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Queensland Productivity Commission
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Dear Commissioners,

I am writing to recommend the 2022 NCC reforms for energy efficiency be retained in Queensland and the proposed 2025 NCC energy efficiency reforms be adopted as soon as possible.

The Interim Report of the Queensland Productivity Commission states:

> *Industry stakeholders have expressed concerns about the increasing complexity and cost involved in complying with building codes and standards… For example, recent changes to energy efficiency and accessibility standards in the NCC were adopted despite having been assessed as imposing net costs on the community. (28)*
>
> *There is a strong case for Queensland to opt out of any regulatory change, including changes to the NCC, where a net benefit has not been demonstrated.*[1] *(29)*

With respect to energy efficiency standards in the NCC, the evidence below authoritatively demonstrates the net benefits of the existing and proposed new energy efficiency standards.

Why is regulation necessary in this sector?

Residential buildings are a major source of energy demand and use. They currently account for approximately 7.9% of Australia's energy use (across all fuels), around 29% of electricity use and are responsible for around 11% of Australia's GHG emissions. Residential buildings can contribute significantly to reaching the target of improving Australia's energy productivity by 40% between 2015 and 2030 by reducing Australia's energy use by 84 PJ.[2]

Commercial buildings are also a significant energy user and GHG emitter. In 2020, these buildings consumed 227 petajoules (PJ) of electricity and 40 PJ of gas, accounting for 23.8% of Australia's total electricity consumption.[3]

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[1] Queensland Productivity Commission, *Opportunities to Improve the Productivity of the Construction Industry*, Interim Report, 2025, pp.28-29.
[2] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.xi. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf
[3] Centre for International Economics (CIE), *Increasing the Stringency of the commercial building energy efficiency provisions in the 2025 National Construction Code*. *Consultation Regulatory Impact Statement*, Final Report, 2024, p.5.
https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

There are a number of market failures that inhibit socially optimal energy efficiency decisions, and result in over consumption of energy and underinvestment in energy efficiency. These include:

- Unpriced negative effects (externalities) associated with energy consumption which result in energy prices that do not fully reflect the cost of consuming energy (which includes the cost of GHG emissions and externalities associated with peak demand).
- Information problems, where households do not have perfect information about available energy efficiency opportunities and transactions that are cost effective and hence these opportunities are not taken, resulting in economically inefficient outcomes.
- Split incentives, where the parties engaged in a contract for a new building have different goals, and different levels of information and incentives. This may result in under-investment in cost effective energy efficiency measures.[4]

These market failures justify regulatory measures to achieve net household, building and community wide benefits.

Are NCC energy efficiency measures suitable for Queensland?

The NCC measurement tools, primarily the Nationwide House Energy Rating Scheme (NatHERS), set different requirements for different climatic zones including regionally tailored, climate specific insulation and ventilation standards. The overall heating and cooling expectations for a home in SEQ are lower than for a home in Victoria.[5]

Passive design principles – and building to suit the site's climate zone – can play a large role in helping home builders comply with the new 7-star energy efficiency requirement.[6] Design features particularly relevant for Queensland include:

- Orientation – favour a north facing orientation for principal living areas
- Outdoor living – capitalise on natural breezes and air flow
- Roof and wall colours – use light colours to reflect heat
- Eliminating downlights – these interfere with options for ceiling insulation
- Increase zoning – use doors to close off areas that are likely to use air conditioning; and
- Ceiling fans.[7]

In Queensland, thanks to its generally milder climate, attaining a 7-star energy rating can be achieved at lower cost than in other states.[8]

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[4] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.xi. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

[5] *NatHERS heating and cooling load limits*, ABCB Standard 2019.1. See: https://abcb.gov.au/sites/default/files/resources/2022/ABCB-Standard-NatHERS-heating-cooling-load-limits.pdf

[6] NATHERS newsletter, "Top tips for building for 7 stars" at https://www.nathers.gov.au/sites/default/files/2022-09/22726_Nathers_Newsletter.pdf

[7] https://www.yourhome.gov.au/passive-design/passive-cooling

[8] https://new.gbca.org.au/news/gbca-media-releases/new-ncc-standards-driving-energy-efficiency-at-low-cost/

Cost-benefit analysis of the 2022 energy efficiency NCC reforms

In July 2022 an independent report was prepared for the ABCB examining the full costs and benefits of the NCC 2022 energy efficiency reforms. This Decision Regulatory Impact Statement (RIS) was assessed as compliant with the Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies by the Office of Best Practice Regulation.[9] The 2022 RIS conclusively determined the current standards, as adopted, are the most cost-effective way forward for improving the energy efficiency of new households. There are demonstrable net benefits to individual households and society more broadly (reducing carbon emissions and peak energy demand). There is **no case** for opting out of these reforms.

