IPART

Independent Pricing and Regulatory Tribunal
New South Wales

NABERS Baseline

Method Guide

Energy Savings Scheme

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V3.0	Updated to reflect amendments to the ESS Rule and to incorporate information previously found in the Evidence Manual	November 2016
V3.1	Updated to reflect amendments to the ESS Rule	May 2017

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1 About this document

The NSW Energy Savings Scheme (**ESS**) seeks to reduce energy consumption in NSW by creating financial incentives for organisations to invest in energy saving projects.

The other objects of the ESS are to:

- assist households and businesses to reduce energy consumption and energy costs
- make the reduction of greenhouse gas emissions achievable at a lower cost, and
- reduce the cost of, and need for, additional energy generation, transmission and distribution infrastructure.[1]

Electricity retailers and other mandatory participants (**Scheme Participants**) are obliged to meet energy saving targets. Energy savings can be achieved by installing, improving or replacing energy saving equipment. Persons that become Accredited Certificate Providers (**ACPs**) can create energy savings certificates (**ESCs**) from these activities and then sell those ESCs to Scheme Participants. The Independent Pricing and Regulatory Tribunal of NSW (**IPART**) is both the Scheme Administrator and Scheme Regulator of the ESS.[2]

This document provides guidance about how the NABERS baseline sub-method (**NABERS method**) of the ESS operates, some of the key requirements that must be met when using the method, and how to calculate energy savings for a Recognised Energy Saving Activity (**RESA**) and create ESCs. This document should be used by:

- applicants seeking accreditation as a certificate provider, to assist them in completing their application,[3] and
- those persons who are already ACPs, to assist them in accurately calculating energy savings using this method.

1.1 Legislative requirements

This document is a guide only and is not legal advice. The legal requirements for ACPs participating in the ESS are set out in:

- Part 9 of the *Electricity Supply Act 1995* (**Act**)
- Part 6 of the *Electricity Supply (General) Regulation 2014* (**Regulation**), and
- the *Energy Savings Scheme Rule of 2009* (**ESS Rule**).

1 *Electricity Supply Act 1995*, section 98(2)
2 *Electricity Supply Act 1995*, sections 153(2) and 151(2)
3 A full explanation of the application process is provided in the Application Guide www.ess.nsw.gov.au/How_to_apply_for_accreditation/The_application_process. Please ensure you read this document and the Application Guide in full before applying for accreditation.

ACPs are also required to meet any additional accreditation conditions as set out in their Accreditation Notice.

2 Method overview

The NABERS method provides a way to calculate and create ESCs that reflect the energy savings resulting from the improvement in a NABERS rating for a building.[4] The baseline is determined by the Benchmark NABERS Rating, which can either be determined from:

- a previous NABERS rating, or
- the Benchmark NABERS Rating table[5] in the ESS Rule (this must be used where no previous NABERS rating exists for the building).

The NABERS method provides NABERS rating holders with an incentive to improve the energy performance of their buildings through the use of more energy efficient equipment and/or improved building management.

3 Requirements that must be met

The information below is guidance about the requirements of the method. This is not an exhaustive list of requirements, and you should ensure that you are familiar with your obligations under the Act, Regulation, ESS Rule and any conditions of your accreditation.

3.1 Energy saver

An ACP can only calculate energy savings and create ESCs if the ACP is the 'energy saver' under the ESS Rule. The ACP must be the energy saver as at the implementation date. An energy saver can be either:

- **the original energy saver** – which, under the NABERS method, is the person or company specified on the NABERS rating certificate for the building being used to calculate energy savings, as issued by the NABERS National Administrator, or
- **the nominated energy saver** – which is someone the original energy saver has nominated as the energy saver by completing a Nomination Form.[6]

An ACP that is the original energy saver must be accredited as an ACP **prior to** the implementation date in order to create ESCs from an implementation.

4 NABERS is the National Australian Built Environment Rating System. It is managed nationally by the NSW Office of Environment and Heritage, on behalf of Commonwealth, state and territory governments. For more information refer to: https://www.nabers.gov.au/

5 *ESS Rule*, Table A20

6 Available at: www.ess.nsw.gov.au/Accredited_Certificate_Providers/Templates

An ACP that is a nominated energy saver must:

- be **accredited** as an ACP **prior to** the implementation date and before the nomination is made,[7]
- have a documented procedure for obtaining the nomination from the original energy saver, and
- be **nominated** by the original energy saver **on or before** the implementation date. The nomination is taken to occur on the date that the nomination form is signed by the original energy saver.

3.2 Implementation and implementation date

The ESS Rule defines 'implementations' and 'implementation dates' (explained below). These concepts are used to determine the number of ESCs, and from when they can be created.

3.2.1 Implementation

An implementation is the delivery of an energy saving activity (called a '**RESA**' in the ESS Rule)[8] at a site. Under the NABERS method, this is when new NABERS ratings are achieved.

