



Ruling

# On-site Renewable Electricity Generation Systems

Version 1.1 – May 2021



Cover photo: Rooftop photovoltaic system in The Rocks, NSW

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# 1 Introduction

## 1.1 Summary

This document is a **Ruling** for the treatment of **On-site Renewable Electricity Generation (OREG) systems** and their subsequent **renewable electricity**. It provides guidance for **Assessors** where such systems are present.

## 1.2 Scope

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

Where a conflict between this **Ruling** and existing **Rules** is present, the requirements of this **Ruling** take precedence over the **Rules**.

This **Ruling** applies to any building type eligible for a NABERS rating using the NABERS Energy rating tool.

## 1.3 Alternative methodology

**Assessors** must comply with the **Ruling** unless prior approval has been sought and approved by the **National Administrator**.

Where appropriate, **Assessors** may contact the **National Administrator** for use of this **Ruling's** methodology in alternative applications, such as, on-site recycled water and rainwater systems. Prior approval is required and may be granted conditionally, on a case-by-case basis and at the **National Administrator's** discretion.

## 1.4 How to use this document

Text appearing **dark green and bold** is a defined term. Defined terms can be found either in Chapter 2 of this **Ruling** or in the Terms and definitions chapter of the *NABERS The Rules – Metering and Consumption*.

The following formatting conventions might appear in this text:

**Note:** Text appearing with a grey background is explanatory text only and is not to be read as part of the **Ruling** or is otherwise not essential for the proper use of this document.

## 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
<b>dedicated connection</b>	An <b>on-site renewable electricity generation system</b> which is connected to a single <b>end user</b> (see Figure 1).
<b>embedded network</b>	A private electricity network that is connected to the parent electricity network or 'grid'. <b>Note:</b> Most office buildings in Western Australia, South Australia and Queensland use embedded networks to supply tenants and the Base Building systems.
<b>end user</b>	A purpose or activity that energy is used for. <b>End users</b> may represent a different <b>rated premises</b> (e.g. tenancies and office Base Building, or multiple building types on a shared meter)
<b>NABERS rating input form</b>	The rating input form provided by the Scheme Administrator for use by <b>Assessors</b> in the calculation of accredited ratings.
<b>On-site Renewable Electricity Generation (OREG) system</b>	A system installed on the premises that generates <b>renewable electricity</b> .
<b>on-selling</b>	The supply of <b>renewable electricity</b> to an <b>end user</b> outside the scope of the <b>rated premises</b> . <b>Note:</b> For an office Base Building rating, an office tenancy or other <b>end user</b> located inside the building is considered to be outside the <b>rated premises</b> . The same principle applies for retail tenancies within a Shopping Centre, where the Shopping Centre is undertaking a NABERS rating.
<b>renewable electricity</b>	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. <b>Note:</b> If the <b>Assessor</b> would like other sources to be considered under this <b>Ruling</b> they should contact the <b>National Administrator</b> .
<b>shared connection</b>	An <b>on-site renewable electricity generation system</b> which is connected to multiple <b>end users</b> (see Figure 2.a and Figure 2.b).

# 3 On-site Renewable Electricity Generation (OREG) systems

## General

**Renewable electricity** generated for use within a building may be either—

- a) directly connected to the **rated premises** (i.e. a **dedicated connection**); or
- b) connected to multiple **end users** through a **shared connection**, such as, in an **embedded network**. In this **shared connection**, the **OREG system** may be situated before or after the **rated premises’** meter.

For examples of **OREG system** arrangements, see Figures 1, 2.a and 2.b.

**Renewable electricity** which is exported from the **rated premises** directly into the grid cannot be deducted from the **rated premises’** electricity consumption data.

**Renewable electricity** which is **on-sold** to other **end users** cannot be allocated.

## Dedicated connections

A **dedicated connection** refers to an **OREG system** connected to a single **end user**. The **renewable electricity** generated by the **OREG system** directly benefits this **end user** and the grid electricity supplied to the **rated premises** is reduced.

**Rated premises** which export **renewable electricity** to the grid must ensure the consumption data is clearly distinguishable between the grid energy imported and the **renewable electricity** exported. **Assessors** should contact the **National Administrator** if further guidance is required.

In an office Whole Building rating (i.e. the minimum energy coverage of both the office Base Building and all Tenancies), the **Assessor** may only apply the **dedicated connection** method.

