

Notice of Motion on residential building efficiency targets

Councillor Charles Jago
Canada Bay Council

The purpose of this motion is to identify the inadequacy of the current BASIX targets (including mildly improved variations in new precincts under development by the NSW Government), and to request that the NSW Government update the minimum BASIX targets to a level that demonstrably meets Australia's climate obligations under the Paris Accord (actually a more stringent target than net zero emissions by 2050).

Background

Emissions from buildings represent approximately 21% (ref 1, p12) of Australia's greenhouse gas emissions and over one third globally (ref 2). Most buildings last many decades - international comparisons suggest that around three-quarters of current building stock will still be standing in 2050 (ref 3), contributing to a high level of emissions. The design of each building when it is built determines the level of its emissions throughout the life of the building. Current building targets for new buildings lock in NSW's comparatively low level of average energy efficiency across the state (ref 4). To reach net zero emissions by 2050, Australia's buildings must reduce their emissions by 69% by 2030. However current policies will only lead to an 11% reduction by 2030 (ref 1, p7).

Progress has occurred in some areas toward action on climate change, with the NSW government recently committing to [net zero emissions in NSW by 2050](#) (ref 5), and the [Australian government committing to reducing emissions under the Paris Climate Agreement](#) (2016, ref 6). However, little has occurred on the minimum building efficiency targets which govern the design of new dwellings, and limit the amount of energy and water used in the dwelling after it is built. In Canada Bay, Council has declared a climate emergency and committed to achieving net zero carbon emissions from Council operations by 2030.

The [BASIX](#) (for Building Sustainability Index, ref 7) building efficiency standard sets energy and water targets for the efficiency of residential housing in NSW. As part of building approval for construction of new houses, the builder or developer must use the BASIX tool to calculate scores for the new building. As a condition of construction approval, applicants must ensure that their building meets the minimum targets and purchase a BASIX certificate showing acceptable scores.

As described in the Draft Rhodes Place Strategy (Ref 5, p50), "BASIX targets are calculated as a percentage of savings against NSW average benchmarks (being the average-per-person water consumption and greenhouse gas emissions levels across the state). These percentage savings are then expressed as a target – for example: BASIX 20 represents a 20% saving against the benchmark. BASIX assesses a proposed dwelling based on these benchmarks, and taking into account regional variations such as soil type, climate, rainfall and evaporation rates." The current targets (also shown in column B in Table 1) for construction of residential buildings in the Greater Sydney region are:

- BASIX Energy 50 for single dwellings
- BASIX Energy 45 for low rise (3 - 4 storeys)
- BASIX Energy 40 for mid rise (4 - 5 storeys)
- BASIX Energy 25 for high rise (6+ storeys)



Unfortunately, these unambitious targets are out of date, having received only very mild improvements since BASIX started in 2004. They fall far short of ensuring that Australia meets its Paris commitment to reduce carbon emissions, locking in higher carbon emissions and utility costs for the life of the building, unless significant improvements are made to improve the buildings efficiency performance.

A number of Government precinct initiatives have introduced higher BASIX targets in various ways, in particular in Rhodes and in precincts along Parramatta Road as part of the PRUTP program. As shown in Table 1, the Parramatta Road Urban Transformation Program (PRUTP, Ref 9, 2016) recommended improvements to BASIX targets in specific precincts defined by that program.

More recently, the Draft Rhodes Place Strategy (2020, ref 8, p50) recommended using BASIX targets above the minimum as an incentive, with a reward of bonus floorspace. While leaving the existing targets in place, the program offered an additional 5% floorspace bonus for high-rise projects meeting a BASIX energy target of 40% (increased from 25%) and a water target of 60% (increased from 40%). These proposed targets for Rhodes and the PRUTP precincts are shown in Table 1.

These programs implement different approaches in the use of efficiency targets. In PRUTP, the program recommends upgraded BASIX targets, with improved environmental benefits offered as a way to sell the program. In contrast, the Rhodes program, although presented as an environmentally beneficial approach to urban development, offers normal BASIX targets, but tries to use a bonus scheme to attract developers to a higher level of environmental performance.

Unfortunately, a limited number of additional buildings with higher efficiency than the norm, or even some precincts with higher efficiency than the norm across metropolitan Sydney will not be sufficient to achieve the required emissions reductions. In order to reduce building emissions on a scale to meet the Paris Climate Agreement, large-scale improvements must be applied consistently to building efficiency targets right across NSW, not just to some strategic buildings or precincts.

In response to its outdated BASIX targets, the NSW Government [in 2017 introduced an approximately 10% improvement](#) (ref 10). In 2021, the NSW Government has [promised an update to the efficiency of BASIX](#) (ref 11) as part of other changes, in which the [BASIX SEPP](#) will be moved into the NSW Government's new "[Design and Place SEPP](#)" in the near future. ([SEPPs – State Environmental Planning Policies](#) – act as overarching regulations issued by the NSW Government, which override any decisions made by councils.) Unfortunately, like the changes in 2017, the levels of efficiency proposed as targets for the Rhodes and Parramatta Road precincts indicate a very low level of ambition from the Government. Far more is required to meet Australia's Paris commitment.

