



Recognising uptake of renewable energy **Consultation Paper**

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

Published September 2021

Contents

1	Overview	3
2	Responding to this paper	4
3	The Future of NABERS Energy Project	5
3.1	Core objectives.....	5
3.2	Summary of changes.....	5
3.2.1	Update of NGA Emission Factors used in all NABERS Energy Ratings	5
3.2.2	NABERS to accept other forms of Renewable Electricity.....	5
3.2.3	Implement market-based carbon accounting.....	6
3.2.4	Introduce a Renewable Energy Indicator (REI)	6
3.2.5	Retire the NABERS Energy with GreenPower rating tool	6
4	Rewarding the use of renewable energy	8
4.1	GreenPower and NABERS	8
4.2	The Renewable Energy Indicator	9
4.2.1	Case Study 1: A building in NSW with no voluntary renewable energy purchase.....	9
4.2.2	Case Study 2: The same building in the ACT	10
4.2.3	Case Study 3: All electric building procuring 100 per cent renewables.....	10
4.2.4	Case Study 4: A building in QLD with onsite solar which also voluntarily retires LGCs 11	
4.3	Consultation.....	11
5	Appendix A.....	12
5.1	Update of NGA Factors	12
5.2	Consulting for a Net Zero Certification	13
6	Appendix B	14
6.1	Example 1 – A building with no voluntary renewable energy purchase	14
6.2	Example 2 – Same building in the ACT.....	14
6.3	Example 3 – Fully electric building.....	15
6.4	Example 4 – Building in QLD	15

1 Overview

The Future of NABERS Energy project is focused on adapting NABERS products to emerging energy trends. This is so that NABERS can continue to drive positive environmental outcomes in the built environment. These trends include:

- The decarbonisation of the electricity grid;
- An increase in the number of building owners committing to net zero targets;
- Changes in renewable energy procurement; and
- Market-based carbon accounting from the WRI's [Greenhouse Gas Protocol](#).

In line with these trends, the Future of NABERS Energy project has developed a strategy to accelerate the transition to energy efficient buildings running on 100 per cent renewable energy.

This strategy includes changes to NABERS Energy. Many of these changes have been consulted on previously and approved for adoption by the NABERS National Steering Committee (NSC). These have been included in this paper for reference.

This paper focuses on two additional proposed changes which have been developed in consultation with the NSC and industry:

- **Introduction of the Renewable Energy Indicator (REI):** This is a new element which will sit alongside certified energy ratings and will disclose a building's percentage of renewable energy use.
- **Retirement of NABERS with GreenPower:** Following the introduction of the REI, NABERS proposes the retirement of NABERS Energy with GreenPower. A significant number of stakeholders have indicated that this rating is confusing, and that it does not allow clear disclosure of renewable energy use. These are two issues which the REI will be designed to address.

Under these proposed changes, NABERS will be further incentivising the uptake of renewable energy in buildings.

This consultation paper seeks feedback on the retirement of the NABERS Energy with GreenPower rating tool. This proposed change has received strong support from stakeholders and industry bodies who were contacted in preparing this document but has not been the subject of broader consultation until now. We are keen to understand if the broader NABERS community supports the retirement of this tool. We are also interested in any unintended impacts that may arise and how they might be addressed.

Note that NABERS will continue to support and recognise the purchase of GreenPower. The GreenPower program is the only national, voluntary renewable energy accreditation program providing access to renewable energy for residential and business customers in Australia.

2 Responding to this paper

In responding to this paper please consider the core environmental goals of the NABERS Energy rating system, which include to:

- 1) Measure the energy efficiency and environmental impact of buildings;
- 2) Reward energy efficiency and low environmental impact;
- 3) Encourage a transition to net zero buildings, including the procurement of renewable energy; and
- 4) Be technology neutral and accessible to all buildings.

Feedback can be provided to NABERS using the [response form](#). Once completed please save it in word format (.docx) and email it to nabers@environment.nsw.gov.au by close of business Monday 25th October 2021.

This is a public consultation process, where we intend to reach as many members of the NABERS community as possible. As such, this paper can be forwarded to anyone else who you think it might be relevant to.

