

# Energy Use

## Positive

**Credit: 22**

**Points: 6**

## Outcome

The building has low energy consumption.

## Strategy

Registering from 2024 onwards	4 Star	Meets the <i>Minimum Expectation</i>
	5 Star	
	6 Star	Meets the <i>Credit Achievement</i>
Registering from 2026 onwards	4 Star	Meets the <i>Minimum Expectation</i>
	5 Star	Meets the <i>Credit Achievement</i>
	6 Star	Meets the Exceptional Performance
Registering from 2028 onwards	4 Star	Meets the <i>Credit Achievement</i>
	5 Star	Meets the Exceptional Performance
	6 Star	
Certified after 1 <sup>st</sup> January 2030, regardless of registration date	All certifications	Meets the Exceptional Performance

## Pathways

There are two pathways available for this credit. Projects can choose from one of the following based on their building type:

- Reference building pathway
- Absolute Value Pathway (This will only be available once benchmark data is available)

Refer below for pathway criteria.

## Criteria

### Reference building pathway

[Note: the below reduction targets are in the process of being reviewed for the suitability for the Aotearoa context and our national climate targets and will likely be adjusted upon completion of further studies.]

<b>Minimum Expectation</b>	<b>Nil</b>	<ul style="list-style-type: none"> <li>The building's energy use is at least 10% less than a reference building.</li> </ul>
<b>Credit Achievement</b>	<b>3 points</b>	<p>– <b>Climate Positive Pathway</b> –</p> <p>In conjunction with the <i>Minimum Expectation</i>:</p> <ul style="list-style-type: none"> <li>The building's energy use is at least 30% less than a reference building.</li> </ul>
<b>Exceptional Performance</b>	<b>3 points</b>	<p>In conjunction with the <i>Credit Achievement</i>:</p> <ul style="list-style-type: none"> <li>The building's energy use is at least 50% less than a reference building.</li> </ul>

## Additional information

### Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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### Synergies with other credits

- Verification and Handover
- Life Cycle Impacts
- Climate Change Resilience
- Operations Resilience
- Grid Resilience

### Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

### Relevant reporting initiatives

- GRESB
- TCFD

### Climate Positive Pathway – Leadership point

This credit is part of the **Error! Reference source not found.** in Green Star Buildings. When the pathway is achieved, a Leadership Challenge point is awarded to the building for a total of 14 points for this path.

# Energy Use – Reference building pathway

## Requirements

### Minimum Expectation

The project must comply with the following criteria:

- Reducing Energy Use

### Reducing Energy Use

The building uses 10% less energy compared to a reference building.

Energy use is measured as MJ/year.

### Modelling requirements

This credit defines the reference building as a building modelled to Clause H1 Energy Efficiency of the New Zealand Building Code. If the building's approval is subject to a later code, the building must use that version.

The results from the energy model must include all energy consumed by base building systems. Consumption from commercial tenant systems such as plug loads, domestic appliances, and manufacturing or process loads are excluded from the calculation.

Refer to the Energy Use calculation guide for more information.

It must be demonstrated that for the Proposed Project each of the following building system complies with the relevant requirements of NZBC Clause H1. The performance of wall-glazing constructions and display windows must comply with the total system R value, total system U value and system SHGC requirements, inclusive of thermal bridging effects.

- The performance of mechanical systems must comply with the requirements of NZBC Clause H1/VM3.
- The performance of artificial lighting systems (H1) must comply with the overall lighting efficiency requirements.

### On-site renewables

The *Minimum Expectation* addresses the energy use from the building's systems and the effect of the building's façade. Therefore, on-site renewable energy generation systems connected behind the meter **cannot** be used to calculate reductions in energy use of the building for the *Minimum Expectation*.

On-site renewable energy generation systems connected behind the meter can be used to calculate reductions in energy use of the building for *Credit Achievement* and *Exceptional Performance*, however electricity exported to the grid cannot be counted.

### Credit Achievement

In conjunction with the *Minimum Expectation*, the project must comply with the following criteria:

- Reducing Energy Use

### Reducing Energy Use

The building uses 30% less energy compared to a reference building.

See *Minimum Expectation* for further information on modelling requirements and on-site renewables.

## Exceptional Performance

In conjunction with the *Credit Achievement*, the project must comply with the following criteria:

- Reducing Energy Use

### Reducing Energy Use

The building uses 50% less energy compared to a reference building.

See *Minimum Expectation* for further information on modelling requirements and on-site renewables.

## Submission content

### Submissions for this credit must contain:

- **Submission form**
- **Energy Use calculator**
- **Evidence** to support claims made in the submission

### Recommended evidence:

- Energy modelling report
- Energy modelling Producer Statement
- Extracts from specifications
- Extracts from commissioning reports
- As built drawings of the façade
- Evidence of renewable energy generation on-site (e.g., contracts, as built drawings)
- Schedule identifying all on-site storage systems installed in the building

Alternate documentation can also be used by project teams to demonstrate compliance.

The recommended evidence listed above is applicable to the as built submission. See the Design Assessment section in the Introduction for more information on submitting evidence for the Design assessment.

The key requirement is that evidence is provided to support each claim made within the Submission form.

## Guidance

### Tenanted and cold shell spaces

For tenanted and cold shell spaces, modelling of energy use can be based on the provision of base building systems to the tenancy and an assumption that minimum NZBC Clause H1 requirements will be met. Modelled energy use for tenanted spaces to be based on the most energy-intensive allowed by base building system requirements outlined in leasing agreement/Tenancy Fitout Guide and NZBC Clause H1 provisions. For Cold Shell spaces where there is no provision for connection to base building systems, the project team are to model standalone (supplementary) tenant systems based on the most energy-intensive allowed by requirements outlined in leasing agreement documentation.

Tenancy Fitout Guidance to identify (including but not limited to) the tenant's allowable internal loads (tenant lighting and equipment power allowances), HVAC system zoning requirements (internal and perimeter zones with independent temperature control), HVAC system type & design capacities, and outdoor air rates. The design team must demonstrate the design provision (e.g., space allowance) that has been made for accommodating the system type modelled.

For further information, please refer to the Energy Use Calculation Guide.

## Supporting information

The following resources support this credit:

- New Zealand Building Code Clause H1/AS2 (1<sup>st</sup> edition or later).
- Green Star Buildings Energy Use calculator
- Energy Use calculation guide
- GBCA's *Climate positive buildings and our net zero ambitions* [to be updated with NZ references]
- [GBCA's Climate Positive Roadmap](#) [to be updated with NZ references]
- World GBC's [Net Zero Carbon Buildings Commitments](#) [to be updated with NZ references]