

Peak Electricity Demand Reduction

Aim of Credit

To encourage the reduction of peak demand load on the electricity network infrastructure by the provision of embedded electricity generation systems.

Credit Criteria

1	Deemed-to-Satisfy Pathway	1 point out of 2 points is available where it is demonstrated that the use of on-site electricity generation systems reduces the total peak electricity demand by at least 10%.
2	Reference Building Pathway	Up to 2 points are available where it is demonstrated that the building's predicted peak electricity demand has been reduced below that of a 'Reference Building': • 1 point at 20% improvement • 2 points at 30% improvement

Please refer to **Energy Category Discussion and Research Paper** (pages 39, 40 in particular) for further details about the updates to this credit. Do you support the proposed approach outline for this credit?

Compliance Requirements

1. Deemed-to-Satisfy Pathway

One point is awarded where it is demonstrated that the use of on-site renewable energy or on-site generation sources reduces the peak electricity demand by at least 10%.

Peak electricity demand is the predicted annual peak to be calculated as the sum of all distribution bars (to include all miscellaneous loads) relevant to the building in electrical schematics. Peak energy demand must be calculated as follows:

- in accordance with AS3000:2007 (or as subsequently amended);
- as the absolute design capacity of the system, after the application of diversity factors but prior to the application of contingency factors as required for utility agreements (the value is likely to be about 30% less than that for the utility agreement); mixed-mode ventilated buildings must be calculated as per the mechanically air-conditioned mode;

- all building end use loads except process loads must be included in the peak demand assessment; refer to the **Building Energy Consumption and Greenhouse Gas Emissions Calculation Guidelines** for the applicable assessment scope.

2. Reference Building Pathway

Up to 2 points are awarded where it is demonstrated that a project's peak electricity demand is reduced by at least 10% compared to that of an equivalent 'reference building'.

Refer to the **Building Energy Consumption and Greenhouse Gas Emissions Calculation Guidelines** for details of how to complete the calculation including definition of the Reference Building.

Mixed Use Projects

A mixed use project or building is deemed to be a building in which no usage classification accounts for more than 80% of the building GFA (excluding car parks, etc). The overall points achieved by the project are calculated based on area-weighting of the score achieved for each part of the building.

Area-weighting is calculated based on the gross floor area (GFA) to which each compliance pathway is applied. Where the whole building is assessed using the performance-based approach only, no area-weighting is required as the calculation method inherently accounts for the peak demand reduction for the whole building.

Shared Services

Where shared services systems are used, they cannot be used to demonstrate peak electricity demand reduction. This is because the total infrastructure requirement has not been reduced by provision of the service; it has only been moved in location.

Do you support the approach of excluding 'shared services' systems as a way to demonstrate peak electricity demand reduction? Why or why not?

Guidance

Alternative Compliance Methods

A Credit Interpretation Request (CIR) may be submitted to the Green Building Council of Australia (GBCA) when a registered project wishes to advocate for an alternative yet equivalent method of meeting Compliance Requirements. This is a formal process, reviewed by the GBCA (or other independent external assessors, depending on the complexity of the issue).

Documentation Requirements

‘Design Review’ Submission (Optional)

Project teams are to submit information/documentation marked with an asterisk* for ‘Design Review’.

As Built Submission

All project teams are to submit the following documentation:

Submission Template

- Summary of how the project meets the credit criteria.*
- Details about how each criterion has been achieved.
- Supporting Documentation, which will vary depending on the pathway chosen as outlined below.

Completed Green Star – Design & As Built Energy Calculator*

Project teams are required to provide documentation supporting credit compliance. The following documents may be used to demonstrate compliance, depending on the approach taken by project teams:

1. Deemed-to-Satisfy Pathway

- **Extract(s) from the specification(s)*** where the proposed solution(s) are described
- Calculation of the peak electricity demand referencing drawings and AS3000, detailing with supporting calculations, the design, operation and sufficient capacity of the intended system
- **Schematic electrical drawings** clearly indicating the type, location and details of the proposed solution(s)

2. Reference Building Pathway

- **Energy modelling report*** shall contain a section specifically on peak electricity demand reduction, with information provided as per the requirements of ***the Building Energy Consumption and Greenhouse Gas Emissions Calculation Guidelines***; and
- **Extract(s) from the Commissioning Report** shall specifically highlight the systems which contribute towards the peak electricity demand reduction, and demonstrate that they have been commissioned and operate as intended by the design (i.e. as described in the energy modelling report).

Mixed Use Projects

All documentation required to demonstrate compliance with each relevant pathway as defined in the documentation requirements above.

Please provide feedback on the technical content of this credit:

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