If you have questions you can contact:

Clemente Allende (Technical Projects Manager)

clemente.allende@environment.nsw.gov.au

02 9995 6638

3 The Future of NABERS Energy Project

3.1 Core objectives

As part of the Future of NABERS Energy project, NABERS sought to address questions such as:

- 1) How can NABERS provide recognition for energy efficient buildings running on 100 per cent renewable energy?
- 2) How can NABERS further encourage and drive increased demand for renewable energy?
- 3) How can the NABERS Energy rating tool align to the Greenhouse Gas Protocol's market-based carbon accounting method?

NABERS has done extensive stakeholder consultation based on these questions, and as a result identified the following objectives for this project. These have been approved by the NABERS National Steering Committee (NSC):

- **Objective 1:** Accelerate the transition to energy efficient buildings running entirely on renewable energy.
- **Objective 2:** Enable policy creation that can drive this transition.
- **Objective 3:** Influence a broad market share to lead this transition.

These objectives have driven several changes to NABERS Energy. Most of these changes have been consulted on previously and are included in this paper for reference.

3.2 Summary of changes

NABERS has undertaken extensive consultation on the changes outlined below through different channels, including last year's [public consultation](#). Most of them have already been approved by the NABERS National Steering Committee.

3.2.1 Update of NGA Emission Factors used in all NABERS Energy Ratings

This change was implemented on 1 July 2021. More information can be found in Appendix A.

3.2.2 NABERS to accept other forms of Renewable Electricity

NABERS will accept other forms of procured renewable electricity, in addition to GreenPower.

Initially NABERS will accept renewable energy attached to Large-Scale Generation Certificates (LGCs) as issued by the Australian Government's Clean Energy Regulator. Other forms of renewable energy will also be considered for acceptance as they mature in the market and an appropriate accreditation becomes available.

This change will be implemented in conjunction with the introduction of the Renewable Energy Indicator.

3.2.3 Implement market-based carbon accounting

The 'market-based method' is an official methodology under the World Resources Institute's Greenhouse Gas Protocol and ISO 14064.

A market-based approach enables businesses to accurately reflect the emissions resulting from their electricity choices and contracts, such as from Power Purchase Agreements. It facilitates transparent reporting of all electricity sources and contracts while minimising the chance of under or over reporting of renewable energy.

Market-based carbon accounting will be applied to the recognition of renewable energy through the REI. This means that:

- The electricity grid has a portion of renewable energy which all users pay for through the federally mandated Renewable Energy Target. This portion will now be recognised by NABERS.
- NABERS will recognise LGCs retired by governments on behalf of consumers. This means that electricity consumption in the ACT, for example, will be accounted for as zero emissions.
- Energy generated from on-site solar systems will only be recognised as renewable energy where either:
 - No LGCs are generated; or
 - LGCs generated are surrendered and allocated to the premises being rated.

Note that changes based on Market-based carbon accounting will not impact the NABERS Energy star rating result.

3.2.4 Introduce a Renewable Energy Indicator (REI)

The REI will allow NABERS to provide clear indicators of both energy efficiency (through the current star rating) and renewable energy use (through the REI).

NABERS initially proposed the development of a Net Zero certification. Consultation with industry determined this would not drive the objectives of the Future of NABERS Energy project.

A clear display of the percentage of renewable energy consumed by the building instead emerged as a better way to achieve the objectives. This percentage is now called the Renewable Energy Indicator (REI) and has received strong support from market leaders participating in early testing of this indicator, as well as the NSC.

More information on the net zero certification decision can be found in Appendix A. More information on the REI and how it will be calculated can be found in Appendix B.

3.2.5 Retire the NABERS Energy with GreenPower rating tool

Following significant stakeholder feedback, and its redundancy once the REI is introduced, NABERS is proposing to retire this rating tool. This public consultation is being undertaken to confirm this proposal is supported by the broader NABERS community, and to uncover any unintended consequences or transitional arrangements needed in retiring this tool.