Options the RIS examined included:

- Maintaining the status quo.
- Option A: A minimum level of thermal performance equivalent to 7 stars NatHERS, plus a whole-of-home annual energy use budget applicable to the home's space. conditioning, hot water, lighting, pool and spa pumps, and on-site renewables (typically rooftop photovoltaics – PV)
- Option B: Similar to Option A, but with a larger whole-of-home annual energy use budget, which permits lower performing, energy efficient equipment and/or less PV to be installed. Option A's annual energy use budget is 70 per cent of Option B's.

The RIS found a combination of these options, i.e. Option A for Class 1 buildings (standalone houses) and Option B for Class 2 buildings (apartments), to be the most effective way to meet the objectives of achieving the highest greenhouse gas abatement at lowest cost to the economy; lowering the cost of household energy bills; and improving occupant comfort and resilience to extreme weather.[10] This combination was the adopted solution for Queensland.

The RIS assessed what the costs of complying with the new NCC energy efficiency requirements would be on median house prices in different states and territories and on overall household incomes. On average, it estimated the price of houses under Option A (the adopted solution) would increase by 0.1 per cent in Queensland and the price of apartments under Option B (the adopted solution) would increase by 0.2%.[11] In most cases these costs would be included in the house price so homebuyers would not have to pay it upfront. Rather, this extra cost would become part of their annual mortgage payments. It estimated the average increase

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[9] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.xi. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

[10] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.xxxii. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

[11] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.242. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

in mortgage repayments would be $31 per annum (or around 59 cents per week) for a house in Queensland and $33 per annum (63 cents per week) for an apartment.[12]

These additional payments would be immediately offset by lower energy bills as a result of the energy efficiency improvements in the house. These lower bills would have the effect of increasing household disposable income as lower bills imply the availability of extra funds for spending on other items such as mortgage repayments. In Queensland, the net benefit for houses (adopting Option A) was calculated at $53 per annum. The net benefit for apartments (adopting Option B) was $38 per annum.

The best available, verified independent evidence confirms the 2022 NCC reforms, as adopted, are the most cost-effective way forward for improving the energy efficiency of new households to the mutual benefit of individual households and society more broadly (reducing carbon emissions and peak energy demand).

The evidence of the 2022 RIS is clear: the 2022 NCC efficiency standards deliver demonstrable net benefits to households and to society. **There is no case for opting out of these reforms.**

Cost-benefit analysis of the proposed 2025 NCC energy efficiency reforms

The current energy efficiency requirements were reviewed in 2024 with a view to adopting higher energy efficiency standards for new homes and new commercial buildings. For new homes, the proposed changes under review include requiring more switchboard capacity to enable full electrification and requiring infrastructure to support faster domestic charging. These proposed measures are demonstrably cost effective. For instance, the cost of infrastructure to support faster domestic charging is estimated at $15 at the time of installation and around $600 for retrofitting at a later date.[13]

For commercial buildings,[14] the proposed changes are more extensive. They include a requirement to install PV panels on-site depending on roof space, climate zone and building classification. Requirements to facilitate future electrification are also under consideration and so too are extensions to the Commercial Buildings Disclosure requirements.

In 2024, the Australian Building Codes Board (ABCB) engaged the Centre for International Economics (CIE) to prepare a Consultation Regulation Impact Statement (CRIS) assessing the

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[12] ACIL Allen, *National Construction Code 2022 Decision Regulation Impact Statement for a proposal to increase residential building energy efficiency requirements*, 2022, p.246. https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

[13] https://www.abcb.gov.au/pcd/pcd-2025-assisting-future-electrification-and-ev-charging-homes

[14] The commercial buildings covered are: common areas of Class 2 (apartments), Class 3 buildings (hotels and other commercial accommodation facilities), Class 5 buildings (offices), Class 6 (retail buildings, such as shops, restaurants and cafes), Class 7 buildings (carparks and warehouses), Class 8 buildings (factories) and Class 9 buildings (health care, education, sporting and aged care buildings). Centre for International Economics (CIE), *Increasing the Stringency of the commercial building energy efficiency provisions in the 2025 National Construction Code*. *Consultation Regulatory Impact Statement*, Final Report, 2024, p.5.

costs and benefits of the proposed changes to the commercial building energy efficiency requirements in NCC 2025.[15] The CIE assessed three levels of stringency:

> Stringency Level 1: Cost-effective energy efficiency without mandated on-site photovoltaics (PV). Stringency Level 1 includes proposed energy efficiency provisions for improving the performance of the building envelop and equipment.
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> Stringency Level 2: Cost-effective energy efficiency with mandated on-site PV. Stringency Level 2 introduces additional mandated on-site PV requirements to Stringency Level 1.
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> Stringency Level 3: Least cost zero carbon ready buildings. Stringency Level 3 covers least cost zero carbon provisions that achieve net zero GHG emission ready buildings (for when the grid decarbonises) with respect to regulated energy (i.e. the energy use of equipment regulated through the NCC). This option extends Stringency Level 2 to provide full electrification readiness and to require additional PV to offset emissions from gas appliances compared with an all-electric equivalent. This means that under Stringency Level 3, a building's operational carbon emissions will be no higher than an equivalent all-electric building.[16]

Its research identified all three options under consideration will deliver significant net benefits compared with current NCC 2022 requirements.