An implementation under the NABERS method is enabled by a NABERS rating for a building through any of the following NABERS tools:

- NABERS for Offices (base building, tenancy, or whole building)
- NABERS for Hotels
- NABERS for Shopping Centres
- NABERS for Data Centres (IT equipment, infrastructure, or whole facility), or
- NABERS for Hospitals.

3.2.2 Implementation date

For ACPs that use the NABERS method, the implementation date is the end date of the first NABERS rating period for which you intend to calculate energy savings for a particular building. This date appears on the NABERS rating certificate and establishes the date from which the ACP can create ESCs in relation to that building.

For example, a NABERS tenancy rating at a building would have a different implementation date to a base building NABERS rating if the end date of the first NABERS rating period is different for each (refer Box 3.1 below).

7 The ESS website provides information on applying to become an ACP at: www.ess.nsw.gov.au/How_to_apply_for_accreditation.

8 A RESA must meet all of the criteria set out in clause 5.3 and 5.4 of the ESS Rule.

Box 3.1 Example

An ACP wishes to calculate energy savings for the following buildings when there is an improved NABERS rating:

Site 1 – first NABERS rating period of 1/1/2014 to 31/12/2014. Therefore, the implementation date is 31/12/2014.

Site 2 – first NABERS rating period of 10/1/2014 to 9/1/2015. Therefore, the implementation date is 9/1/2015.

3.3 Eligible buildings

A building is eligible for the NABERS method if the building:

- is located in NSW, and
- has a NABERS rating, or will have a NABERS rating, issued by the NABERS National Administrator **before** calculating energy savings.

3.4 Calculation-specific eligibility requirements

The NABERS method uses a benchmark NABERS rating to calculate the benchmark (baseline) energy consumption for a NABERS building.

The NABERS method provides two calculation methods to calculate the benchmark NABERS rating:

- **Calculation method 1**: look up the benchmark NABERS rating in Table A20 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide) for the minimum NABERS rating that can be used as a baseline where:
  - no previous NABERS rating exists for the building, or
  - this is the ACP's preferred method.
- **Calculation method 2**: this calculation is based on a previous NABERS rating for the building.

Each of these calculation methods has specific eligibility requirements that must be met as outlined below.

Both calculation methods require the ACP to use the NABERS rating for the current rating year to establish the benchmark. The current rating year is the year for which ESCs will be created, and is the year that the rating period ended for the NABERS rating. For example, if the NABERS rating period is 10/1/2014 to 10/1/2015, the current rating year is 2015.

3.4.1 Calculation method 1 – benchmark NABERS rating index

Calculation method 1 provides a benchmark NABERS rating from Table A20 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide). This is determined from the relevant NABERS rating tool, building category and current rating year and is to be used where no previous NABERS rating exists, or where this is the ACP's preferred method.

To use this calculation method, the NABERS rating must:

1. for the first Rating Period, be at least 0.5 stars greater than the benchmark NABERS rating listed in Table A20 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide) for the relevant NABERS rating tool, building category and current rating year, and
2. for subsequent Rating Periods, exceed the benchmark NABERS rating used for the first Rating Period by at least 0.5 stars.

Record the benchmark NABERS rating from Table A20 that you use for the first Rating Period. This will be used to test the ongoing eligibility of a NABERS building to use calculation method 1 for subsequent Rating Periods. Note that if you have a NABERS building for which ESCs were created prior to 15 April 2016, the benchmark NABERS rating for the first Rating Period should be set using table A20 in Schedule A of the current Rule. If the NABERS rating period ended in 2015, use the 2015 numbers in Table A20. If the rating period ended in 2016, use the 2016 numbers in Table A20, and so on.

3.4.2 Calculation method 2 – historical baseline NABERS rating

Calculation method 2 uses a fixed historical baseline NABERS rating to calculate the benchmark NABERS rating. The historical baseline NABERS rating is a previous NABERS rating for the same NABERS building and similar configuration (for example, with similar metering arrangements and on-site energy generation).

To be eligible to use this method, the historical baseline NABERS rating must meet a number of criteria:

- the current NABERS rating must be at least one star greater than the historical benchmark NABERS rating
- the end date of the historical baseline NABERS rating must be no more than seven years prior to the end date of the current rating year, and
- the historical baseline NABERS rating must be based on a similar configuration to the current NABERS rating, as described below.

The rating period for the historical baseline NABERS rating must not overlap with the rating period for the current NABERS rating year. If there is overlap, then calculation method 1 should be used.

Determining a 'similar configuration'

Under calculation method 2, it is important to determine if a NABERS building has a 'similar configuration' between the historical NABERS rating and current NABERS rating. The Scheme Administrator has determined that a NABERS building has a similar configuration if the following criteria are met:

1. the difference in each rated input between each rating is 5% or less; and
2. the sub-metering arrangements and on-site generation systems are the same, where present.