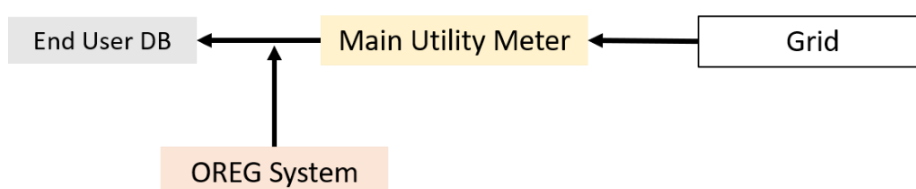


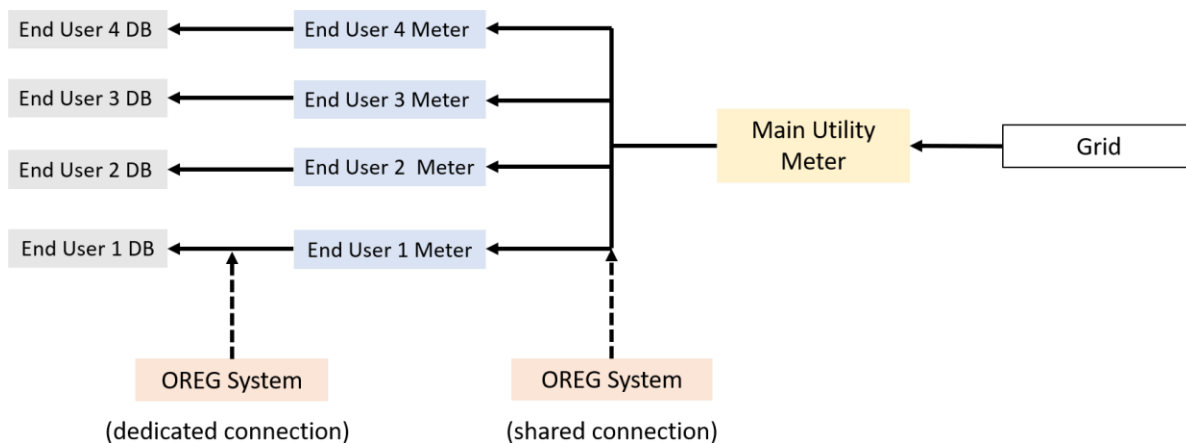
Figure 1: Example of a dedicated connection arrangement

## Shared connections

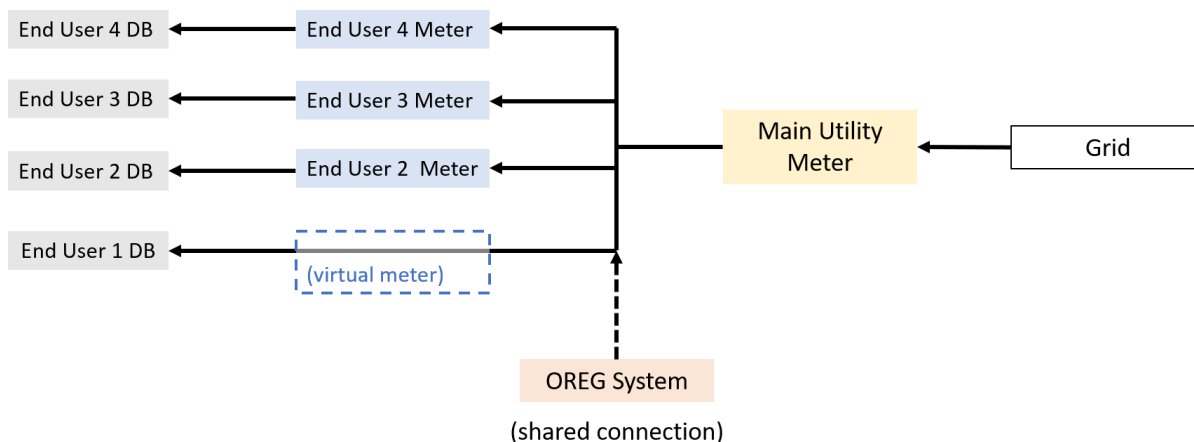
### 3.3.1 General

A **shared connection** is characterised by an **OREG system** feeding into a shared network, such as, an **embedded network** with multiple users downstream of the site’s utility meter (refer to Figures 2.a and 2.b).

