

16 November 2022



To City of Melbourne,

Thank you for the opportunity to make a submission for the Zero Carbon Buildings Melbourne. [Beyond Zero Emissions](#) (BZE) is an independent solution focussed think tank and we strongly endorse the City of Melbourne's work on advancing the rollout of building retrofits to achieve zero carbon ready status.

We welcome this consultation and in particular recommend the following important elements be considered as part of the initiatives:

- Go hard, go electrification initiative
- E-mobility ready buildings initiative

Our recent Deploy report highlighted the need for building retrofits: *"There are no technological barriers to achieving a 100% emissions reduction in Australia's buildings sector. We can cut building emissions by 75% over the next five years by deploying clean technology.*

*Buildings (commercial and households) currently account for 20% of Australia's emissions, primarily from electricity use and burning gas for heating, hot water and cooking."*¹

Please find below our feedback on initiatives posed in your consultation document.

Yours Sincerely,

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Beyond Zero Emissions' response to [Zero Carbon Buildings for Melbourne](#)

Support for initiatives

Beyond Zero Emissions (BZE) broadly supports the initiatives of *Zero Carbon Buildings for Melbourne*. The City of Melbourne has a strong record and proven leadership role in promoting building energy efficiency outcomes.

BZE recognises the important role building retrofits can play in decarbonisation. Existing buildings will make up the majority of building stock out til 2040. In 2013 our *Zero Carbon Australia Buildings Plan*² showed there are no technological barriers to building decarbonisation. The benefits are clear, delivering lower energy bills, reducing network loads and creating more comfortable and liveable workplaces, homes and public places.

For consideration, BZE makes the following recommendations to build on the initiatives:

Recommendation 1: Go hard, go electrification

BZE recommends that the City of Melbourne prioritise building electrification as a minimum and pursue effective initiatives towards Zero Carbon Ready Buildings in Melbourne.

Building electrification delivers both energy efficiency and building bill savings. Our latest report, *Deploy*¹, highlights the opportunity to fit and retrofit buildings as all-electric to take advantage of the National Electricity Market (NEM) adopting an increasingly higher penetration of renewable energy. AEMO's ISP *Step Change* scenario forecasts that renewables will supply 83% of grid electricity in the NEM by 2030³ - stakeholders consider this scenario to be the most likely. Switching away from gas equipment / appliances to electric offers a clear path towards rapid decarbonisation, with no need for gas to act as a bridging fuel.

BZE recognises the benefits of holistic approaches to building energy efficiency, this includes building fabric upgrades, see Figure 1 from BZE's *Zero Carbon Australia Buildings Plan*² report. As a priority initiative, retrofitting buildings to all-electric will likely be the fastest and most cost-effective method to achieving Zero Carbon Ready status ahead of a high renewable powered NEM.

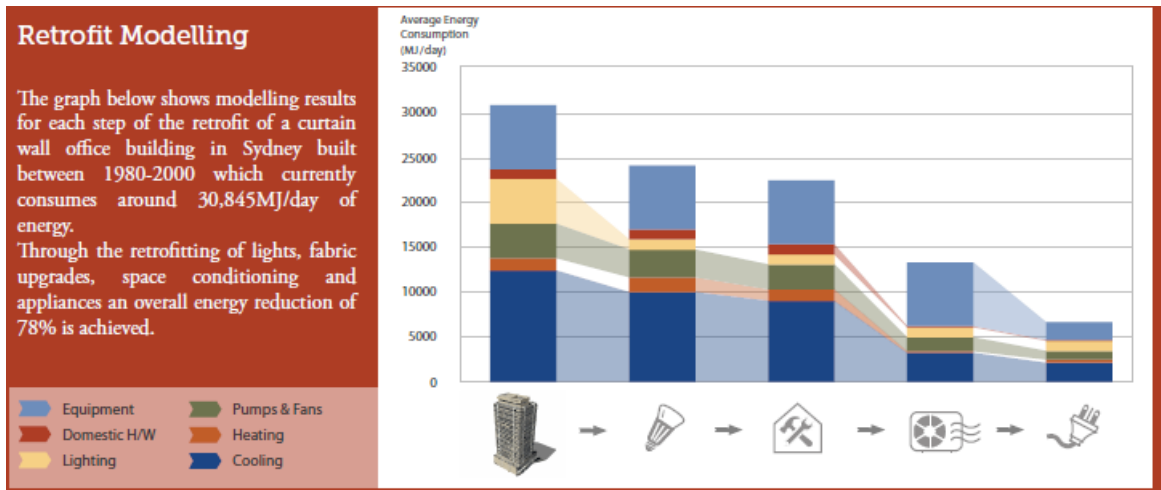


Figure 1: BZE modelled energy upgrade case study of a curtain wall tower building in Sydney from Zero Carbon Australia Buildings Plan²

Efficient all-electric buildings, as modelled in BZE's *Zero Carbon Australia Buildings Plan*² demonstrate the energy saving benefits of retrofits. Switching away from gas will require three target areas in hot water heating, space heating and cooking.

Table 1: Non-residential building stock proposed electrification retrofits and expected energy savings

End Use	Proposed Retrofit	Expected Energy Savings
Hot Water	Heat pump replace existing gas or electric service	~75%
Space Heating	Heat Pump Boiler	~50% (Heat pump COP 4 then derate due to lower heat sources elsewhere in teh building)
Cooking	Induction cooktops and electric ovens	26% (base electric), 63% (base gas)

To better support the rapid electrification of commercial building stock, City of Melbourne may want to consider:

- **Adding a separate clear, targeted electrification initiative**
- **Assisting asset managers to access energy efficiency grants** to undertake electrification studies and upgrades through the Federal Government's October budget announcement - *Energy Efficiency Grants for Small and Medium Sized Enterprises*.⁴

Recommendation 2: E-mobility ready buildings initiative

Buildings are uniquely positioned to support decarbonisation initiatives beyond the building with the opportunity to integrate retrofit initiatives which will encourage adoption of electric modes of transport.

BZE recently submitted a consultation paper to the Federal Government's *National Electric Vehicle Strategy*. In this paper, BZE was supportive of driving uptake of electric bikes and micro-mobility, including associated charging and road infrastructure. Buildings and workplaces that can provide scooter and bicycle parking have an opportunity to provide charging infrastructure to incentivise e-mobility transport. Our submission was also keen that new builds be electric vehicle (EV) ready and retrofits be encouraged to ensure a percentage of car spaces have EV chargers to encourage EV take up and use. This is an important opportunity to support transport decarbonisation alongside building decarbonisation actions.

To support broader decarbonisation initiatives, City of Melbourne may want to consider:

- **Adopting an e-mobility ready buildings initiative alongside the other 7 initiatives.**

References

1. Beyond Zero Emissions. (2022). *Deploy*.

https://bze.org.au/wp-content/uploads/2022/10/Deploy-Report_web.pdf

2. Beyond Zero Emissions. (2013). *Zero Carbon Australia Buildings Plan*.

<https://bze.org.au/wp-content/uploads/2013/08/buildings-plan-bze-report-2013.pdf>

3. Australian Energy Market Operator (AEMO). (2022). *2022 Integrated System Plan (ISP)*.

<https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp>

4. Australian Government. (2022). *Budget October 2022-23*.

<https://budget.gov.au/2022-23-october/content/stronger-economy.htm>