For criterion 2, a NABERS building's sub-metering arrangements and on-site generation systems are considered the same if, at the time a building was rated under a previous NABERS rating and current NABERS rating, the following were met:

- sub-metering arrangements (if any) covered the same space as determined by the NABERS assessor for each rating, using the evidence specified in the 'NABERS Rules for collecting and using data' that is relevant to the type of NABERS rating; and
- on-site generating system (if any) nameplate capacity for each type of generation system was the same.

Options available when a previous rating is not a similar configuration

If all of the above criteria cannot be met, then the ACP can either:

1. Ask the Scheme Administrator to consider the use of a previous NABERS rating, where the ACP can demonstrate that the difference in the maximum allowable electricity consumption between the ratings is 5% or less.
2. Submit to IPART a proposed different previous NABERS rating to be used as a fixed baseline rating, but only if:
   a) this is the first time that a baseline will be fixed for the purposes of ESC creation, or
   b) the age of the current fixed baseline is greater than seven years compared to the current NABERS rating, as defined in clause 8.8.4 of the Rule.
3. Use a benchmark NABERS rating index prescribed in Table A20 in Schedule A of the ESS Rule (calculation method 1), to calculate ESCs for a current NABERS rating.

3.5 Minimum requirements for conduct of representatives

The Scheme Administrator has established minimum requirements for the conduct of ACPs and their representatives. This includes ACP responsibilities for:

- training representatives
- maintaining a register of representatives
- ensuring there is a formal, documented, signed and enforceable (legally binding) contract or agreement in place for each representative, and

- providing appropriate customer service.

ACPs are accountable for all ESS activities conducted by employees, third parties and other representatives. This includes all aspects of an activity for which they create ESCs, from the initial engagement with customers, through to the final quality assurance of documents. ACPs will be held responsible for all actions, omissions and information provided by representatives acting on their behalf under the ESS – regardless of any contract or agreement with other parties. For more information, refer to *ESS Notice 01/2013 (amended July 2014) Minimum requirements for conduct of persons acting on behalf of ACPs.*[9]

4 Calculating energy savings

The relevant equations and tables used to calculate energy savings using the NABERS method are provided in Appendices A and B of this guide. Under the ESS Rule, energy savings comprise both 'electricity savings' and 'gas savings'. Electricity savings and gas savings must both be calculated under the NABERS method. Energy savings under the NABERS method are calculated using method 4 under clause 8.8 of the Rule (reproduced in Appendix B of this guide).

Before starting on the calculations, you will need to ensure that you use the correct NABERS rating data. A NABERS rating may include GreenPower,[10] which is electricity sourced from an accredited GreenPower source. If GreenPower has been included in the NABERS rating, two ratings are provided on the NABERS rating certificate and NABERS energy rating report; one that includes GreenPower and one that excludes it. You must only use the rating that excludes GreenPower.

Once you have the NABERS rating, there are four steps to calculate energy savings:

1. calculate the measured energy consumption, which consists of the measured electricity consumption and measured gas consumption
2. calculate the benchmark NABERS rating
3. calculate the benchmark electricity consumption and benchmark gas consumption, and
4. calculate energy savings.

To be eligible to create ESCs, these steps must be followed each year for each building, after certification of the NABERS rating.

9 Refer: www.ess.nsw.gov.au/ESS_Notices_and_Updates

10 GreenPower is a voluntary government accredited program that enables your electricity provider to purchase renewable energy on your household's or business' behalf.

4.1 Step 1 - Calculate measured energy consumption

Measured energy consumption is calculated using step 1 of method 4 of the ESS Rule and is measured in Megawatt Hours (**MWh**). It consists of both measured electricity consumption and measured gas consumption.

4.1.1 Measured electricity consumption

Measured electricity consumption is calculated using the formula below:

Measured electricity consumption (MWh) = NABERS electricity (MWh) + on-site unaccounted electricity (MWh)

NABERS electricity is the electricity accounted for in the NABERS rating, which is found on the NABERS energy rating report. This is usually reported in kWh, so it must be converted to MWh to complete the calculation.

On-site unaccounted electricity is the electricity generated on-site from a source that has not been accounted for in the NABERS rating. This may include solar PV or biogas generation where the fuel input has not been included in the rated energy consumption reported on the NABERS energy rating report. All energy consumption must be converted to MWh.

4.1.2 Measured gas consumption

Measured gas consumption is calculated using the formula below:

Measured gas consumption (MWh) = NABERS gas (MWh)

'NABERS gas' is the gas which is accounted for in the NABERS rating, which is found on the NABERS energy rating report. This is usually reported in Megajoules (**MJ**), so it must be converted to MWh to complete the calculation of energy savings (using standard conversion factors).

4.2 Step 2 - Calculate benchmark NABERS rating

Calculate the benchmark NABERS rating using one of the two calculation methods provided at step 2 in method 4 in the ESS Rule.

