10        |
| 3.5 NABERS’ additional aspect for accounting of refrigerant emissions..... | 10        |
| <b>4 Update on Mixed-use building guidance .....</b>                       | <b>13</b> |
| 4.1 How emissions from Mixed-use buildings are assessed .....              | 13        |
| 4.2 NABERS’ advice on emissions deemed to be relevant.....                 | 14        |
| 4.3 Declaration of excluded emissions .....                                | 16        |
| 4.4 Mixed-use buildings example scenarios .....                            | 17        |
| 4.5 Shared services and facilities .....                                   | 20        |
| <b>5 Documented evidence requirements .....</b>                            | <b>21</b> |
| 5.1 NABERS’ proposed change.....   | 21        |
| <b>6 Other updates .....</b>   | <b>25</b> |
| 6.1 NABERS’ proposed updates .....   | 25        |

# 1 Introduction

NABERS currently offers a Climate Active carbon neutral certification pathway for office buildings (whole buildings and base buildings), shopping centres and hotels. We engaged an external consultant to strengthen our existing processes and supporting documentation.

This scope of work was undertaken as a preliminary stage towards expansion of the certification pathway to other NABERS-rateable building types. The scope focussed on review existing assessment strategies being applied, with the intent of documenting a new technical guidance manual for the NABERS pathway similar to the existing Climate Active Technical Guidance manual. This provides a reference not only for assessors, but to provide a reference point for consideration as the pathway is expanded into other building types.

This consultation paper seeks feedback from stakeholders including assessors, building owners and consultants on several proposals that address these key questions. The proposals in this paper have been developed by the NABERS team in consultation with Climate Active (CA) and Green Building Council of Australia (GBCA). Stakeholder feedback is sought to inform the final recommendations that will be brought to the NABERS Governance Committee for approval.

Please provide feedback using the **response form**. Once completed please save it in word format (.docx) and email it to [nabers@environment.nsw.gov.au](mailto:nabers@environment.nsw.gov.au) by close of business Tuesday 10<sup>th</sup> October 2023.

Please forward this consultation paper to any other interested parties.

## 2 Update on Waste guidance

### 2.1 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 provided here should be read in conjunction with the NABERS Waste Rules (Version 1.3 February 2021) and the NABERS Waste Data Verification Ruling (Version 2.0 September 2022).

### 2.2 NABERS' proposed changes

#### 2.2.1 Waste types

Waste types required to be captured are equivalent to the requirements of the would-be NABERS Waste rating or NABERS Waste Data Verification rules applicable to the building type and rating scope. With the intent to capture emissions from solid waste disposal to landfill from waste streams within the operational control of the entity making the carbon neutral claim, 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.

#### 2.2.2 Waste collection data requirements

It is understood by NABERS 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".

#### 2.2.3 Declaration of waste data quality

The NABERS Waste Rules define 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 these rules and declare which tier the waste data quality would be categorised as in the NABERS Carbon Offset Calculator Spreadsheet. Assessors are required to maintain evidence to support this declaration.

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 tier does not directly impact the emissions calculations for the claim, but it will appear on the building’s NABERS issued Public Disclosure Statement (PDS).

## 2.2.4 Waste collection data that does not satisfy NABERS Waste requirements

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.

### 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:

- **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.
- **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 annually.
- **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”.

### 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 NABERS Shared Services and Facilities Ruling (Version 1.0), via either financial reconciliation or area-based allocation.

Where the apportionment results in less than 80% of the total waste emissions (kgCO<sub>2</sub>-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”.

### 2.2.5 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.

### 2.2.6 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.

### 2.2.7 Waste boundary for office vs CN rating

Assessors should be mindful of all the waste associated with the building for a CN certification. E.g., Waste for a NABERS office rating excludes areas such as retail waste or childcare waste as they are not within the boundary of a NABERS office waste rating. However, these areas must be accounted for the CN certification of the building.

