

Net Zero Statement

This note outlines how to prepare a Net Zero Statement when one is required under the NSW Sustainable Buildings SEPP. A Net Zero Statement describes how a project will avoid dependence on fossil fuels and be capable of operating at net zero emissions by 2035.

NSW has whole-of-economy targets to reduce greenhouse gas emissions by 70 per cent by 2035 compared to 2005 levels and reach net zero emissions by 2050. Achieving these targets will require all new and existing buildings in NSW to be operating at net zero well before 2050. The Net Zero Statement is an incremental step to reach these targets. Clause 35C of the Environmental Planning and Assessment Act Regulation outlines the requirement for certain developments under the State Environmental Planning Policy (Sustainable Buildings) 2022 to submit a Net Zero Statement with a development application. This technical note provides guidance to applicants and assessors.

What is a net zero development?

For the purposes of the Sustainable Buildings SEPP (or SB SEPP) net zero refers to operational energy only and is associated with building emissions from on-site fossil fuels and electricity consumption. It does not include energy associated with waste or transport. Embodied energy is addressed separately through the embodied emissions requirement of the SB SEPP.

Net zero operations are achieved by eliminating the use of fossil fuels, improving energy efficiency, generating renewable energy onsite and procuring 100% renewable energy for the remaining energy needs.

Whilst the NSW government encourages the electrification of buildings this is not a requirement. However, buildings that use fossil fuel-dependent systems must provide a transition strategy as part of their net zero statement confirming how the development will operate as fossil fuel-free by 2035.

How to design for net zero

Achieving net zero operations involves designing high-performing, energy-efficient

buildings that optimise the envelope to reduce heat gain/loss, specifying building systems that reduce energy demand, and providing onsite renewable energy generation to reduce dependence on the electricity grid.

Key considerations for the building envelope include - improved thermal performance through increased insulation, higher glazing performance, increased shading provision and enhanced sealing of the building fabric. Where possible consider orientation of the building to maximise daylight and/or natural ventilation.

Key considerations for building systems include - energy performance of HVAC systems, electrification of energy by converting heat plant for DHW or HHW to heat pumps, optimised lighting layouts with motion sensors and time controls, enhanced lift efficiencies through destination control and reduction of standby power, installation of higher efficiency rated appliances and equipment and reduction of hot water energy consumption through installation of low flow fixtures, insulating hot water pipes and heat

recovery. Consider local and/or centralised hot water systems depending on hot water usage.

Key considerations for renewable energy generation include – rooftop photovoltaic (PV) and building integrated PV systems for electricity generation, and solar thermal systems and heat pumps for hot water generation. Consider energy storage such as batteries or thermal storage to support grid stability. Any energy use not met by on-site renewables should be met by investment into additional renewable energy capacity off-site.

When is the statement required?

The SB SEPP requires a Net Zero Statement to be submitted with a development application for large commercial developments (offices with a net lettable area of at least 1,000m², hotel or motel accommodation with at least 100 rooms and serviced apartments with at least 100 apartments) and certain State Significant Developments with cultural, health and educational uses as specified in *State Environmental Planning Policy (Planning Systems) 2021*, Schedule 1, sections 13–15.

What needs to be included?

The SB SEPP requires that affected developments are designed to be either fossil fuel-free immediately upon occupation and use or where fossil fuel-dependent building systems are used, provide a transition strategy to confirm how the development will operate as fossil fuel-free by 2035.

The Net Zero statement will be approximately 3-4 pages long and can be a written document and/or tabulated. It should include –

Cover Letter and Certification - All evidence and information within the statement must be certified by a qualified mechanical or electrical engineer. This certification ensures the accuracy and credibility of the statement.

The certification should be in the form of a cover letter and identifying which of the two net zero pathways applies to the development.

On-Site Fossil Fuel Usage- If the development will not use on-site fossil fuels after occupation explain how the development will be designed and operated to eliminate use of on-site fossil fuels. Detail alternative energy sources or technologies that will replace fossil fuel consumption. Reference drawings or reports that provide supporting evidence.

If the development is designed to transition to operate as fossil fuel-free in future specify and describe the fossil fuel systems proposed (gas boilers for domestic hot water or space heating, gas for cooking or laboratories) and why they have been used rather than fossil fuel-free alternatives. Detail how each fossil fuel-dependent system will transition to all-electric in the future and give evidence of the infrastructure or space for the infrastructure (such as plant, equipment, and ventilation systems), that has been incorporated into the design to enable the transition with reference to drawings or reports.

Renewable Energy Generation and Storage - Provide details of any renewable energy generation and storage infrastructure that will be part of the development. Describe the technologies (solar panels, photovoltaics, wind turbines, batteries, thermal storage etc.), their capacity, and how they will contribute to offsetting energy consumption.