4.2.1 Calculation method 1 - benchmark NABERS rating

The benchmark NABERS rating is the value in Table A20 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide) that corresponds to:

a) the NABERS rating tool used for your rating

b) the year in which the rating period ended for that NABERS rating, and

c) the building category for your rating.

Note that the benchmark NABERS rating selected may differ from the benchmark NABERS rating used to determine the eligibility of your NABERS building to use calculation method 1 (section 3.4.1).

4.2.2 Calculation method 2 – baseline NABERS rating

The benchmark NABERS rating is calculated using the following inputs:

- historical baseline NABERS rating
- baseline rating year[11]
- current rating year, and
- annual rating adjustment provided in Table A21 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide). This adjustment factor accounts for the changes in the NABERS rating scale.

The benchmark NABERS rating is calculated as follows:

Benchmark NABERS Rating = Historical Baseline NABERS Rating + Annual Rating Adjustment × (Current Rating Year – Baseline Rating Year)

Refer to Box 4.2 for an example calculation using method 2 – baseline NABERS rating.

Once a baseline NABERS rating is determined (and eligible) it becomes fixed and can be used to calculate energy savings for subsequent NABERS ratings. However, ESCs cannot be calculated twice for the same rating period. Once the end date of the baseline rating year exceeds the seven year limit, it must be reset using the most recent (or a subsequent) NABERS rating period for the building that was used to calculate energy savings. Refer to Box 4.1 for an example.

Box 4.1 Example: re-setting a baseline NABERS rating

An ACP previously calculated energy savings from a NABERS rating that ended 31/12/14. The end date of the baseline NABERS rating was 31/12/07.

The ACP now wishes to calculate energy savings using this method for a NABERS rating that ends on 31/12/15. Because the end date of the baseline NABERS rating occurred more than seven years ago, it must be reset using the most recent NABERS rating, or a subsequent rating, to calculate energy savings. Therefore, the new baseline NABERS rating will be reset using the NABERS rating that ended on 31/12/14

11 The year that corresponds to the end date of the historical baseline NABERS rating.

Box 4.2 Example: calculating benchmark NABERS rating using a previous NABERS rating

An ACP has a building with a 4 star rating for NABERS Offices – base building. The current NABERS rating ends on 31/12/16. It has a 2 star rating for NABERS Offices – base building that ended on 31/12/11, which the ACP wishes to use as a historical baseline NABERS rating. The baseline rating year end date is less than seven years from the end date of the current rating year and therefore it is eligible for use in this method, assuming the sub-metering arrangements are similar for each NABERS rating.

The inputs for the equation above are:

- baseline NABERS rating = 2
- current rating year = 2016
- baseline rating year = 2011
- annual rating adjustment = 0.15 (from Table A21 in Schedule A of the ESS Rule, reproduced in Appendix A of this guide).

Using the above equation:

Benchmark NABERS Rating = Historical Baseline NABERS Rating + Annual Rating Adjustment × (Current Rating Year – Baseline Rating Year)

- benchmark NABERS rating = 2 + (0.15 x (2016 - 2011))
- benchmark NABERS rating = 2 + (0.15 x 5)
- benchmark NABERS rating = 2.75

The benchmark NABERS rating is 2.75.

4.3 Step 3 - Calculate benchmark electricity consumption and benchmark gas consumption

In order to proceed to this step, the NABERS rating must:

- If using calculation method 1:
  - be at least 0.5 stars greater that the relevant benchmark listed in Table A20 of the ESS Rule (reproduced in Appendix A of this guide) for the first rating period for ESC creation; and
  - exceed the benchmark used for the first rating period for ESC creation by at least 0.5 stars for each subsequent period.
- If using calculation method 2, be at least one star greater than the historical baseline NABERS rating used to calculate the benchmark NABERS rating.

Otherwise, no energy savings can be calculated using this NABERS rating.

The benchmark electricity consumption and benchmark gas consumption are calculated using the NABERS reverse calculators that are located under the 'Rating Calculator' tab on

the NABERS website.[12] You will need to use the calculator that is applicable to your specific rating for your building (for example NABERS Energy for offices – Reverse Calculator).

These calculators are updated regularly so you will need to check and download the most recent version of each calculator from the NABERS website.

Some of the NABERS reverse calculators may only accept star ratings that are in half or whole star increments. If the benchmark NABERS rating is not accepted by a calculator, then round it down to the nearest half star or whole star.

4.3.1 Building details

The data required for the NABERS reverse calculator is provided from the following sources:

- NABERS energy rating report
- the benchmark NABERS rating calculated at step 2 of method 4 of the ESS Rule (see section 4.2 of this guide), and
- any on-site unaccounted electricity consumption reports for the NABERS rating period that energy savings are to be calculated.