If adequate support is obtained from this consultation, NABERS will seek approval from the NSC to move forward with the retirement of this tool. In such case, transitional arrangements would be put in place to provide sufficient time for NABERS participants to adapt to this change.

4 Rewarding the use of renewable energy

4.1 GreenPower and NABERS

NABERS has historically rewarded the use of renewable energy in buildings by recognising the purchase of GreenPower, a government accredited renewable energy product.

For buildings procuring GreenPower, NABERS currently provides two energy star rating results:

- 1) A NABERS Energy star rating **without** GreenPower.
- 2) A NABERS Energy star rating **with** GreenPower.

If a building achieves a 4-star NABERS Energy rating and does not buy any GreenPower, it will also achieve a 4-star NABERS Energy with GreenPower rating. However, if GreenPower is purchased, the building will obtain a higher NABERS Energy with GreenPower rating.

Around 10 per cent of all office energy ratings certified in FY19-20 procured some quantity of GreenPower.

Whilst the tool has achieved success in rewarding the uptake of renewable energy, stakeholders have expressed concerns with continued use in its current form:

- 1) The NABERS Energy with GreenPower rating tool does not align with market-based carbon accounting, leading to double counting and leaving it out of step with other measures of emissions reporting such as the Climate Active Carbon Neutral standard; and
- 2) The use of two star ratings is confusing; the design of the tools means that the voluntary purchase of GreenPower is being equated with the energy efficiency performance of a building.

NABERS tested renaming and reworking the communication of the tool, but stakeholder feedback was clear that this was not an adequate solution. Instead, stakeholders during an earlier testing phase expressed a strong preference that NABERS adopt the Renewable Energy Indicator as an alternative to communicate renewable energy consumption.

Note that NABERS will continue to support and recognise the purchase of GreenPower alongside other forms of renewable energy procurement. The National GreenPower Accreditation Program provides the highest standard for renewable energy because of its two-tier auditing system.

4.2 The Renewable Energy Indicator

The Renewable Energy Indicator (REI) is a percentage figure which shows how much energy used by a building comes from renewables. It has the following features:

- It is disclosed with every NABERS Energy rating but does not change the star rating result.
- The total rated energy used by the building will be represented by 100 per cent. All sources of energy will be converted into a kWh scale, and renewable energy will be represented by a portion of this percentage (capped at 100 per cent).
- The calculation method used will align with market-based carbon accounting described in the GHG Protocol guidance (also used as the Climate Active Carbon Neutral standard). This means the REI will recognise the contribution of renewable energy delivered to the building via the Australian Government’s Renewable Energy Target (RET). Buildings will no longer need to buy renewable electricity for the portion of the grid captured by the RET.
- The REI will recognise GreenPower purchases alongside other forms of offsite renewable energy procurement. This includes renewable energy delivered as part of state/jurisdictional targets that are based on generation and retirement of LGCs.

As a result, NABERS will provide:

- 1) An energy efficiency performance indicator; the current NABERS Energy star rating; and
- 2) A renewable energy indicator through a renewable energy percentage.

An example of how this might look is shown below. Note that this is a draft mockup only.



The following case studies illustrate how the REI will work in practice. A further breakdown of the calculations for each of the examples can be found in Appendix B.

4.2.1 Case Study 1: A building in NSW with no voluntary renewable energy purchase

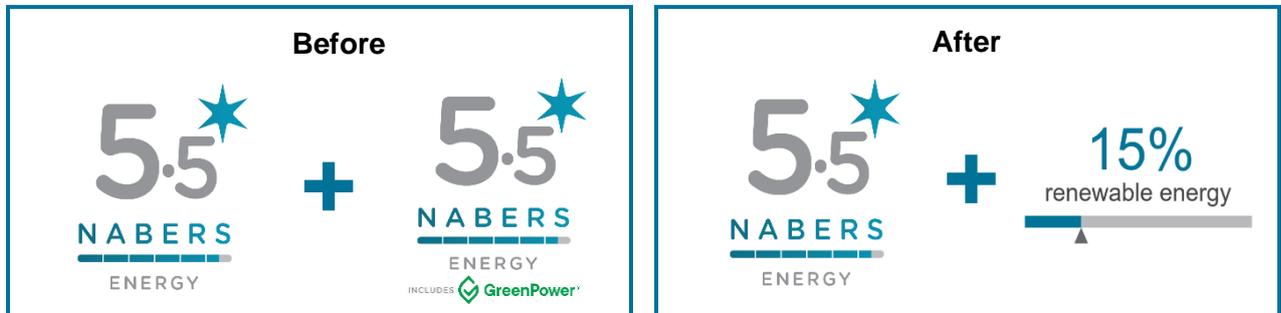
This case study shows how the Renewable Energy Indicator will be displayed for a building with no voluntary renewable energy purpose.