Energy-Efficient Design – Outline integrated passive design features to minimise energy consumption, such as building orientation, shading, natural ventilation, airtightness and insulation. Explain the technical design features implemented to further reduce energy consumption, such as efficient lighting systems and layouts, HVAC systems, smart controls, and other energy-saving technologies.

Energy Consumption and Emissions

Calculations (if information is available) -

Provide the estimated annual energy consumption for the building in kilowatt hours per square meter (kWh/yr/m²) of Gross Floor Area (GFA). Include calculations for all energy sources used in the building (electricity, gas, diesel etc.). This information helps assess the efficiency of the design.

Detail the estimated amount of greenhouse gas emissions related to energy use in the building. Include both direct emissions (Scope 1) and indirect emissions (Scope 2 & 3). This can be calculated using emission factors for each of the development's energy sources (refer to Australia's National Greenhouse Accounts Factors).

It is acknowledged that these calculations will be based on predicted energy use, heating and cooling loads, and overall energy efficiency at the design application stage. In the absence of specific data assumptions will need to be made about factors such as equipment efficiencies, occupancy patterns, lighting types, and HVAC systems and will likely utilise energy software to simulate the building's energy consumption based on its design. Please include your assumptions as part of the statement.

Who should prepare the statement?

The Net Zero Statement can be prepared by any qualified member of the design team (architect, designer, engineer etc) however, it must be certified by a qualified mechanical or electrical engineer.

Collaborative input from the design team will support the approach, including building services engineers (overall systems design), architects (spatial layouts for infrastructure), structural engineers (load for infrastructure), and acoustic engineers (noise treatment for building systems and plant).

City of Sydney requirements

The City of Sydney Council is introducing energy and net zero requirements for large commercial development (offices, shopping centres and hotels) from 1 October 2023. These requirements will be outlined in the City of Sydney Development Control Plan.

From 1 January 2026, prescribed large commercial developments in the City of Sydney will have to demonstrate they will be net zero energy for the first five years of operation, using 100% renewable energy through onsite and/or offsite renewable energy sources.

Affected developments in the City of Sydney should still submit a Net Zero Statement with a development application and any additional information requested by the City of Sydney.

Further information

Details about the legislation relating to the Net Zero Statement can be found in:

[State Environmental Planning Policy \(Sustainable Buildings\) 2022, Chapter 3.3-3.4.](#)

[Environmental Planning and Assessment Act Regulation Amendments, 35C](#)

Further guidance on fossil-fuel-free building solutions is available from:

[GBCA Practical Guides to Electrification of new and existing buildings.](#)

[Better Buildings Partnership electrification resource kit for asset managers and facility managers.](#)

[A2EP Commercial and industrial air source heat pump water heaters – Technical guidance.](#)

Net Zero Statement Checklist

Cover Letter

- Project details and overview
- Confirm if development is fossil fuel-free or requires a transition strategy.
- Certified and signed by a mechanical or electrical engineer

On-Site Fossil Fuel Usage

If development is fossil fuel-free:

- Provide evidence of fossil fuel-free operations

If development is fossil fuel dependent:

- Provide details of each fossil fuel system used and electrification transition strategy.

Provide evidence the development will operate without fossil fuel by 2035 by confirming it -

- Incorporates infrastructure or space for necessary infrastructure to transition – plant, equipment, ventilation etc

Energy Efficiency

Have energy reduction initiatives been described for the following? -

- Passive design features – building orientation, natural ventilation, insulation, glazing performance, air tightness etc.
- Technical design features – energy efficient HVAC and lighting systems, smart controls and occupancy sensors etc.

Renewable Energy Generation and Storage

- Have renewable energy or storage initiatives been described? – solar panels, photovoltaics, wind turbines etc.

Estimated Energy Consumption if available

- Estimated fossil fuel consumption per year
- Estimated electricity consumption per year
- Total estimated energy consumption per year kWh/y/m² of GFA

Estimated GHG emissions for energy use if available

- Estimated direct (scope 1) GHG emissions per year
- Estimated indirect (scope 2 and 3) GHG emissions per year
- Total estimated GHG emissions per year

Abbreviations & Glossary

DHW – Domestic hot water

GFA – Gross floor area

GHG – Greenhouse gas emissions

HHW – Heating hot water

HVAC – Heating, ventilation and air conditioning

PV – Photovoltaic

SB SEPP – State Environmental Planning Policy (Sustainable Buildings) 2022

Emission scopes – A mechanism for classifying different sources of GHG emissions used in carbon accounting. There are three ‘scopes’

- **Scope 1** covers direct emissions from on-site fuel combustion (e.g. diesel, natural gas and LPG).
- **Scope 2** covers indirect emissions from the consumption of purchased electricity, steam, heating and cooling.
- **Scope 3** covers indirect emissions from activities not owned or controlled by the reporting organisation, including production of fuels, electricity transmission losses, embodied carbon in construction and maintenance (including materials and products) tenant energy consumption, waste treatment, water treatment and travel to/from the building.