4.3.2 Breakdown of overall building consumption by energy source

You must provide details of the breakdowns for each fuel type as a percentage of overall building energy consumption, which is a required input for the NABERS reverse calculator. Each fuel type has a different conversion factor. To do this, convert each fuel type to a standard unit of MWh, using the following fuel conversion factors:

- To convert kWh of electricity to MWH: MWH = electricity (kWh)/1,000
- to convert MJ of gas to MWh: MWH = gas (MJ)/3,600
- to convert L of diesel to MWh: MWH = [diesel (L) x 38.6]/3,600
- to convert kg of coal to MWh: MWH = [coal (kg)/1000] x [energy content factor (GJ/t)] x [1/3.6].

The relevant energy content factor for coal should be sourced from the current version of the National Greenhouse Accounts (**NGA**) Factors.[13]

Once you have converted usage to MWh:

- add all sources of electricity and gas (from the NABERS energy rating report and the onsite unaccounted electricity consumption reports)

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12 Refer to: www.nabers.gov.au. The NABERS Hospital reverse calculator must be requested via email: nabers@environment.nsw.gov.au

13 Dept. of the Environment (Aust. Govt.), *National Greenhouse Accounts Factors*, "Table 1: Fuel combustion emission factors – solid fuels and certain coal based products" www.environment.gov.au/climate-change/greenhouse-gas-measurement/tracking-emissions

- add up consumption from all fuel types in MWh, and
- calculate the percentage of overall building energy consumption for electricity, gas, coal and oil (including diesel).

4.3.3 Maximum allowable energy consumption

The inputs provided for each NABERS reverse calculator are used to calculate the maximum allowable energy consumption for each fuel type covered by a NABERS rating.

4.4 Step 4 - Calculate energy savings

You are now able to calculate energy savings. The data needed for this step are:

- benchmark electricity consumption and benchmark gas consumption, from step 3, and
- measured electricity consumption and measured gas consumption for the current rating year, from step 1.

The energy savings are calculated for each fuel type separately:

1. Any energy savings for electricity are calculated using the following equation:

Electricity savings (MWh) = (Benchmark electricity consumption – Measured electricity consumption) × Regional Network Factor[14]

2. Any energy savings for gas are calculated using the following equation:

Gas Savings (MWh) = Benchmark Gas Consumption – Measured Gas Consumption

The equation to calculate electricity savings includes a regional network factor. The applicable regional network factor is based on the postcode of the site and can be found in Table A24 in Schedule A of the ESS Rule (reproduced in Appendix A of this guide).

Prior to 15 April 2016, ACPs accredited under the NABERS method were accredited to create ESCs from activities that saved electricity only. ACPs cannot create ESCs for gas savings unless they are accredited to do so.[15] ACPs will only be able to apply to create ESCs from activities that save gas where the implementation date[16] of that activity is after the date the ACP is accredited to implement gas saving activities.

14 The Regional network factor is the value from Table A24 in Schedule A of the *ESS Rule* that corresponds to the post code of the street address of the NABERS building.

15 This is stipulated in an ACP's Accreditation Notice. The effective date of accreditation or amendment will determine the implementations that are eligible for gas savings.

16 For the NABERS method, the implementation date is defined in clause 8.8.5 of the *ESS Rule* as "the end date of the first Rating Period for which Energy Savings will be calculated under clause 8.8.7".

5 Calculating and creating ESCs

Equation 1 of the ESS Rule is used to calculate the number of ESCs that may be created from the energy savings calculated in relation to an implementation.

Equation 1

$$\textit{Number of Certificates} = \Sigma_{\textit{Implementations}}\ \textit{Electricity Savings} \times \textit{Electricity Certificate Conversion Factor} + \textit{Gas Savings} \times \textit{Gas Certificate Conversion Factor}$$

5.1 Approval of calculations

Energy savings are taken to occur on the date that the Scheme Administrator determines that the relevant NABERS rating was completed.[17] To satisfy this requirement, the ACP must provide information to the Scheme Administrator that includes:

- ESC calculations for each NABERS building, and
- the required records (refer to section 6 below) for each NABERS building.

The Scheme Administrator will review this information, in consultation with the NABERS National Administrator, and if satisfactory, grant approval for the ACP to create and apply to register ESCs for that NABERS rating type at that building. Once the ACP has received an approval letter to apply to register ESCs, the ESS registry is updated and the ACP can then lodge the implementation data sheet (refer to section 5.2 below).

5.2 Applying to register ESCs

Certain information must be submitted to the Scheme Administrator **before** an ACP applies to register ESCs.[18] ACPs are to provide the required information by completing an *Implementation Data Sheet*[19] and submitting it through the ESS Portal.[20] The *Implementation Data Sheet* will include a calculation of the number of ESCs to be created in accordance with Equation 1 in the ESS Rule. This calculation involves:

- multiplying the electricity savings (from the formula in section 4.4) by the electricity certificate conversion factor (1.06)[21]
- multiplying the gas savings (from the formula in section 4.4) by the gas certificate conversion factor (0.39),[22] and
- adding the two figures together.