### 2.2.8 Additional recommendations from NABERS

Waste emissions be scaled based on waste data quality

- Waste data quality "excellent" => 100% x calculated emissions
- Waste data quality "good" => 110% x calculated emissions
- Waste data quality "acceptable" => 125% x calculated emissions
- Waste data quality "basic" => 135% x calculated emissions
- Waste data quality "poor" => 150% x calculated emissions

Some buildings do not have the resources or capital to capture waste data at all, in our recommendation we can overcome this by having a mandatory waste rating for CN rating lodgements, we propose this to be by FY24/25. The bullet points below capture the steps to assist with this recommendation,

1. NABERS will give building owners one year time to start capturing waste data.
2. Implement the minimum waste standard for CN lodgements. Which is to have waste pick-ups captured daily instead of monthly or yearly figures.
3. We propose assessors lodging CN ratings should have a waste accreditation. Date to be discussed.

## Focus Questions

- 1) Do you have any comments on the above updates about declaration of waste data quality?
- 2) Do you have any feedback on the Waste collection data that does not satisfy NABERS Waste requirements?
- 3) Do you have any feedback on the proposed implementation of scaled emissions based on waste data quality?
- 4) Do you have any comments on the update for formal waste rating or collection of data in accordance with the NABERS Waste verification rules is considered as pre-requisite for a carbon neutral claim via the NABERS-pathway?
- 5) Do you have any feedback on the proposed recommendation for assessors being accredited in Waste rating tool for them to proceed for CN accreditation?
- 6) Do you have any other suggestions of how we can prepare industry for these changes?

## 3 Update on Refrigerants guidance

### 3.1 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:

- ✓ Gradual leaks during normal operation
- ✓ Catastrophic losses during normal operation
- ✓ Losses during plant service and maintenance
- ✓ Losses at end of plant life

At the present time, 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.

### 3.2 NABERS' proposed methods for accounting of refrigerant emissions

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

NABERS proposes 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 NGERS 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. 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".



| 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%                 | E.g., mini fridges in hotel rooms  |

### 3.2.2 Method 2: Approximation based on records of top-ups

NABERS proposes that 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 (i.e., in carbon neutral claims for following years) so 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 Refrigerant Gas Equipment Maintenance Register completed for the 12-month base year (see below)
- ✓ Job records/invoices for services of equipment where refrigerant was added to the system
- ✓ Statements from maintenance contractors to verify how much refrigerant was added to a system

## 3.3 Refrigerant Gas Equipment Maintenance Register

NABERS recommend that building managers 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 include, for each item:

- ✓ Equipment identifier
- ✓ Equipment type
- ✓ Refrigerant type
- ✓ Heating/cooling capacity (kW<sub>r</sub>)
- ✓ Refrigerant charge (kg)
- ✓ Service notes for each service to confirm:
  - Is the equipment demonstrating symptoms of less-than-design refrigerant charge?
  - Was the refrigerant charge tested during this service?

- Was a refrigerant leak detection undertaken during this service?
- 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 behind this 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.

### 3.4 Statements from maintenance contractors

NABERS is proposing to have a signed statement from a maintenance contractor to confirm how much refrigerant was added to a system over a given time period, 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:

- ✓ Contractor's business name
- ✓ Name of the contractor's representative
- ✓ Contractor's Refrigerant Trading Authorisation number
- ✓ Acknowledgement of the time period that the statement pertains to
- ✓ Confirmation that the contractor had an active maintenance contract for the equipment throughout that time period
- ✓ Identification of each item of refrigerant gas equipment that was included under the maintenance contract
- ✓ 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.

### 3.5 NABERS' additional aspect for accounting of refrigerant emissions

#### 3.5.1 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.

### 3.5.2 Refrigerant gases that must be considered

NABERS proposes that 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).

