Energy Source - Industrial

Positive

Credit: 23

Points: 6

Sector Specific credit

Applicability: Industrial buildings leased to tenants, e.g. Distribution centres, Storage warehouse, Manufacturing.

Outcome

The building's energy comes from renewables.

Strategy

Registering from 2020 onwards	**4 Star**	Meets the *Minimum Expectation*
	5 Star	
	6 Star	Meets the *Exceptional Performance*
Registering from 2023 onwards	**4 Star**	Meets the *Minimum Expectation*
	5 Star	Meets the *Exceptional Performance*
	6 Star	
Registering from 2026 onwards	**All ratings**	Meets the *Exceptional Performance*
Certified after 1st January 2030, regardless of registration date	**All certifications**	Meets the *Exceptional Performance*

Criteria

Minimum Expectations	**Nil**	• The building provides a Zero Carbon Action Plan
Credit Achievement	**3 points**	In addition to the *Minimum Expectation*: • The building is fossil fuel free for cooking, heating and domestic hot water • The building has been future-proofed for fossil fuel free energy sources to all process loads • The building has capacity for electric fleet for the building's onsite operations
Exceptional Performance	**3 points**	**– Climate Positive Pathway –** In addition with the *Credit Achievement*: • 100% of the **electricity** under the building owner's control comes from renewables. • The building owner engages with tenants to source renewable energy

Additional information

Scope of credit

All energy under the control of the building owner or operator and all non-electricity energy provided for uses that are not under the building owner's control (e.g., tenant use for heating, cooking, and hot water). Electricity use for tenant loads is excluded from this credit.
For manufacturing energy uses, this credit addresses infrastructure that the building provides to enable zero carbon outcomes. While addressing the energy consumption from tenants is outside the scope of the credit, infrastructure and options provided to tenants by the asset owner to facilitate zero carbon outcomes is within the scope. E.g., If the tenant will be relying on green hydrogen (or a similar blend), the infrastructure should be able (over time) to facilitate this use as it becomes available. Procurement of the tenants energy source itself is within the Tenant Energy Source Industrial Pathway credit.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use

Synergies with other credits

- Verification and Handover
- Tenant Energy Source – Industrial Pathway
- Other Carbon Emissions
- Life Cycle Impacts
- Climate Change Resilience
- Operations Resilience
- Grid Resilience
- Movement and Place

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 Climate Positive Pathway in Green Star Buildings. When the pathway is achieved, a Leadership Challenge point is awarded to the building for a total of 15 points for this pathway.

Tenant Energy Source – Industrial

A project targeting this credit, must target the sector specific *Tenant Energy Source – Industrial* Credit, when targeting the Tenant Energy Source credit.

Requirements

Minimum Expectations

The project must comply with the following criteria:

- Zero Carbon Action Plan

Zero Carbon Action Plan

The project team must develop a Zero Carbon Action Plan for the building, which uses gas for cooking, heating and domestic hot water. The plan must be signed off by the building owner or developer and included in any operational documents for the building.

The Zero Carbon Action Plan must include a target date by when the building is expected to operate as fossil fuel free. The Zero Carbon Action Plan must cover all energy consumption, procurement, and generation and cannot rely on procuring renewable fuels as its only solution. It must also include infrastructure provided for tenants operations such as manufacturing process loads, etc

The Zero Carbon Action Plan must be done prior to the tender phase of the project. The plan must:

- Quantify the building's scope 1 (if any) and 2 emissions between now and 2050 without any interventions
- Quantify the building scope 1 (if any) and 2 emissions in 2050 once all interventions have occurred
- Describe the changes the building is required to undertake to be climate positive as the distinct parts of the building's systems reach end of life
- Identify spatial considerations and physical interventions needed to replace fossil fuel using equipment, refrigerants, and infrastructure
- Perform a cost analysis of the potential costs and savings if the building was designed to be climate positive
- Be signed-off by the building owner or the developer
- It must also outline, if relevant:
- A description of energy-consuming electrical, mechanical, or hydraulic systems and any refrigerants used.
- Any future spatial requirements or changes to plant rooms stemming from changes to existing building systems.
- Any additional capacity built into the building, substations, or building systems to enable any proposed changes. This may include the capacity to accommodate any future additional loads, energy storage or demand response solutions which may occur or be implemented during the life of the building.
- An upgrade or replacement timeline for the distinct systems, or system components, describing the point at which they are to be replaced with the appropriate alternatives.

The outcomes of the Zero Carbon Action Plan must be integrated with other Green Star credits targeted during certification. For example, any performance targets or activities relating the Zero Carbon Action Plan should be outlined in the *Verification and Handover* credit.

Credit Achievement

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

- Fossil Fuel Free Building
- Design for Fuel Switching
- Electric Fleet

Fossil Fuel Free Building

The building does not have any gas infrastructure in place for cooking, heating and domestic hot water.

Tenant process loads are excluded from this requirement.

Design for Fuel Switching

Where the building has infrastructure that uses fossil fuels for tenant process loads, the infrastructure has been designed to adapt to most viable fossil fuel free energy sources for the tenant's process loads.