17 *ESS Rule*, clause 8.8.7
18 *ESS Rule*, cl 6.8
19 Available at: http://www.ess.nsw.gov.au/Registry/Registering_certificates
20 Information and access to the portal can be found here: www.ess.nsw.gov.au/ESS_Portal
21 *Electricity Supply Act 1995*, section 130(1)
22 *Electricity Supply Act 1995*, section 130(1)

The result is the total number of ESCs that ACPs can apply to register from the implementation or implementations. If the result is not a whole number, it is rounded **down** to the nearest whole number.

There are no restrictions on how many implementations can be bundled together in the same *Implementation Data Sheet*. However:

- ACPs must apply to register all ESCs included in an *Implementation Data Sheet* in a single application
- ACPs cannot split energy savings calculated from a single implementation across two or more *Implementation Data Sheets*, and
- each *Implementation Data Sheet* must only include the calculation of energy savings that are taken to have occurred in the same calendar year (commonly referred to as 'vintage').

When determining how many implementations to bundle in the same *Implementation Data Sheet*, ACPs should consider:

- the ESC creation limit specified in their Accreditation Notice, as they must be able to register all the ESCs in the bundle at the same time, and
- the cost of registering the ESCs.[23]

More information on applying to register the creation of ESCs can be found on the ESS website.[24]

6 Minimum required records

ACPs are required to keep records in respect of a RESA, including records of:

- the location in which the RESA occurred
- the energy savings arising from that RESA
- the methodology, data and assumptions used to calculate those energy savings, and
- any other records specified by the Scheme Administrator.[25]

ACPs must retain records for at least six years, in a form and manner approved by the Scheme Administrator. Each ACP's Accreditation Notice may include a condition requiring that the ACP's record keeping arrangements are consistent with the *ESS Record Keeping Guide*.[26] Table 6.1 below describes the minimum documents you are required to keep as a record of the energy savings from your project. You must collect the required documents for each implementation of your activity.

23 The ESC registration fee must be paid in a single payment for all ESCs registered in a single bundle. Payment for a single bundle cannot be split into two payments. Refer: www.ess.nsw.gov.au/Registry/Registering_certificates

24 Avaliable at: www.ess.nsw.gov.au/Registry/Creating_certificates

25 *Electricity Supply (General) Regulation 2014*, cl 46

26 Available at: www.ess.nsw.gov.au/Accredited_Certificate_Providers/Record_keeping_arrangements

Table 6.1 Minimum evidence required for each implementation

Requirement	Documents acceptable for evidencing requirement	Description
Implementation Address and Implementation Date	NABERS Rating Certificate **and** NABERS Energy Rating Report **or** NABERS Rating Data Summary or NABERS Hospital – Rating Spreadsheet	Both documents must clearly show the address of the building. The NABERS energy rating report or NABERS rating data summary must specify the end date of the rating period.
Energy Saver	NABERS Rating Certificate	The document must clearly display the NABERS rating holder.
Nomination	Nomination form (not required if you are the NABERS rating holder)	The nomination form must: ▼ be the relevant template available from the ESS website ▼ be signed by the NABERS rating holder, and ▼ be completed on or before the implementation date.
Energy Savings Calculation	The spreadsheet or calculation summary you use to calculate energy savings from each implementation.	The document must clearly show your calculation of energy savings, including all relevant inputs and outputs.
NABERS Electricity	NABERS energy rating report **or** NABERS rating data summary or NABERS Hospital – Rating Spreadsheet	The document must show the certified electricity consumption listed under energy consumption details.
NABERS Gas	NABERS energy rating report **or** NABERS rating data summary or NABERS Hospital – Rating Spreadsheet	The document must show the certified gas consumption listed under energy consumption details.
On-Site Unaccounted Electricity	Utility, Building Owner or Energy Services Company Report	A report for the rating period showing: ▼ the source of the on-site electricity generation ▼ the amount of electricity generated that was consumed on-site for the rated building for the NABERS rating period, and ▼ meter identifier, and whether it is a utility meter or sub-meter.