Where a **shared connection** is exporting to the grid, this exported amount cannot be deducted from the **rated premises’** electricity consumption data.



**Figure 2.a: Arrangement with OREG systems connected to the shared network**



**Figure 2.b: Arrangement with an OREG system connected to the shared network with a virtual meter**

For a **shared connection**, the following priority listing for the allocation of **renewable electricity** must be followed:

- a) Allocation by claim.
- b) Allocation by proportional consumption.
- c) No allocation permitted.

These methods are outlined further in Sections 3.3.2 to 3.3.4 .

All **end users** within the **embedded network** must be adequately metered in accordance with *NABERS The Rules – Metering and Consumption*. Adequate metering and consumption data must be available (including the **OREG system**) to conduct an allocation.

**Note:** Other evidence may be used to determine the amount of **renewable electricity** generated by the **OREG system** (e.g. solar inverter data in lieu of metering data). Please contact the **National Administrator** if further information is required.

### 3.3.2 Allocation of renewable electricity by claim

Ownership of the **OREG system** must be substantiated and any **on-selling** of the **renewable electricity** to other **end users** accounted for.

The maximum permissible allocation of **renewable electricity** to the **end user** can be no more than the **end user's** consumption amount.

Where the **rated premises** is seeking to allocate by claim, the following criteria apply:

- a) The **rated premises** is adequately metered for each **end user** in the **embedded network**, as per the requirements of *NABERS The Rules – Metering and Consumption*. This includes having adequate metering and consumption data available for the **OREG system**.
- b) All meters meet validation requirements as stipulated in the *NABERS The Rules – Metering and Consumption*.
- c) There are no gaps or missing consumption data in the metering systems directly concerning the **OREG system**, the grid input and the **end user** for whom the allocation is made.

When making an allocation by claim, the **Assessor** must obtain the following:

- d) Written evidence that demonstrates which party owns the **OREG system**.
- e) Written evidence demonstrating—
  - 1) any contractual arrangements or evidence of payment which specify any **renewable electricity** on-sold to other **embedded network** users; or
  - 2) confirmation from the owner (or owner's representative) of the **OREG system** that there is no **on-selling** of **renewable electricity** to other users (a written statement on a company letterhead would suffice).

If the criteria in both (d) and (e) cannot be met, the **Assessor** must proceed to allocate the **renewable electricity** by proportional consumption.

**Note:** For entry into the NABERS Calculator, refer to Appendix B.

### 3.3.3 Allocation of renewable electricity by proportional consumption

Where ownership of the **OREG system** cannot be substantiated or the **on-selling** of **renewable electricity** to other users cannot be adequately accounted for, the **rated premises** must obtain the consumption data from all meters within the **embedded network** and proceed to the allocation by proportional consumption method.



When allocating **renewable electricity** by proportional consumption, **Assessors** must—

- a) obtain the total amount of annual **renewable electricity** generated on-site;
- b) exclude all **renewable electricity** which has been exported to the grid;
- c) determine respective electricity consumption of all **end users** in the **embedded network**; and
- d) allocate the **renewable electricity** generated to the **end users** by their respective proportion of the total electricity consumed at the premises.

If any of the steps in (a) to (d) above cannot be carried out, the **Assessor** must proceed without any allocation of **renewable electricity** to the **rated premises** (refer to Section 3.3.4).

Refer to Appendix A for an example of where the **Assessor** needs to calculate the proportional electricity consumption.

**Note:** For entry into the NABERS Calculator, refer to Appendix B.

### 3.3.4 No allocation permitted

Where proof of claim cannot be provided and consumption data from any sub-meter is missing, **renewable electricity** cannot be allocated to the **rated premises**. In this case, it is assumed that all electricity consumed is sourced from the grid.

## Battery storage

Where the **Assessor** identifies battery storage as present on-site and suspects further assistance is required for entry into the **NABERS rating input form**, they may contact the **National Administrator** for further guidance.

## Documentation requirements

**Assessors** must collect and retain the following evidence to demonstrate they meet the criteria under Section 3.2:

- a) Single line diagram or other evidence showing that the **OREG system** is directly connected to the **rated premises** and not shared with other **end users**.
- b) Documentation confirming any export of **renewable electricity** to the grid and that this exported amount has not been included in any allocation calculations set out in this **Ruling**.

