



Ruling

On-site Renewable Electricity Generation Systems

Version 1.1 – May 2021



Cover photo: Rooftop photovoltaic system in The Rocks, NSW

Published by

Department of Planning, Industry and Environment

4 Parramatta Square

12 Darcy Street

Parramatta NSW 2150

PO Box A290

Sydney South NSW 2000

Ph: (02) 9995 5000 (switchboard)

Ph: 131 555 (environment information and publications requests)

Fax: (02) 9995 5999

TTY: 133 677 then ask for 131 555

Speak and Listen users: 1300 555 727 then ask for 131 555

Email: nabers@environment.nsw.gov.au

Website: www.nabers.gov.au

Table of Contents

1	Introduction	1
1.1	Summary	1
1.2	Scope.....	1
1.3	Alternative methodology	1
1.4	How to use this document.....	1
2	Terms and definitions	2
3	On-site Renewable Electricity Generation (OREG) systems.....	3
3.1	General.....	3
3.2	Dedicated connections	3
3.3	Shared connections.....	4
3.3.1	General	4
3.3.2	Allocation of renewable electricity by claim	5
3.3.3	Allocation of renewable electricity by proportional consumption	5
3.3.4	No allocation permitted	6
3.4	Battery storage	6
3.5	Documentation requirements	6
	Appendix A – Calculating the proportional electricity consumption	8
	Appendix B – Input into the NABERS Calculator	10
B.1	General.....	10
B.2	Entry into NABERS Rate — Full claim.....	10
B.3	Entry into NABERS Rate — Proportional consumption	11

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

3 On-site Renewable Electricity Generation (OREG) systems

3.1 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.

3.2 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.

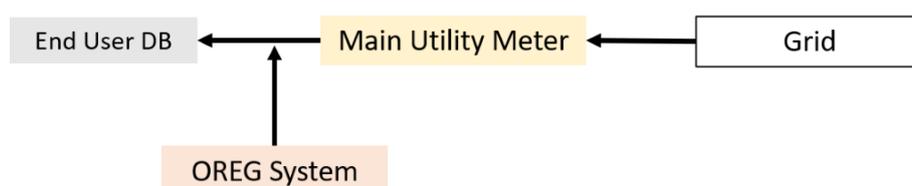


Figure 1: Example of a dedicated connection arrangement

3.3 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.