### 3.5.3 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 single split system AC unit serving the main switch room would be evaluated for materiality on its own, as an individual unit
- ✓ 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
- ✓ A single domestic fridge in the building manager's office would be evaluated for materiality on its own, as an individual unit
- ✓ 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.

NABERS produce templates for a Refrigerant Gas Equipment Maintenance Register (spreadsheet) and a Refrigerant gas emissions statement from maintenance contractor (letter format).

Consider a research study with the aim of measuring accurate refrigerant leakage rates. Such a study may include:

On a macro level, cooperation with skilled and enthusiastic HVAC contractors to utilise their mandatory-reportable data on refrigerant purchases for all their sites compared with mechanical asset register with all their sites.

On a micro level, cooperation with building portfolio owners to conduct 6-monthly testing of refrigerant charge (via siphoning and weighing) of each chiller of each building. A very broad cross-section of buildings with various types of chillers and various stages of life would be required.

### Focus Questions

- 7) Are you in favour of proposed methods for accounting of refrigerant emissions? Would you use it or recommend it?
- 8) How well does these methods resolve the scenario for zero % claim for refrigerant leaks? Please share your feedback.
- 9) What are your comments regarding development of Refrigerant Gas Equipment Maintenance Register?
- 10) What are your comments regarding having a Statements from maintenance contractors for refrigerant addition in a given period under method 2?
- 11) Do you support NABERS' approach for
  - Refrigerant emissions accounting methods over multiple years
  - Account for all refrigerant with GWP greater than zero
  - Materiality with respect to refrigerant gas emissions

## 4 Update on Mixed-use building guidance

### 4.1 How emissions from Mixed-use buildings are assessed

One of NABERS' key objectives is to help assessors navigate decisions through this guidance that they need to make 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:

- ✓ Geographic boundary,
- ✓ Building operations, and,
- ✓ Relevance

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

- 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).
- 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.
- 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 not deemed as relevant for a base building carbon neutral claim. Scope 3 emissions sources must be assessed for relevance in accordance with the relevance test.

## 4.2 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.

| <b>Scenario-1 Centralised heating, ventilation, and air-conditioning</b>   | <b>Scenario-2 Stand-alone heating, ventilation, and air-conditioning</b>  | <b>Scenario-3 Other services and facilities in mixed-use buildings</b>   |
|--|---|--|
| <p>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.</p> <p>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.</p>                                | <p>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.</p>   | <p>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.</p>  |
| <p>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 the base building carbon neutral claim and can only be excluded from the emissions boundary if the following conditions are true:</p> <ul style="list-style-type: none"> <li>• 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,</li> </ul> | <p>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:</p> <ul style="list-style-type: none"> <li>• 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,</li> <li>• 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:</li> </ul> | <p>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:</p> <ul style="list-style-type: none"> <li>• The emissions associated with the service or facility specific to a respective tenant could be measured and assigned to that tenant for their own individual claim of carbon neutrality, and,</li> <li>• 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:</li> </ul> |

|  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• 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:             <ul style="list-style-type: none"> <li>○ The tenant being responsible for design and selection of the HVAC equipment</li> <li>○ 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</li> <li>○ The tenant being responsible for engaging maintenance of the HVAC equipment</li> <li>○ The tenant being billed for metered consumption of electrical and/or thermal energy consumption of the HVAC system</li> <li>○ Lease conditions or other agreements stipulating requirements for operation of the plant that are particular and specific to that tenancy (for e.g., 24/7 operation)</li> <li>○ Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the HVAC services to their tenancy</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>○ The tenant being responsible for design and selection of the HVAC equipment</li> <li>○ 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</li> <li>○ The tenant being responsible for engaging maintenance of the HVAC equipment</li> <li>○ The tenant being billed for metered consumption of electrical and/or thermal energy consumption of the HVAC system</li> <li>○ Lease conditions or other agreements stipulating requirements for operation of the plant that are particular and specific to that tenancy</li> <li>○ Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the HVAC services to their tenancy</li> </ul> | <ul style="list-style-type: none"> <li>○ The tenant being responsible for design and selection of hardware associated with the service/facility</li> <li>○ The tenant having direct access to control of equipment associated with the service/facility</li> <li>○ The tenant being responsible for engaging maintenance and/or services for the service/facility</li> <li>○ The tenant being billed for metered energy, water or other consumables associated with the service/facility</li> <li>○ Lease conditions or other agreements stipulating requirements for the service/facility that are particular and specific to that tenancy</li> <li>○ Lease conditions or other agreements that stipulate that the tenant shall be responsible for emissions associated with the service/facility</li> </ul> <p>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.</p> |
| <p>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.</p>  |  |   |
| <p>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.</p>   |  |   |