In this case we have chosen a property in NSW that consumes electricity, gas and diesel. The building has no onsite generation and has not purchased any renewable energy.

Currently this building receives a 5.5-star NABERS Energy rating. As they do not procure any GreenPower, they also receive a 5.5-star NABERS Energy with GreenPower rating.

Under the proposed changes, the building will be recognised for their contribution to the Renewable Power Percentage (RPP) from the RET, which will be added to their renewable energy consumption.

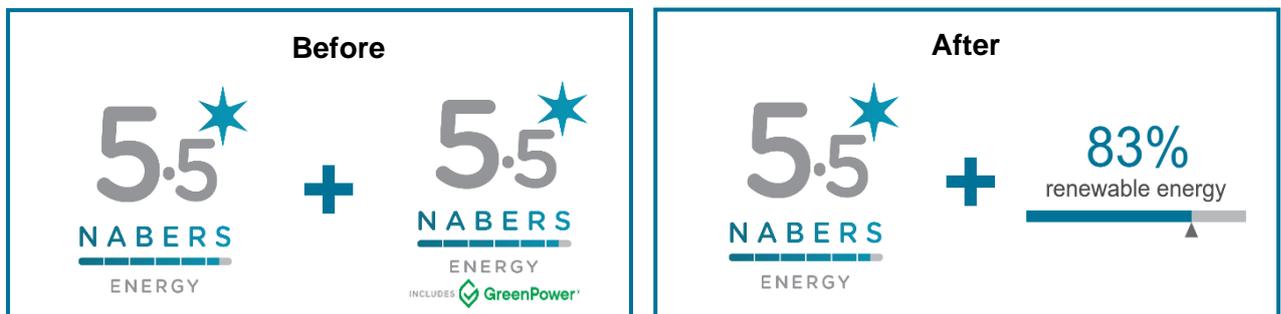
This figure is then compared with the total energy consumption of the building (including diesel and gas) to calculate the Renewable Energy Indicator. In this case, the REI is 15 per cent.



4.2.2 Case Study 2: The same building in the ACT

If the same building was in the ACT, their Renewable Energy Indicator would be different. This is because the ACT also procures LGCs for all electricity consumed within the territory. This means all electricity consumed in the ACT is renewable.

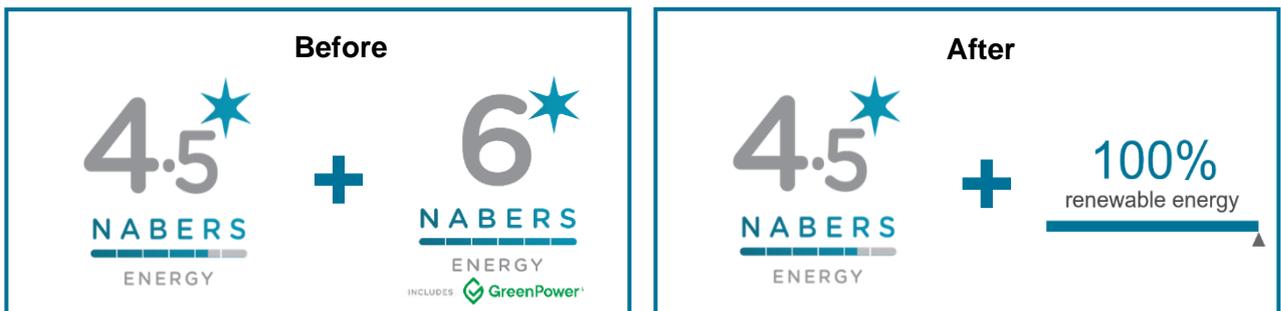
The total renewable electricity percentage for this rating will be 100 per cent. Note, however, that this is only the buildings electricity use and not its entire energy use. Once gas and diesel are included, the REI is calculated to be 83 per cent.