Additional findings are:

- Option 1 (cost-effective efficiency without mandated on-site PV) is estimated to deliver net benefits of around $6.7 billion in net present value terms:
- Option 2 (cost-effective efficiency with mandated on-site PV) is estimated to deliver the highest net benefits of all the options — around $11 billion in net present value terms; and
- Option 3 (least cost zero emissions buildings) is estimated to deliver slightly lower (3%) savings than Option 2 at around $10.6 billion. However, if dual fuel buildings (Option 3) will be required to convert to fully electric when the gas equipment needs replacing (after 20 years), the net benefits from Option 3 would be greater than Option 2. If the probability of requiring electrification in 20 years is greater than 28% the expected net benefits from Option 3 would be greater than Option 2.[17]

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[15] Centre for International Economics (CIE), *Increasing the Stringency of the commercial building energy efficiency provisions in the 2025 National Construction Code*. *Consultation Regulatory Impact Statement*, Final Report, 2024.
https://www.abcb.gov.au/sites/default/files/resources/2025/Energy%202022%20RIS%20-%20Decision%20RIS%20final.pdf

[16] Centre for International Economics (CIE), *Increasing the Stringency of the commercial building energy efficiency provisions in the 2025 National Construction Code*. *Consultation Regulatory Impact Statement*, Final Report, 2024, p.7.

[17] Centre for International Economics (CIE), *Increasing the Stringency of the commercial building energy efficiency provisions in the 2025 National Construction Code*. *Consultation Regulatory Impact Statement*, Final Report, 2024, p.10.

In all three scenarios, it found the proposed reforms will result in significant net benefits compared with current NCC 2022 requirements. **On a cost-benefit basis, the case for adopting these reforms is conclusive.**

Importance of destination charging

The CIE also considered a proposed measure to introduce mandatory destination charging for EVs in commercial buildings. It reported mandatory EV charging facilities deliver net costs and suggested this element might need to be decoupled from the other requirements and considered separately.[18] One reason for this conclusion was that people prefer to charge their vehicles at home.

This recommendation ignores the Queensland specific context. In Queensland, midday electricity prices are frequently negative – meaning consumers have the option of being paid for charging their vehicles during the day at work – a scenario even more beneficial than charging at home from rooftop solar.[19] In fact, we have so much peak midday solar production, the Queensland electricity grid faces midday network stability issues that will incur ongoing costs to address. It is imperative that all load shifting opportunities are realised as quickly as possible – including destination charging at commercial venues where cars are parked during daytime hours. Load shifting at scale can efficiently bring down the cost of transitioning to a grid with very high solar penetration.[20] For this reason, **it is imperative the Queensland Government adopt the proposed destination charging measures** as well as the energy efficiency measures proposed for commercial buildings.

Housing affordability

Housing affordability is determined by a range of factors influencing demand and supply. Housing supply is driven by factors such as land availability, construction costs, profitability for developers and infrastructure costs such as water, power, sewerage and public transport. Housing demand is driven by factors such as the number and type of households looking for housing, household income and preferences (such as size, location and tenure type), investor demand and interest rates. (p.240)

Given the multiplicity of factors at play it is duplicitous to single out NCC regulatory standards as a significant cause of higher construction costs or of housing affordability concerns. It also ignores the multi-faceted, society-wide benefits - including overall energy demand reductions - of improving the performance and efficiency of our housing stock. If the time and administration of these reforms is sub-optimal then administrative reforms may be worth considering (for instance, more public certifiers and assessors or more digitally assisted procedures) but the evidence is clear – the substantive measures are cost effective.

I trust the Commissioners will be satisfied there is substantial and convincing evidence the benefits of adopting the NCC reforms (2022 and 2025 updates) significantly outweigh the costs

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[18] Above, p.10.
[19] https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem
[20] https://theconversation.com/how-evs-and-electric-water-heaters-are-turning-cities-into-giant-batteries-261369

on multiple grounds and at all scales. The NCC energy efficiency standards ensure our new building stock provides higher levels of comfort at minimal cost and are extremely cost effective for Queensland. They also ensure CO^2 emissions in the built environment will be reduced over time and the energy transition – due to lower peak electricity demand - will be completed at a lower cost for all taxpayers. In short, they are a win-win-win for Queensland.

Yours faithfully,

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