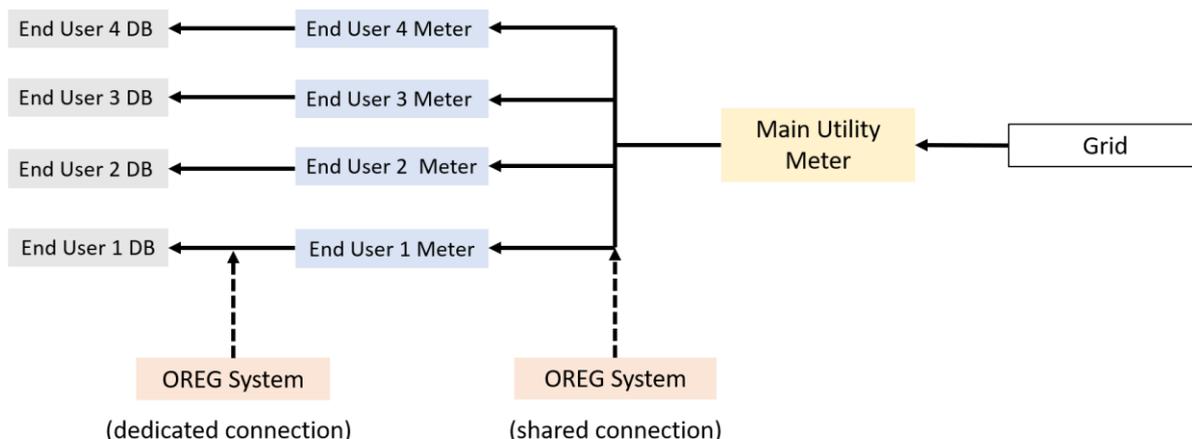


Figure 2.a: Arrangement with OREG systems connected to the shared network

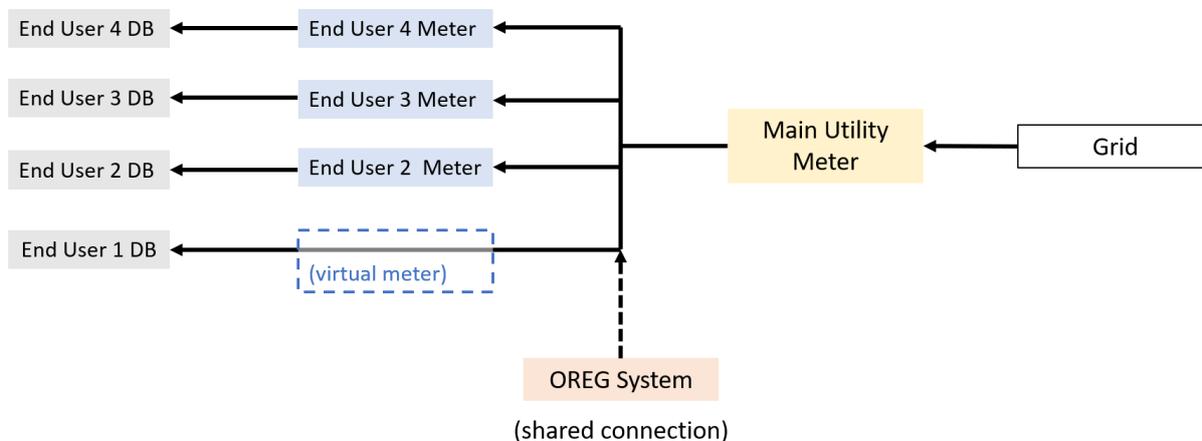


Figure 2.b: Arrangement with an OREG system connected to the shared network with a virtual meter

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.

3.4 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.

3.5 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	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).

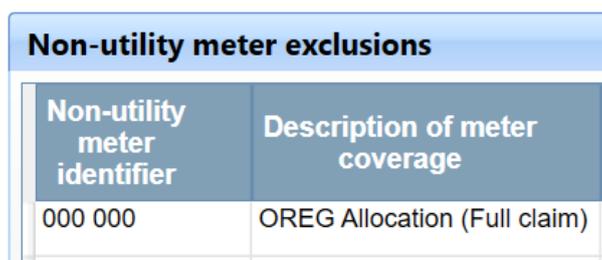
Dedicated connections (as per Section 0) are not expected to follow the processes outlined below due to their simpler wiring and consumption arrangements (refer to [Figure 1](#)). Should **Assessors** observe the need to enter the **OREG system** into the NABERS Calculator, a **dedicated connection**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

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):

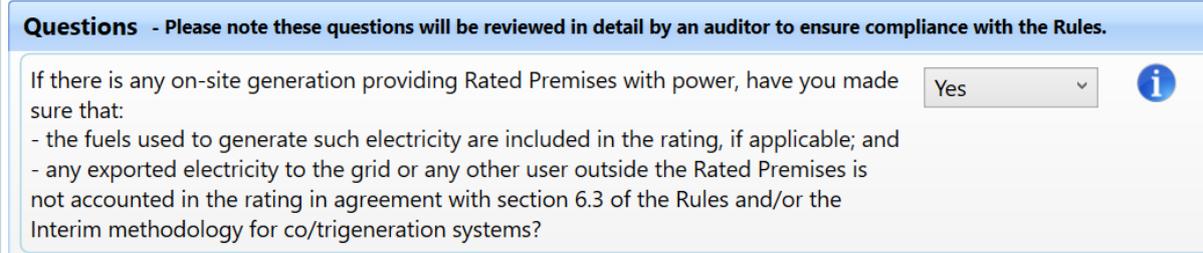


Figure B.2: Screenshot of Energy Summary question regarding on-site generation

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):

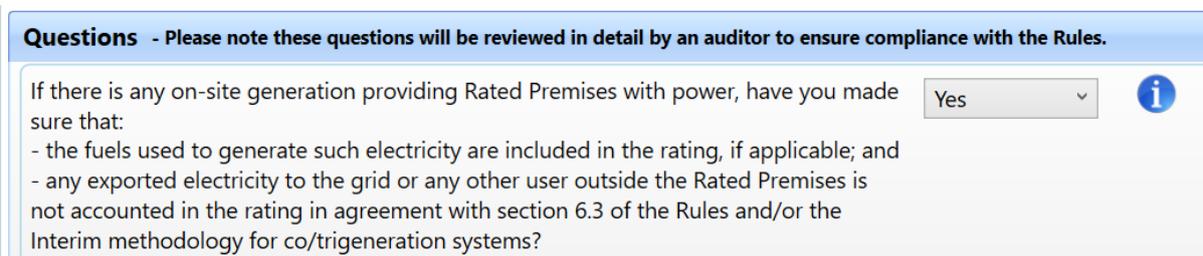


Figure B.4: Screenshot of Energy Summary question regarding on-site generation

Contact us

**NABERS is administered by the NSW
Department of Planning, Industry and Environment**

4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

T (02) 9995 5000

E nabers@environment.nsw.gov.au

nabers.gov.au