Requirement	Documents acceptable for evidencing requirement	Description
NABERS Star Rating & Rating Type	NABERS Rating Certificate **and** NABERS Energy Rating Report **or** NABERS Rating Data Summary or NABERS Hospital – Rating Spreadsheet	The documents must clearly show the star rating of the building, excluding GreenPower.
Building Information	NABERS Energy Rating Report **or** NABERS Rating Data Summary (must be provided for method 2). or NABERS Hospital – Rating Spreadsheet	The document must show the inputs required to calculate the maximum allowable electricity use from the NABERS reverse calculator. The NABERS Rating Data Summary must describe any on-site generation or sub-meters that exclude energy consumption.
Similar Configuration (must be provided if using calculation method 2)	The following documents (as relevant to the site): ▼ NABERS Energy Rating Report ▼ NABERS Rating Data Summary ▼ Single line diagram (sub-metering) ▼ Installation or commissioning documentation (on-site generation) ▼ NABERS Hospital – Rating Spreadsheet	Refer to ‘determining a similar configuration’ in section 3.4.2.
Maximum Allowable Electricity Use	NABERS Reverse Calculator	Must show all inputs required from other sources of documentation to calculate the maximum allowable electricity use for each building for which ESCs are created.
Maximum allowable gas consumption	NABERS Reverse Calculator	Must show all inputs required from other sources of documentation to calculate the maximum allowable gas use for each building for which ESCs are created.
Built date prior to 1 November 2006 (required where the Benchmark NABERS rating is calculated using calculation	One of the following documents: ▼ Compliance certificate ▼ Final occupation certificate ▼ Tenancy agreement ▼ Survey plan drawn to Building Owners and	The document must show that the built date is prior to 1 November 2006.

Requirement	Documents acceptable for evidencing requirement	Description
method 1)	Management Association (BOMA) or Property Council of Australia (PCA) standard ▼ As-built plans ▼ Photo of building commemoration plaque ▼ Utility bill (electricity, gas or water) ▼ Previous NABERS rating certificate ▼ Property valuation	

a You will need to contact the NABERS team about the NABERS Hospital – Rating Spreadsheet

7 Glossary

Words which are defined in the ESS Rule and used in this Method Guide have the same meaning in this Method Guide as in the ESS Rule, unless the context requires otherwise.

Term	Definition
ACP	Accredited Certificate Provider.
Annual rating adjustment	An adjustment factor (0.15), used to calculate the benchmark NABERS rating by subtracting the baseline rating year from the current rating year and multiplying the difference by 0.15, where the age of the baseline rating is more than one year.
Baseline rating year	The year that corresponds to the end date of the NABERS rating that is used as the baseline to determine the historical benchmark NABERS rating using calculation method 2.
Benchmark NABERS rating	The star rating used to calculate the maximum allowable electricity consumption and maximum allowable gas consumption for the building.
Current rating year	The year that corresponds to the end date of the NABERS rating period that is used to calculate energy savings.
Energy saver	Refer to section 3.1 of this guide.
ESC - energy savings certificate	A certificate created under the ESS from a recognised energy saving activity
ESS	Energy Savings Scheme
Historical baseline NABERS rating	A previous NABERS rating for the same NABERS building and similar configuration (metering arrangements and on-site energy generation).
Rule	*Energy Savings Scheme Rule of 2009*
Implementation	Refer to section 3.2 of this guide
NABERS	National Australian Built Environment Rating System
NABERS Baseline Method	A calculation method from the Rule that uses a NABERS rating to calculate energy savings for a NABERS building.
NABERS building	A building that has been rated under NABERS.
NABERS electricity	The electricity accounted for in the NABERS rating for a NABERS rating period, reported in the NABERS energy rating report.
NABERS gas	The gas accounted for in the NABERS rating for a NABERS rating period, reported in the NABERS energy rating report.
NABERS rating	A certified energy rating, expressed as a number of stars, for a NABERS building.
NABERS rating data summary	Export from member's (eg, NABERS assessor) website of data for certified NABERS rating, or NABERS assessor excel spreadsheet used for certified rating.
NABERS Reverse Calculators	Tools provided by the NABERS National Administrator that are used to calculate the maximum allowable electricity consumption and maximum allowable gas consumption, for the purpose of calculating the benchmark electricity consumption and benchmark gas consumption for a building.
Rating period	The 12 month period for the NABERS rating that is used to calculate energy savings.
RESA	Recognised Energy Saving Activity

Appendices

A Activity definitions and equipment requirements

A.1 Calculation method 1

Table A20 in Schedule A of the ESS Rule: Benchmark NABERS Ratings Index

NABERS Rating tool	Building category	Year of NABERS Rating End Date					
		2015	2016	2017	2018	2019	2020
Offices	Built prior to 1 November 2006	4.0	4.0	4.5	4.5	4.5	5.0
Offices	Built on or after 1 November 2006	5.0	5.0	5.5	5.5	5.5	6.0
Hotels	Built prior to 1 November 2006	3.0	3.5	3.5	3.5	3.5	4.0
Hotels	Built on or after 1 November 2006	4.0	4.5	4.5	4.5	4.5	5.0
Shopping Centres	Built prior to 1 November 2006	3.5	4.0	4.0	4.0	4.0	4.5
Shopping Centres	Built on or after 1 November 2006	4.5	5.0	5.0	5.0	5.0	5.5
Data Centres	Built prior to 1 November 2006	3.5	3.5	3.5	4.0	4.0	4.0
Data Centres	Built on or after 1 November 2006	4.5	4.5	4.5	5.0	5.0	5.0
Hospitals	Built prior to 1 November 2006	3	3	3.5	3.5	3.5	3.5
Hospitals	Built on or after 1 November 2006	4	4	4.5	4.5	4.5	4.5