4.2.3 Case Study 3: All electric building procuring 100 per cent renewables

In this case study an all electric building purchases 100 per cent renewable energy. Currently this building receives two ratings, a 4.5 star NABERS Energy and a 6 stars NABERS Energy with GreenPower.

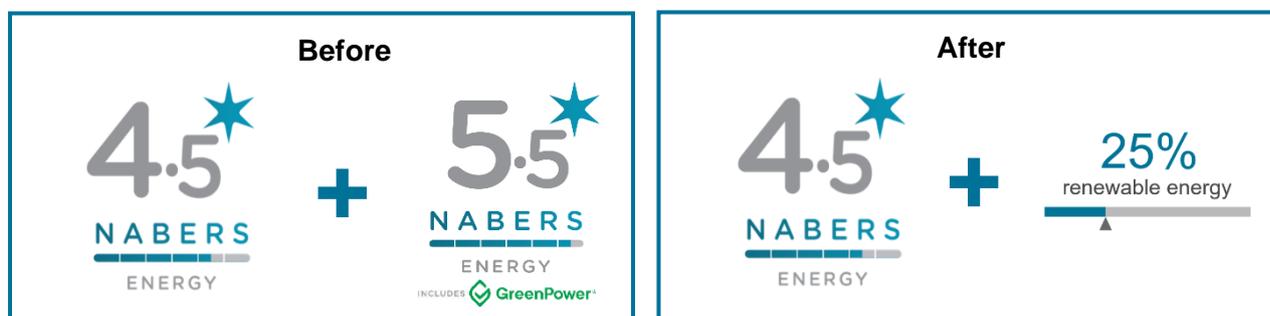
Under the new scheme the building will continue to receive a 4.5 star NABERS rating, but it will also now receive a REI of 100 per cent.



4.2.4 Case Study 4: A building in QLD with onsite solar which also voluntarily retires LGCs

A property in QLD purchases 10 per cent GreenPower and voluntarily retires 100 LGCs.

This figure is compared with the total energy consumption of the building (including diesel and gas) to calculate the renewable energy indicator. In this case, the REI is 25 per cent.



* The above results are for illustration purposes only. Actual results will be different for each building, depending on its features and energy performance.

** The graphical representation used here are draft mock-ups. The final design will be produced at a later stage.

4.3 Consultation

NABERS is seeking feedback on the implementation of these changes.

Focus Questions

- 1) Have you been using the NABERS Energy with GreenPower? How have you been using this tool?
- 2) Do you support retiring the NABERS Energy with GreenPower rating tool? Why/why not?
- 3) What are the consequences of retiring this tool? Are these mitigated by the introduction of the Renewable Energy Indicator?
- 4) Would a transition phase where the NABERS Energy with GreenPower rating is still included in the Rating Report (and not as a separate rating certificate) be useful to mitigate these risks? If so, how long should this transition be?
- 5) Do you have any other feedback or suggestions that could help in the success of this implementation?

5 Appendix A

5.1 Update of NGA Factors

Buildings can range from being fully electric, to being partly (or even mostly, when cogeneration is used) powered by natural gas and other fuels. NABERS Energy uses the National Greenhouse Accounts (NGA) emissions factors to compare buildings that use different mixes of energy sources. These NGA factors establish the greenhouse gas emissions linked to the consumption of a unit of energy and are published yearly by the Commonwealth Government.

Up until 1 July 2021, NABERS Energy ratings were calculated using the NGA factors published in 1998 from when the rating tool was first developed. NABERS had made the conscious decision to keep using the 1998 NGA factors for the calculation of star ratings, rather than updating them on an ongoing basis. The reasons for this decision include the following:

- 1) The star ratings bands are at set and predictable thresholds;
- 2) Buildings can track performance year-on-year; and
- 3) Targets for improvement can be set many years into the future.