### 4.3 Declaration of excluded emissions

All emissions sources within the geographic boundary of the building that are not included in the building’s carbon neutral claim must be clearly defined and justified in the NABERS Carbon Offset Calculator spreadsheet. 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 1: Example declaration of excluded emissions for a base building office carbon neutral claim*

| Emissions sources not included in this carbon neutral claim | Description & 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  | 50% 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   |



## 4.4 Mixed-use buildings example scenarios

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 2: Mixed-use building example scenarios

| Scenario  | Acceptable approach(es)   |
|---|---|
| <p>An office tower has a retail café operating in its own section of the ground floor foyer.</p> <p>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.</p> | <p>The retail portion of the building is deemed to be within the geographic boundary of the building.</p> <p>The condenser water system serving the PAC unit would be deemed relevant to the base building carbon neutral claim as a centralised service.</p> <p>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.</p> |

|  |  |
|--|--|
| <p>An office tower features a podium food court with several retail food outlets.</p> <p>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.</p> <p>There is a separate fan coil unit that is dedicated to the common area of the food court.</p> <p>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.</p> | <p>The retail portion of the building is deemed to be within the geographic boundary of the building.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| <p>An office tower features a retail podium food court with several retail food outlets.</p> <p>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.</p> <p>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.</p>   | <p>The retail portion of the building is deemed to be within the geographic boundary of the building.</p> <p>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:</p> <ul style="list-style-type: none"> <li>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</li> <li>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</li> </ul> <p>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.</p>  |

|   |   |
|---|---|
| <p>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.</p> <p>Car park ventilation and lighting energy consumption is excluded from the rated energy of the NABERS Energy rating via electricity sub-meter.</p>                       | <p>The car park is deemed to be within the geographic boundary of the building.</p> <p>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.</p> <p>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.</p>  |
| <p>An office tower includes a retail podium food court with several retail food outlets.</p> <p>The building owner has separate waste management contracts for the office tower and the retail food court, and separate waste collection records for each.</p> <p>Waste from the retail food court is not included in the office tower’s NABERS Waste rating.</p> | <p>The retail portion of the building is deemed to be within the geographic boundary of the building.</p> <p>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.</p> <p>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.</p> |

## 4.5 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).

### Focus Questions

- 12) Are you in favour of the proposed changes?
- 13) Do you have any other feedback on the proposed changes?

## 5 Documented evidence requirements

### 5.1 NABERS' proposed change

This section outlines 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.

#### 5.1.1 Refrigerants

Evidence must be documented to demonstrate the refrigerant type and refrigerant charge of equipment included in the carbon account, including:

- Photos of the nameplate of each item of equipment clearly identifying the equipment's:
  - Make
  - Model number
  - Serial number
  - Refrigerant type
  - Refrigerant charge (kg)
- 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.

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

- Mechanical equipment asset register, and/or,
- Mechanical Operations & Maintenance Manual, and/or,
- Mechanical drawings, and/or,
- Assessor's site visit notes.