**Assessors** must collect and retain the following evidence to demonstrate they meet the criteria under Section 3.3:

- c) Contract or agreement confirming ownership of the **OREG system**. This may include leasing agreements.
  - 1) Where such a document does not exist, the **Assessor** must provide written correspondence with the client/site confirming where ownership of the **OREG system** lies.

- d) Single line diagram or other evidence showing that the **OREG system** is directly connected to the same **shared connection** as the **end user** for which the **renewable electricity** is being allocated.
- e) Confirmation of any export of **renewable electricity** to the grid and that this exported amount has not been included in any allocation calculations set out in this **Ruling**.
- f) Contract or agreement confirming any **on-selling** arrangement(s) within the network. This may include Power Purchase Agreements (PPA) with **end users** within the network. Where such a document does not exist, the **Assessor** must either—
  - 1) provide evidence of payment. This can be in the form of invoices/bills where the amount of **renewable electricity** is clearly stipulated; or
  - 2) provide evidence from the **OREG system** owner that they do not on-sell the electricity.
- g) All electricity proportioning calculations.

**Assessors** remain responsible for the accuracy of their ratings and must collect and retain all documentation as per the **Rules**.

If an **Assessor** is uncertain of the evidence type, they should contact NABERS for further information in advance.

# Appendix A – Calculating the proportional electricity consumption

**Example:** A fully metered building is presented with the following:

- The electricity imported from the grid is 1,500 kWh;
- The metered electricity generated from the **OREG system** is 500 kWh; and,
- No **renewable electricity** is being exported to the grid and, as such, no deductions need to be made to the **renewable electricity** being allocated.

To determine the proportional allocation of **renewable electricity** to the Base Building, the **Assessor** must determine the consumption for each **end user**.

For **end user**, the metered electricity consumption is as follows:

End user	Metered electricity consumption (kWh)
Base Building (BB)	1,200
Tenant 1 (T1)	350
Tenant 2 (T2)	250
Tenant 3 (T3)	200

Determine all **end users'** respective proportion of electricity consumption:

$$BB_{Proportion} = \frac{BB_{electricity\ consumption}}{\sum_{electricity\ consumption} (BB + T1 + T2 + T3)}$$

$$BB_{Proportion} = \frac{1,200}{(1,200 + 350 + 250 + 200)}$$

$$\therefore BB_{Proportion} = 60\%$$

Therefore, 60 % (or 300 kWh) of the **renewable electricity** may be allocated to Base Building.

The respective tenancies would be allocated accordingly:

End user	Proportion (%)	Renewable electricity allocation (kWh)
Base Building (BB)	60	300
Tenant 1 (T1)	17.5	87.5
Tenant 2 (T2)	12.5	62.5
Tenant 3 (T3)	10	50

Therefore the respective net grid electricity consumption would be calculated as follows:

End user	Electricity consumption – renewable electricity allocation (kWh)	Net grid electricity consumption (kWh)
Base Building (BB)	1,200 – 300	900
Tenant 1 (T1)	350 – 87.5	262.5
Tenant 2 (T2)	250 – 62.5	187.5
Tenant 3 (T3)	200 – 50	150

# Appendix B – Input into the NABERS Calculator

## B.1 General

This Appendix provides guidance around input of the **OREG system** and allocated **renewable electricity to end users** in a **shared connection** (see Section 3.3).

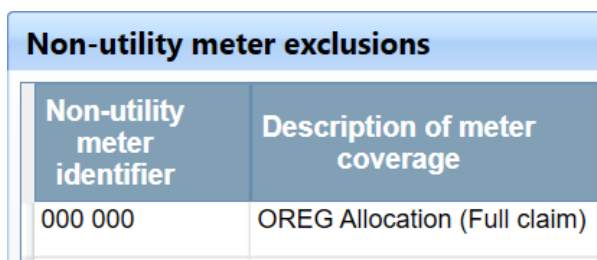
**Dedicated connections** (as per Section 0) are not expected to follow the processes outlined below due to their simpler wiring and consumption arrangements (refer to [Figure 1](#)). Should **Assessors** observe the need to enter the **OREG system** into the NABERS Calculator, a **dedicated connection** should follow the steps outlined in Section B.2 below, *Entry into NABERS Rate – Full Claim*.