Since the development of the NABERS Energy rating tool, the production of electricity in Australia has evolved and renewable energy generation has increased. This has resulted in a trend towards the decarbonisation of the electricity grid, and reduced NGA factors for electricity in most Australian states and territories.

If NABERS would have continued to use the 1998 NGA factors to calculate ratings, it would likely be driving undesirable outcomes. A prominent example of this can be seen in South Australia, where the NGA factors for electricity have dropped significantly over the past decade. Because they are powered entirely by electricity and are very efficient, heat pumps have increasingly become a lower-carbon solution for heating in buildings in South Australia. However, because NABERS uses 1998 emission factors, the increasing environmental benefits of heat pumps and other full-electric technologies do not translate into better rating results. Stakeholders have pointed out that if no changes were made, NABERS would artificially have been rewarding buildings using fossil fuel technologies (e.g. gas boilers), while unfairly penalising buildings with all-electric technologies.

This issue goes against NABERS' purpose of reducing the environmental impact of buildings. Artificially rewarding fossil-fuel over all-electric technologies also jeopardises the technology neutrality principle of NABERS. For these reasons, NABERS determined that changes were needed to address these issues.

On 1 July 2021 NABERS updated all NABERS Energy tools to use the latest NGA Emissions Factors to calculate ratings. This change will ensure that the NABERS Energy tool accurately takes into account the decarbonisation of the grid. The NGA factors will be updated every five years with the next update scheduled for 2025. These changes are implemented in a way that does not affect the average rating of the sector at that time.

To support building owners in understanding the impact of this change NABERS released prediction tools to gauge the impact on individual assets. The tool includes forecasted scenarios estimating the impact on ratings in 2025 and 2030, and can be accessed here.

These updates have been made in consultation with our Technical Working Group and through our public consultation process.

5.2 Consulting for a Net Zero Certification

Back in May 2020, NABERS released public consultation on the possibility of introducing a net zero emissions recognition as a result of a request from various Property Council Australia (PCA) and Technical Working Group (TWG) members.

NABERS has also engaged priority stakeholders during the past year to validate the value proposition of a net zero certification. Priority stakeholders included property market leaders, leading industry associations and government representatives.

The majority of feedback, including market leaders, indicated that there is not an immediate need for a NABERS net zero certification. This is largely because most companies already have targets for electrification, renewable energy procurement and zero carbon fuels. A NABERS net zero certification will likely not drive any further action on accelerating towards net zero emissions.

Additionally, stakeholders raised substantial challenges in achieving net zero today. It is likely then that a large share of the market would be unable to participate in a NABERS net zero certification. This increases the risks of low uptake and no additional behaviour change from stakeholders.

Industry associations expressed concern that a NABERS net zero certification could discourage building owners from improving energy efficiency performance and instead focus solely on driving buildings towards renewable energy and offsets procurement.

NABERS also consistently identified concerns around the definition of net zero. There were also concerns around the co-existence of NABERS net zero certification and Climate Active Carbon Neutral certification.

The objectives NABERS was essentially trying to achieve with the net zero certification were those outlined in Section 3.1:

- **Objective 1:** Accelerate transition to energy efficient buildings running entirely on renewable energy.
- **Objective 2:** Enable policy creation that can drive this transition.
- **Objective 3:** Influence a broad market share to lead this transition.

NABERS has used this feedback to develop the REI which instead will be integrated in the NABERS product range, as described in Section 5.4.2.

6 Appendix B

The below provides a more detailed breakdown of the worked examples provided in Section 3.3.