A.2 Calculation method 2

Table A21 in Schedule A of the ESS Rule: NABERS Annual Ratings Adjustment

NABERS Rating tool	Building category	Annual rating adjustment for Historical Baseline NABERS Rating that is 1 year old.	Annual ratings adjustment for Historical Baseline NABERS Rating that is 2 - 7 years old.
Offices	All	0	0.15
Hotels	All	0	0.15
Shopping Centres	All	0	0.15
Data Centres	All	0	0.15
Hospitals	All	0	0.15

A.3 Regional Network Factor

Table A24 in Schedule A of the ESS Rule: Regional Network Factors

Postcode of Site where Implementation occurred	Regional Network Factor
2311-2312	1.03
2321	1.03
2324	1.03
2329	1.03
2338-2490	1.03
2536-2537	1.03
2545-2551	1.03
2579-2599	1.03
2619-2739	1.03
2787	1.03
2791-2844	1.03
2850-2880	1.03
3585	1.03
3644	1.03
4383	1.03
All other postcodes	1

B Equation to Calculate Energy Savings

Clause 8.8.9 of the ESS Rule

Method 4 – NABERS Benchmark

Step 1 – Calculate Measured Electricity Consumption and Measured Gas Consumption

Using the measurements taken to establish the NABERS Rating, and other measurements taken as necessary, calculate total energy consumption for the NABERS Building as follows:

Measured Electricity Consumption (MWh) = NABERS Electricity + On-site Unaccounted Electricity

Measured Gas Consumption (MWh) = NABERS Gas

Where:

- *NABERS Electricity*, in MWh, is the electricity purchased or imported from the Electricity Network and accounted for in the NABERS Rating, including electricity purchased as GreenPower; and
- *On-site Unaccounted Electricity*, in MWh, is electricity generated on-site from energy sources which have not been accounted for in the NABERS Rating, including electricity generated from photovoltaic cells or Gas generators fed from on-site biogas sources, but excluding Gas generators where the imported Gas has been accounted for in the NABERS Rating; and
- *NABERS Gas*, in MWh, is the total of the Gas accounted for in the NABERS Rating.

Step 2 – Calculate Benchmark NABERS Rating

Calculate the Benchmark NABERS Rating, by using either:

(a) Calculation Method 1: Look up the Benchmark NABERS Rating in Table A20 of Schedule A in the ESS Rule (Appendix A) which corresponds to the relevant Current Rating Year, NABERS Rating tool and building category; or

(b) Calculation Method 2: Calculate the Benchmark NABERS Rating based on a Historical Baseline NABERS Rating as follows:

Benchmark NABERS Rating = Historical Baseline NABERS Rating + Annual Rating Adjustment × (Current Rating Year – Baseline Rating Year)

Where:

- *Historical Baseline NABERS Rating* is as defined in clause 8.8.2 and meets the requirements set out in clause 8.8.4
- *Annual Rating Adjustment* is the amount by which average NABERS Ratings increase each year and is the value in **Table A21** of Schedule A which corresponds to the relevant NABERS Rating tool and building category; and
- *Baseline Rating Year* is as defined in clause 8.8.2(e)

Step 3 – Calculate Benchmark Electricity Consumption and Benchmark Gas Consumption

Benchmark Electricity Consumption is the electricity consumption that would be required for that same NABERS Building to achieve the Benchmark NABERS Rating over the Rating Period, assuming the same breakdown of energy consumption. It is the electricity component of maximum allowable energy consumption, converted to MWh.

Benchmark Gas Consumption is the Gas consumption that would be required for that same NABERS Building to achieve the Benchmark NABERS Rating over the Rating Period, assuming the same breakdown of energy consumption. It is the Gas component of maximum allowable energy consumption, converted to MWh.

Calculate the *Benchmark Electricity Consumption* and *Benchmark Gas Consumption* in MWh by using the NABERS Reverse Calculator for the relevant NABERS method, setting the target star rating to the Benchmark NABERS Rating, and giving all other input parameters the same value as for the actual NABERS Rating over that Rating Period, including:

- Rating type;
- Building information (e.g. Rated Area, number of computers); and
- Percentage breakdown of energy consumption (on an energy use basis in MWh).

If necessary for use with the relevant NABERS Reverse Calculator, round down the *Benchmark NABERS Rating* to the nearest half or whole star increment.

Step 4 – Calculate Energy Savings

Calculate *Electricity Savings* and *Gas Savings*, in MWh as follows:

Electricity Savings = (Benchmark Electricity Consumption - Measured Electricity Consumption) x Regional Network Factor

Gas Savings = Benchmark Gas Consumption – Measured Gas Consumption

Where:

- *Regional Network Factor*, is the value from **Table A24** of Schedule A corresponding to the postcode of the Address of the Site or Sites where the Implementation(s) took place.