The design process as a minimum must consider the below steps, but not limited to:

- Engaging with prospective tenants to understand their manufacturing process and reporting the findings to the design team.
- Closest supply of fossil fuel free sources
- Designing the system to be retrofitted to the most viable fossil fuel free source. Where the viable fossil fuel free source is not known, the infrastructure has been designed to all viable fossil fuel free sources available in the market. As minimum, consideration must be given to Hydrogen and Biofuels
- Spatial considerations and physical interventions needed to be fossil fuel free

All design considerations and options are to be included in the relevant documentation in the *Building Information* criteria with any replacements or changes required for delivery of new services during the operation phase

Electric Fleet

The building has been designed with the ability to operate electric fleets for all onsite operations of the building, e.g., forklifts. This can be achieved either through a combination of increased electrical infrastructure and/or a load management plan prepared to allow for future installation of EV charging to all electric fleets.

A minimum, the building must include a dedicated, safe, unobstructed route from the electrical supply point which allows for the future provision of all necessary electrical cabling without the need for substantial builders work in connection to the electrical cabling installation.

Capacity for electric vehicles such as passenger vehicles and trucks are addressed in the *Movement and Place* credit.

Exceptional Performance

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

- Renewable Electricity
- Tenant engagement

Renewable Electricity

All electricity under the control of the building owner is sourced from renewables. Both on-site and off-site renewables are acceptable.

Electricity use under tenant control is excluded from this credit.

Where the project team claims the credit through off-site renewables, the building owner must sign a renewable energy contract. The shortest contract length is:

- Five years
- Where the building is owned and managed by an entity that has signed to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC, the shortest contract length is three years. Other commitments may be acceptable through a Technical Question.

The contract can be part of a corporate power purchasing agreement for a building portfolio.

Refer to the *Climate positive buildings and our net zero ambitions document* for more information on suitable options recognised by Green Star.

Any fossil fuels used for emergency power or systems testing or must be less than 1% of the total building energy consumption and be offset for the first five years of operation.

Tenant Engagement

The project complies with **all** of the following:

- Active Tenant Engagement
- Energy Source Information

Active Tenant Engagement

All standard leasing documents must have a clause for tenants to procure 100% renewable energy.

The building owner actively engages tenants during the lease negotitations to propose a renewable electricity option. The removal of any provisions related to procurement of renewable electricity is only done at the Tenant's request after the building owner has exhausted all options to provide them with a renewable electricity solution.

Energy Source information

The building owner has mechansims in place to collect information from building tenants on their type of energy sources. This can be through leasing requirement for tenants to disclose their annual energy consumption and energy source data.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence:

- Zero Carbon Action Plan with supporting evidence
- Signed PPA including extracts on the length of contract
- Evidence that the PPA or on-site generation covers 100% of electricity or energy
- Draft lease clause extracts and/or meeting minutes demonstrating the negotiation process.
- Lease clause extracts that demonstrate disclose of energy consumption and source data.
- Building metering and monitoring system and lease extracts that allow data disclosure and transparency.
- Public commitment to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC

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 documentation* 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

Quantifying fossil fuels used for fire systems, diesel pumps and other emergency services

Fire systems, diesel pumps and other emergency services that use fossil fuels are quantified in the *Other Carbon Emissions* credit. The amount of carbon emissions to be offset should be based on estimated fuel use from regular scheduled testing and predicted peak shaving events (where it is anticipated systems will be deployed for this use). The fuel-specific emissions factor from National Greenhouse Accounts factors published at the year of project registration (or any subsequent year by choice) must be applied.

Offsets

See *Climate positive buildings and our net zero ambitions* document available from Green Star resources for more information on acceptable offsets.

Green Star rating and renewable energy

Where the building's energy use comes from renewables, the Green Star certificate will note that the building's rating is valid provided the procurement of renewable electricity or energy continues. Should the building not continue to be powered by renewables, the building owner can no longer communicate the rating.

Market-based method and the renewable power percentage (RPP)

Project teams can claim the percentage of renewable energy in the grid (the RPP) as published by the Clean Energy Regulator at the date of Practical Completion of the building as off-site renewable energy supply.

For further information, refer http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/the-renewable-power-percentage

Projects located in ACT where the state government has purchased 100% Green Power can claim this as off-site renewable electricity.

Electric Fleet

The number of electric fleets that have been incorporated in the building's design should be justified in the submission. This may be dependent on the building owner's brief at the time of the tender or design stage.

Renewable energy options for industrial process heat

This is a study commissioned by the Australian Renewable Energy Agency (ARENA) to determine the potential opportunity for integrating renewable energy into industrial process heat applications in Australia. Project team are encouraged to review the report for potential renewable energy options available in Australia. The report can be assessed here

Supporting information

The following resources support this credit:

- GBCA's Climate positive and our net zero ambitions
- GBCA's Climate Positive Roadmap
- World GBC's Net Zero Carbon Buildings Commitments
- Clean Energy Regulator's Renewable Power Percentage