



ABCBC

# Commercial energy efficiency project: Rationale and scope

At the direction of the Building Ministers, the Australian Building Codes Board (ABCBC) is developing possible changes to the National Construction Code's commercial building energy efficiency provisions. If agreed, the changes will be included in the next edition of the National Construction Code (NCC).

The changes being investigated include:

1. increasing the energy efficiency of the building envelope and services
2. specific provisions for onsite renewable energy and electric vehicle (EV) charging equipment.

The objectives of these changes are to:

- reduce greenhouse gas emissions
- reduce running costs
- provide an internal environment which is more resilient to extreme heat and cold
- assist the de-carbonisation of Australia's electricity grid.

## Rationale

Commercial buildings are responsible for around 25% of electricity use and 10% of greenhouse gas emissions in Australia.<sup>1</sup> To reduce these impacts, in 2019 Energy Ministers requested Building Ministers implement ongoing changes to the NCC's energy efficiency

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<sup>1</sup> <https://www.energy.gov.au/government-priorities/buildings/commercial-buildings>

provisions. The changes are to align with the *Trajectory for Low Energy Buildings*<sup>2</sup> (the Trajectory) policy which:

- supports a 40% improvement in national energy productivity by 2030, and
- outlines progressive increases in the energy efficiency and renewable energy provisions in the NCC over the 2022-2030 period. In addition to supporting the Trajectory, the energy efficiency changes will support the Australian Government's commitment to reduce greenhouse gas emissions by 43 per cent by 2030<sup>3</sup> and achieve net zero by 2050.<sup>4</sup>

## Scope

The scope of this project is limited to commercial buildings, which is defined as Class 2 building common areas, Class 3 buildings, and Class 5 to 9 buildings. This includes but is not limited to buildings like hotels, offices, schools, healthcare, community centres and warehouses.

The development of the new commercial energy efficiency provisions will require extensive research, energy modelling and economic analysis. Expert consultants are being engaged by the ABCB to carry out this work.

Examples of the type of research which will be undertaken include:

- Investigation of possible improvements to the efficiency and emissions of Heating, Ventilation, Air-conditioning and Cooling (HVAC) systems.

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<sup>2</sup> <https://www.energy.gov.au/government-priorities/buildings/trajectory-low-energy-buildings>

<sup>3</sup> <https://www.dcceew.gov.au/climate-change/international-commitments#:~:text=Nationally%20Determined%20Contributions&text=Australia%20submitted%20its%20first%20NDC,NDC%20on%20the%20UNFCCC%20registry>

<sup>4</sup> <https://www.dcceew.gov.au/climate-change/publications/australias-long-term-emissions-reduction-plan>

- Investigation of possible improvements to the building envelope to lower energy peak demand (especially the summertime cooling peak), increase resilience to extreme heat and cold, reduce thermal bridging and generally lower energy costs.
- Investigation of the costs, benefits and consequences of possible provisions for on-site renewable energy and EV charging equipment.
- Investigation of possible improvements to the existing energy modelling Verification Methods.

Based on this research, changes to the NCC's commercial energy efficiency provisions will be developed at the following three possible stringency levels:

1. Societally cost-effective energy efficiency stringency not including onsite solar photo-voltaic panels (PV) (other than business-as-usual (BAU)), to maximise energy reduction, while maintaining a benefit-cost-ratio (BCR) of at least 1 at the building level.
2. Societally cost-effective energy efficiency stringency including onsite PV (in addition to BAU), to maximise energy reduction, while maintaining a BCR of at least 1 at the building level.
3. Societally least cost zero regulated energy and zero carbon-ready buildings.

## **Consultation and assessment**

Importantly, the changes being considered will be subject to extensive industry consultation.

In addition to the ABCB's national technical committee, the Building Codes Committee, a technical reference group has been established for obtaining project-specific advice. Other relevant industry associations will also be consulted when required.

A Public Comment Draft of the proposed NCC changes, together with an economic assessment of the changes, will be released in the first half of 2024. Comments received on these documents will inform the final NCC changes.

Members of the technical reference group include:

- Air conditioning and Refrigeration Equipment Manufacturers Association of Australia (AREMA)
- Australian Building Sustainability Association (ABSA)
- Australian Glass and Window Association (AGWA)
- Australian Institute of Architects (AIA)
- Australian Institute of Building Surveyors (AIBS)
- Australian Institute of Refrigeration Air conditioning and Heating (AIRAH)
- Australian Sustainable Built Environment Council (ASBEC)
- Building Designers Association of Australia (BDAA)
- Building Products Industry Council (BPIC)
- Chartered Institution of Building Services Engineers (CIBSE)
- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- Department of Customer Service New South Wales
- Green Building Council of Australia (GBCA)
- Master Builders Australia (MBA)
- National Australian Built Environment Rating System (NABERS)
- Property Council of Australia (PCA)
- Queensland Department of Energy and Public Works (QEPW)
- Victorian Building Authority (VBA)

## **Impact Assessment**

An impact assessment will be undertaken to inform consideration of the appropriate level of stringency of the changes. This will include assessment of costs and benefits, as well as possible unintended consequences arising from the proposed new provisions.

As mentioned above, the impact assessment will be released for public consultation to test the assumptions and methodologies used in the assessment.