Green Star – Office v3: Approach to Greenhouse Gas Emissions

There are two credits within Green Star – Office Design and Office As Built version 3 (v3) rating tools that directly target greenhouse gas emissions. These credits are the Ene-Conditional Requirement (Ene-CR) and Ene-1 'Greenhouse Gas Emissions' (Ene-1).

The key aim of Ene-CR and Ene-1 within Green Star is to reward reductions in the greenhouse gas emissions associated with buildings. To demonstrate compliance with these credits energy modelling is currently required.

In Green Star – Office v3 the credit Ene-CR must be achieved for the project to be eligible for assessment and certification, whilst Ene-1 rewards predicted 'net zero greenhouse gas emissions in operation' with the maximum 20 points. Compliance with Ene-CR and Ene-1 can be achieved through two methods which are described below.

METHODS FOR DETERMINING COMPLIANCE

The first step in identifying the predicted greenhouse gas emissions for any building is to ascertain the predicted energy consumption used in the building, e.g. electricity (kWh/annum) and gas (MJ/annum). At present energy modelling must be carried out in accordance with the NABERS Energy Guide to Building Energy Estimation Modelling (located at www.nabers.com.au under 'Resources'), in order to demonstrate compliance with Ene-CR and Ene-1.

Currently projects can choose either of the alternative routes detailed below for demonstrating compliance with Ene-CR and Ene-1. Please refer to the explanations and diagram below for further details.

Method: Using the NABERS Energy Guide to Building Energy Estimation

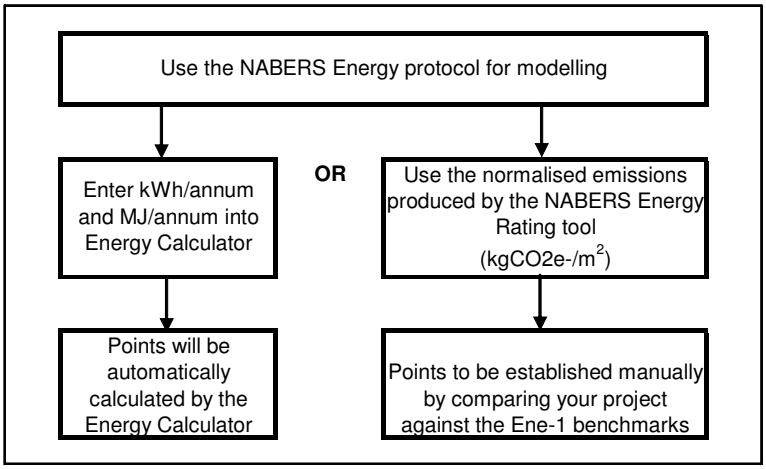
Project teams are required to use the NABERS Energy Guide to Building Energy Estimation to carry out the energy modelling. Once modelling is complete and the predicted energy consumption for electricity (kWh/annum) and gas (MJ/annum) are known, there are two routes available to you.

Route 1

Route 1 requires the project team to enter the predicted energy consumption for electricity (kWh/annum) and gas (MJ/annum) into the Green Star – Office v3 Energy Calculator (Energy Calculator). The Energy Calculator then calculates the project's predicted greenhouse gas emissions ($kgCO_2e\text{-}/m^2$) figure and confirms automatically whether Ene-CR has been met and how many points have been achieved in Ene-1.

Route 2

Route 2 allows the project team to use the predicted greenhouse gas emissions ($kgCO_2e\text{-}/m^2$) figure reported in the NABERS Energy Rating Calculator to demonstrate compliance with the Conditional Requirement and establish how many points the project has achieved in Ene-1.



The answer you get from the Green Star Energy Calculator may differ from the answer you get from the NABERS Energy Rating tool and may differ from the emissions in your NABERS Energy Pre-Commitment Agreement. This is as a result of the differences in approach of Green Star and NABERS in normalising for the differences in greenhouse gas coefficients and climates between the states of Australia. Projects are advised to use the most beneficial outcome from these calculations for assessment of greenhouse gas emissions under Green Star.

Data to be entered into the Green Star – Office v3 Energy Calculator

The following guidance is provided to assist if you have chosen to use the Energy Calculator to demonstrate compliance with Ene-CR and Ene-1 as per Route 1 above.

The following data is required to be entered in to the white cells of the Energy Calculator:
1. The location of the building (State);
2. The Net Lettable Area (NLA) of the building; and
3. The total predicted energy consumption of the buildingfor electricity (kWh/annum) and gas (MJ/annum).

The Energy Calculator will then calculate the greenhouse gas emissions per square metre of NLA for the building ($kgCO_2e\text{-}/m^2$).

This number is used to determine whether the building meets Ene-CR and how many points are allocated to the building for Ene-1.

FUTURE DEVELOPMENTS FOR THE ENERGY CALCULATOR

The Green Star – Office v3 Energy Calculator Guide

A PILOT Green Star – Office v3 Energy Calculator Guide (Guide) has been produced as an alternative to using the NABERS Energy Guide to Building Energy Estimation to carry out the project's energy modelling. This Guide is intended to be used alongside the Energy Calculator. This Guide will go through testing over the coming months before being available to download from the GBCA website for public comment in March 2009.

Further details regarding the Guide will be published on the GBCA website and in the GBCA newsletter as they become available.

Fact sheet updated January 2009.