

**Building Upgrade Finance Cost Savings Methodology**  
**Sub-method M3 – NABERS (savings made)**

**1. Purpose**

This document sets out the sub-method for calculating savings made from upgrade works under a building upgrade agreement that improve the NABERS rating of a commercial building.

**2. Definitions**

**Benchmark NABERS rating** is the rating that the building would have achieved if the upgrade was not installed using the configuration of the building after the upgrade.

**Current NABERS rating** means the NABERS rating of the building at the time of the calculation used to calculate Utility Savings.

**Current Rating Year** is the year for which the Lessee Savings is calculated, and is the year of the last date in the Rating Period for the Current NABERS rating.

**ERF tab** is the worksheet in a NABERS Reverse Calculator developed to assist proponents using the NABERS rating to estimate savings from building upgrades using NABERS ratings.

**Historical Baseline NABERS rating** is a NABERS rating for the Rated Building with a Rating Period completed before the building upgrade is implemented.

**NABERS** is the National Australian Built Environment Rating System.

**NABERS Accredited Assessor** is a person authorised to conduct accredited NABERS ratings in accordance with the NABERS Rules.

**NABERS rating** is an accredited NABERS rating completed by a NABERS Accredited Assessor in accordance with the NABERS Rules.

**NABERS Rules** is the NABERS Rules for Collecting and Using Data, the quality standard for a NABERS rating. For a rating to be accredited by NABERS, the assessment on which it is based must be performed by a NABERS Accredited Assessor and comply with the NABERS Rules that set out principles and rules for gathering, interpreting and using data. The NABERS Rules are published on the NABERS website.

**NABERS Reverse Calculator** is a calculator published on the NABERS website to determine the maximum amounts of energy and water a building can use to achieve a specified NABERS rating.

**Rated Building** is the building subject to the upgrade works.

**Rating Period** is the time over which measurements were taken to establish the Current NABERS rating or the Historical Baseline NABERS rating.

### **3. Applicability of this sub-method**

This calculation sub-method may be applied to a building upgrade where:

1. The Predicted Savings for the upgrade have been estimated using sub-method P3 – NABERS or sub-method P4 – Energy Audit.
2. The Rated Building is a building in use in South Australia that is eligible for a NABERS Energy or Water rating calculated using one of the following tools:
  - NABERS for Offices
  - NABERS for Hotels
  - NABERS for Shopping Centres
  - NABERS for Data Centres.
3. The Historical Baseline NABERS Rating and Current NABERS rating must be based on a similar configuration. In particular, any energy end uses excluded from the Current NABERS rating must also be excluded from the Historical Baseline NABERS rating.

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#### 4. Utility Savings – Energy

Where the measured utility is electricity and/or gas, the utility savings for this upgrade are calculated as follows.

##### **Step 1 – Calculate Current Electricity Consumption and Current Gas Consumption for the Current Rating Year**

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

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

*Current 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 Current 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 Current 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 Current NABERS Rating; and
- *NABERS Gas*, in MWh, is the total of the purchased Gas accounted for in the Current 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 of the Energy Savings Scheme Rule (NSW) 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*

Where:

- *Historical Baseline NABERS Rating* is a previous NABERS rating for the building, as defined in section 2 of this sub-method, as reported to one decimal place.

### **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 Current NABERS Rating Period. 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 Current NABERS Rating Period. 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 “ERF tab” in the NABERS Reverse Calculator for the relevant NABERS method with input parameters set to:

- Rating type matching the Current NABERS Rating type
- Star Rating matching the Benchmark NABERS Rating
- Building information (e.g. Rated Area, Rated Hours, number of computers etc) matching the Current NABERS Rating building information
- Percentage breakdown of energy consumption (on an energy use basis in MWh) matching the Historical Baseline NABERS Rating (if available), or matching the Current NABERS Rating if no Historical Baseline NABERS Rating is available for the building.

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

### **Step 4 – Calculate Utility Savings**

Calculate *Utility Savings* as follows for electricity and gas:

*Utility Savings (electricity) = Benchmark Electricity Consumption - Current Electricity Consumption*

*Utility Savings (gas) = Benchmark Gas Consumption – Current Gas Consumption*

Note that these savings are calculated in MWh.

## 5. Utility Savings – water

Where the measured utility is water, the utility savings for this upgrade works is:

### Step 1 – Calculate Current Water Consumption

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

$$\text{Current Water Consumption (ML)} = \text{NABERS Water}$$

Where:

- *NABERS Water*, in ML, is the total of the water accounted for in the Current NABERS Rating, including any recycled water.

### Step 2 – Calculate Benchmark NABERS Rating

Calculate the Benchmark NABERS Rating based on a Historical Baseline NABERS Rating as follows:

$$\text{Benchmark NABERS Rating} = \text{Historical Baseline NABERS Rating}$$

Where:

- *Historical Baseline NABERS Rating* is a previous NABERS rating for the building, as defined in section 2 of this sub-method, as reported to one decimal place.

### Step 3 – Calculate Benchmark Water Consumption

Benchmark Water Consumption is the water consumption that would be required for that same NABERS Building to achieve the Benchmark NABERS Rating over the Current NABERS Rating Period.

Calculate the Benchmark Water Consumption in ML 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 NABERS Rating Period, including:

- Rating type; and
- Building information (e.g. Rated Area).

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

### Step 4 – Calculate Utility Savings (water)

Calculate *Utility Savings* as follows:

$$\text{Utility Savings} = \text{Benchmark Water Consumption} - \text{Current Water Consumption}$$

Note that these savings are calculated in ML.

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## **6. Supporting evidence**

For verification purposes, the following records should be retained in relation to the Activity:

- An output report from the NABERS reverse calculator showing the relevant target star rating and input parameters used in the calculation
- Copies of accredited NABERS Rating Certificates for the Rated Building.

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