Evidence must be documented to demonstrate the refrigerant emissions calculations, as follows:

- 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.
- For Method 2 calculations:
  - Refrigerant Gas Equipment Maintenance Register completed with a service history for the whole base year, and/or,
  - Job records/invoices for services of equipment during the base year where refrigerant was added to the system, and/or,
  - Statements from maintenance contractors that comply with the requirements.

Evidence must be documented to demonstrate that the assessor has considered the history of refrigerant assessments at the site over multiple years, including:

- Climate Active Carbon Neutral Public Disclosure Statements for each of the five previous years to the base year,
- 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.

### 5.1.2 Energy

Evidence requirements for the energy component of the assessment are detailed in the NABERS Energy & 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 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:

- Evidence to verify the presence, capacity, and coverage of on-site renewable energy generation systems such as:
  - Single line diagrams, and/or,
  - Other as-built electrical drawings, and/or,
  - O&M Manuals.
- 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

### 5.1.3 Water and wastewater

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

Additional evidence is required to verify scope 3 emissions factors for water and wastewater for any carbon neutral claims for sites not located in the default urban centres provided in the dropdown emissions factors list on the “Water and Wastewater” tab in the NABERS Carbon Offset Calculator spreadsheet.

### 5.1.4 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:

- Building waste management configuration evidence as per Section 9.1.1 of the NABERS Waste Rules (Version 1.3 – February 2021) demonstrating the quantity and size of each bin presented for collection for each waste stream, including photos of the bins in situ.
- Waste collection data evidence as per Section 4.1 of the NABERS Waste Rules (Version 1.3 – February 2021) demonstrating details of each instance of individual bin collection. Where individual bin collection records are not available, alternative evidence must be provided, including:
  - Aggregated collection data, or,
  - Contract waste collection data, or,
  - Manually calculated estimates.

### 5.1.5 Other emissions

For any “Other scope 1, 2, & 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 non-quantifiable of emissions of staff travel and waste transport are not considered to be contentious).

### 5.1.6 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, evidence must be provided to verify compliance with the guidance for mixed-use buildings, specifically to demonstrate:

- 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,
- Evidence that verifies that the third party has a reasonable degree of operational control over that emissions source, such as:
  - As-built documentation
  - Operation & Maintenance manuals
  - Photos of equipment and control infrastructure
  - Billing records
  - Leases and other contractual agreements
  - Other written evidence describing operation

### 5.1.7 Carbon offsets

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:

- Name of the offset project and project description
- Quantity of offsets
- Offset type
- Offset serial numbers
- Offset registry
- Date of retirement
- 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.
- 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.

### Focus Questions

14) Are you in favour of the proposed changes?

15) Do you have any other feedback on the proposed changes?

16) Do you foresee any issues in obtaining the required documents and information as per the above?



## 6 Other updates

### 6.1 NABERS' proposed updates

This section outlines updates that are proposed by NABERS regarding the Carbon Neutral ratings.

#### 6.1.1 Offsets Paper

NABERS' reference to the Property Council of Australia offsets guide, as best practice – and seeking insights if there are any concerns with including this as guidance for best practice offset purchasing.

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](#)

#### 6.1.2 Timeline

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. As such, incomplete or inadequate information submitted by 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.

### 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 5 business days in advance of the deadline, and should be sent to [nabers@environment.nsw.gov.au](mailto:nabers@environment.nsw.gov.au) and detail the:

- Address of premises, NABERS rating number
- information that cannot be supplied in the required timeframe
- reason for the delay; and
- proposed date by which the information can be supplied.

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

### Focus Questions

17) Are you in favour of the proposed updates?

18) Do you have any other feedback on the proposed updates?



# Contact us

**NABERS is administered by the  
New South Wales Government**

4 Parramatta Square  
12 Darcy Street  
Parramatta NSW 2150

**T** (02) 9995 5000

**E** [nabers@environment.nsw.gov.au](mailto:nabers@environment.nsw.gov.au)

**W** [nabers.gov.au](http://nabers.gov.au)