**Note:** For further guidance or assistance, **Assessors** should contact the **National Administrator** at [nabers@environment.nsw.gov.au](mailto:nabers@environment.nsw.gov.au).

## B.2 Entry into NABERS Rate — Full claim

When entering the allocation as ‘full claim’ into the NABERS Calculator, **Assessors** must—

- enter the allocated amount as a ‘*non-utility meter exclusion*’ line item; and
- clearly identify the **OREG system** under the coverage description box (see Figure B.1):

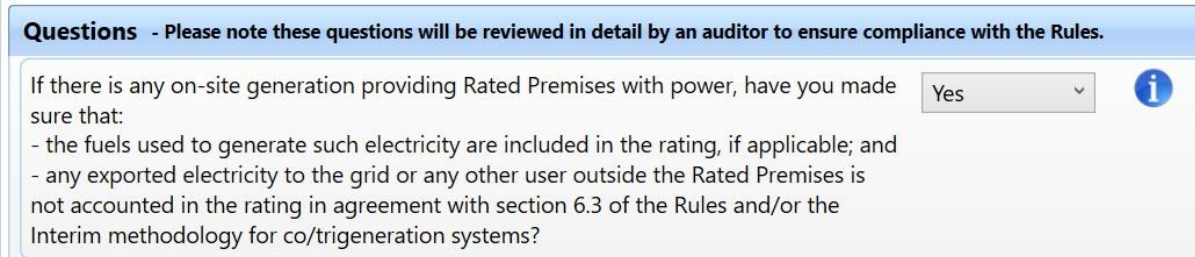


Non-utility meter exclusions	
Non-utility meter identifier	Description of meter coverage
000 000	OREG Allocation (Full claim)

**Figure B.1:** Screenshot of *non-utility meter exclusion* input

The allocated amount entered is the total renewable electricity generated by the **OREG system**, less the exported and on-sold amount(s).

Under the ‘*Energy Summary*’ tab, **Assessors** must answer ‘yes’ to the question regarding on-site generation providing the **rated premises** with power (see Figure B.2):



**Figure B.2: Screenshot of Energy Summary question regarding on-site generation**

### B.3 Entry into NABERS Rate — Proportional consumption

When entering the allocation as ‘proportional consumption’ into the NABERS Calculator, **Assessors** must—

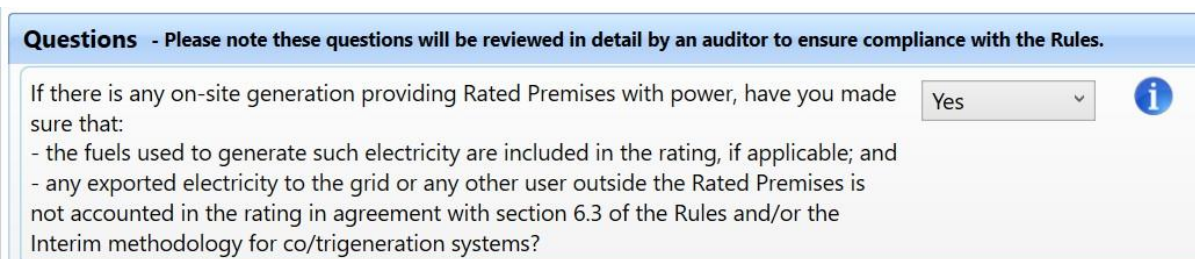
- enter the allocated amount as a ‘*non-utility meter exclusion*’ line item; and
- clearly identify the **OREG system** under the coverage description box, as well as the percentage factor associated with the allocated amount (see Figure B.3):

Non-utility meter exclusions	
Non-utility meter identifier	Description of meter coverage
000 000	OREG Allocation (25%)

**Figure B.3: Screenshot of non-utility meter exclusion input and percentage factor**

The allocated amount entered is the total **renewable electricity** generated by the **OREG system**, less the exported and on-sold amount(s), and multiplied by the percentage factor as provided in the coverage description box.

Under the ‘Energy Summary’ tab, **Assessors** must answer ‘yes’ to the question regarding on-site generation providing the **rated premises** with power (see Figure B.4):



**Figure B.4: Screenshot of Energy Summary question regarding on-site generation**

# Contact us

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