

Advancing Net Zero Snapshot: Singapore

Context

Singapore, through its Nationally Determined Contribution (NDC), is committed to reduce the country's emissions intensity by 36% from 2005 levels by 2030, and to stabilise emissions with the aim of peaking emission around 2030. The low-emissions development strategy (LEDS) aspires to halve emissions from its peak to 33 MtCO₂e by 2050, with a view of achieving net-zero emissions as soon as viable in the second half of the century. Green building is one of the key strategies and is on track to green 80% of Singapore buildings' gross floor area (GFA) by 2030.

Pathway: Certification and Advocacy

Launch date: September 2018

The Super Low Energy Building (SLEB) programme, in addition to the established Green Mark (GM) certification scheme, was developed by the Singapore Building and Construction Authority (BCA) to encourage the industry to achieve high building energy performance in a cost-effective manner. The SLE programme includes certification for best-in-class energy efficient buildings, Zero Energy Buildings (ZEB) and Positive Energy Buildings.

Building projects which achieve GM SLEB and ZEB certification will be given additional recognition for achieving the best-in-class energy efficient buildings beyond their Green Mark target ratings. Expected benefits from SLEB and ZEB projects include higher energy savings over the building's life cycle and reduced carbon emissions to the environment.

GBC Definition

Super Low Energy (SLE): Best-in-class energy performing building that achieves at least 40%+ energy savings based on prevailing code

Zero Energy (ZE): Best-in-class energy performing building with all energy consumption, including plug load, supplied from renewable sources

Positive Energy (PE): Best-in-class energy performing building with 115% of all energy consumption, including plug load, supplied from renewable sources.



1. Measure and Disclose Carbon

Verification is based on 12-month actual operation data of energy consumption and renewable energy.

Given geographical constraints of renewable energy generation and procurement, approach focuses on reducing energy demand and optimise renewable energy capacity.



2. Reduce Energy Demand

Minimum Green Mark Gold must be achieved.

For SLE, achieve at least 40% energy saving based on prevailing code.

For ZE, if off-site renewable energy is used, the Energy Use Intensity (EUI) of the building should be less than benchmarks.



3. Generate Balance from Renewables

For ZE, the use of onsite and off-site renewable energy should generate more than 100% of energy needed for building operations.

Solar feasibility studies and solar ready roofs are encouraged.



4. Improve Verification and Rigour

A whole-life carbon approach covering all lifecycle impacts will be developed in the future

Methodology and Verification

- Green Mark SLE involves optional pre-assessment, assessment including total predicted annual electricity consumption and renewable energy generation, and verification of energy performance data

Additional Information

- Singapore Green Building Council (SGBC) forges public-private partnerships to foster innovative industry solutions, including green building product and green building services certification programmes, directly supporting the Green Mark scheme.
- In addition to public energy performance disclosure to facilitate benchmarking and encourage retrofitting measures to improve energy efficiency of buildings, there are plans to raise the minimum energy performance standards for both new and existing buildings in the coming years.

Find out more

- [Legislation on Environmental Sustainability for Buildings](#)
- [BCA SLEB Programme](#)
- [WorldGBC's Advancing Net Zero global project](#)

Advancing Net Zero

WorldGBC's global project to accelerate uptake of net zero carbon buildings to 100% by 2050. These snapshots outline specific GBC action, and how it relates to the project framework, including the four key principles shown left.