6.1 Example 1 – A building with no voluntary renewable energy purchase

A	Renewable energy generated on-site (<100kW solar system)	0 kWh
B	Renewable energy generated on-site (>100kW solar system) no LGCs created	0 kWh
C	Renewable electricity from RET	927,000 kWh
D	State jurisdiction renewable energy	0 kWh
E	GreenPower in Rating Period	0 kWh
F	Retired LGCs associated to Rating Period consumption	0 kWh
G	Total Renewable Energy (A+B+C+D+E+F)	927,000 kWh
H	Rated Electricity	5,000,000 kWh
I	Renewable energy generated on-site (system < 100kW)	0 kWh
J	Renewable energy generated and consumed on-site (system > 100 kW)	0 kWh
K	Total Rated Electricity (H+I+J)	5,000,000 kWh
L	Total Rated Gas	3,600,000 MJ
M	Total Rated Diesel	1,000 L
N	Total Rated Energy (K+L+M)	6,010,722 kWh
O	Renewable Electricity Percentage (G/K * 100)	18.54 %
P	Renewable Energy Indicator result (G/N * 100)	15 %

6.2 Example 2 – Same building in the ACT

A	Renewable energy generated on-site (<100kW solar system)	0 kWh
B	Renewable energy generated on-site (>100kW solar system) no LGCs created	0 kWh
C	Renewable electricity from RET	927,000 kWh
D	State jurisdiction renewable energy	4,073,000 kWh
E	GreenPower in Rating Period	0 kWh
F	Retired LGCs associated to Rating Period consumption	0 kWh
G	Total Renewable Electricity (A+B+C+D+E+F)	5,000,000 kWh
H	Rated Electricity	5,000,000 kWh
I	Renewable energy generated on-site (system < 100kW)	0 kWh
J	Renewable energy generated and consumed on-site (system > 100 kW)	0 kWh
K	Total Rated Electricity (H+I+J)	5,000,000 kWh
L	Total Rated Gas	3,600,000 MJ
M	Total Rated Diesel	1,000 L
N	Total Rated Energy (K+L+M)	6,010,722 kWh
O	Renewable Electricity Percentage (G/K * 100)	100 %
P	Renewable Energy Indicator result (G/N * 100)	83 %

6.3 Example 3 – Fully electric building

A	Renewable energy generated on-site (<100kW solar system)	1,000,000 kWh
B	Renewable energy generated on-site (>100kW solar system) no LGCs created	0 kWh
C	Renewable electricity from RET	927,000 kWh
D	State jurisdiction renewable energy	0 kWh
E	GreenPower in Rating Period	0 kWh
F	Retired LGCs associated to Rating Period consumption	100,000 kWh
G	Total Renewable Energy (A+B+C+D+E+F)	2,027,000 kWh
H	Rated Electricity	4,000,000 kWh
I	Renewable energy generated on-site (system < 100kW)	1,000,000 kWh
J	Renewable energy generated and consumed on-site (system > 100 kW)	0 kWh
K	Total Rated Electricity (H+I+J)	5,000,000 kWh
L	Total Rated Gas	0 MJ
M	Total Rated Diesel	0 L
N	Total Rated Energy (K+L+M)	5,000,000 kWh
O	Renewable Electricity Percentage (G/K * 100)	100 %
P	Renewable Energy Indicator result (G/N * 100)	100 %

6.4 Example 4 – Building in QLD

A	Renewable energy generated on-site (<100kW solar system)	0 kWh
B	Renewable energy generated on-site (>100kW solar system) no LGCs created	0 kWh
C	Renewable electricity from RET	927,000 kWh
D	State jurisdiction renewable energy	0 kWh
E	GreenPower in Rating Period	500,000 kWh
F	Retired LGCs associated to Rating Period consumption	100,000 kWh
G	Total Renewable Energy (A+B+C+D+E+F)	1,527,000 kWh
H	Rated Electricity	5,000,000 kWh
I	Renewable energy generated on-site (system < 100kW)	0 kWh
J	Renewable energy generated and consumed on-site (system > 100 kW)	0 kWh
K	Total Rated Electricity (H+I+J)	5,000,000 kWh
L	Total Rated Gas	3,600,000 MJ
M	Total Rated Diesel	1,000 L
N	Total Rated Energy (K+L+M)	6,010,722 kWh
O	Renewable Electricity Percentage (G/K * 100)	30.54 %
P	Renewable Energy Indicator result (G/N * 100)	25 %

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