The [study by Kinesis consultants for the Greater Sydney Commission](#) provides a preliminary strategy for reducing the emissions across Greater Sydney towards a net zero by 2050 target (ref 12, 2017, p7). (Kinesis is owned by Bruce Taper and David Holden, who led the original development of BASIX. They have also recently done work for Canada Bay Council – ref 13.) Amongst a broad range of strategies for reducing emissions, it identifies two levels of more efficient building targets (ref 12, "Higher Basix" in Table 2, p19). One level aims to improve BASIX targets for new dwellings in Urban Growth NSW projects, collaboration areas and priority precincts, while the other addresses new dwellings across the rest of Greater Sydney.

The approach of the Kinesis study for the Greater Sydney Commission which nominates differing sets of targets for different areas contrasts with that of BASIX, which applies a single set of targets (one for each building type) across metropolitan Sydney. In order to maintain the strength of a consistent set of BASIX targets for each building type across Sydney, and to offer the best chance of meeting Australia's Paris commitments in the context of the current climate emergency in Canada Bay and across the world, this motion recommends using only the higher of the two BASIX targets in the Kinesis report across Greater Sydney, as shown in column E of Table 1.

In summary, Table 1 shows the current targets applying to proposed new buildings in Sydney now, the differing targets proposed in precincts in Rhodes and along Parramatta Road, and the higher of two proposed targets in the Kinesis report for the Greater Sydney Commission, which is proposed as the new BASIX target for Greater Sydney.

While the scale of efficiency improvements may seem very high, technology improvements in heating and cooling technologies in recent decades have been dramatic, making the changes entirely possible. In

addition, replacing gas appliances with electrical ones powered by renewable electricity will similarly ensure major benefits.

Adopting the higher targets in column E below from the Kinesis report would be expected to save each household in a new building some \$200-\$500 per year in utility expenses. The improvements also provide a higher level of thermal comfort which would prepare those residents to far better handle the extremes of climate change.

Table 1: Current and improved BASIX targets recommended in specific NSW Govt precincts

| A: Type of building | B: Current targets | C: Proposed targets PRUTP 2016 (Ref 9) | D: Proposed additional, optional targets Rhodes 2020 (Ref 10) * | E: Proposed in strategic locations: Kinesis report for Greater Sydney Commission (2017) |
|--|-------------------------------|---|--|--|
| Energy - single dwelling | 50 | 60 | Not given | 75 |
| Energy - low-rise | 35 | 55 | Not given | 65 |
| Energy - medium-rise | 30 | 50 | Not given | 60 |
| Energy - high-rise | 25 | 40 | 40 | 55 |
| Water - all dwellings | 40 | 50 (60 where recycled water is available) | 60 | Not given |
| Basix figures shown are percentage improvements on NSW average water and energy usage per capita. | | | | |

Issues of implementation are beyond the scope of this document, but one key issue needs to be mentioned: while developers and ultimately homeowners will face additional construction costs in implementing the new efficiency targets, the long-term financial benefits to building owners represent an undeniable net benefit, on top of the benefit of reduced carbon emissions. However, because paying for additional construction costs can be a hurdle, some government advice and finance programs will be necessary to enable home-owners to effectively take proper advantage of the upgraded rules.

Recommendation

That Council:

1. Notes that the City of Canada Bay Council has passed a climate emergency motion, and also the NSW Government's adoption of a 2050 target for net zero emissions.
2. Notes that the large majority of newly constructed buildings will still be standing in 2050, and the Government needs to act now to future proof buildings in order to achieve the 2050 emissions target.
3. Notes that the NSW Government's planning rules currently require new residential buildings to meet BASIX targets which are strongly incompatible with Australia's commitments under the Paris Agreement.
4. Notes that NSW building standards are already changing with the reforms of the *Design and Building Practitioners Act* coming into force in July 2021, and separately the transfer of the provisions of the BASIX SEPP to the new Design and Place State Environmental Planning Policy (D&P SEPP).
5. Notes that proposals for NSW government's identified strategic centres and growth corridors in City of Canada Bay LGA (Rhodes, Parramatta Road) already specify or encourage higher BASIX targets for water and energy.
6. Writes to the NSW Environment Minister, Minister for Planning and Places and the planning and environmental spokespersons for Labor & the Greens to strongly recommend that, as a means of lowering carbon emissions, the NSW Government:

- (a) review building efficiency targets to ensure alignment with Australia's commitments under the 2015 Paris Climate Accord with substantially higher BASIX targets for both energy and water, and
 - (b) introduce programs which will educate and encourage both the building sector and the general public to substantially adopt the building targets.
7. Seeks to gain additional support for this issue through LGNSW and SSROC.

References/ Links

1. [Tracking progress to net zero emissions](#), ClimateWorks Australia 2018
2. [Energy efficiency within mid-rise residential buildings: A critical review of regulations in Australia](#), Heffernan ... p293
3. [Policy Pathway: Modernising building energy codes to secure our global energy future, IEA/OECD 2013](#), p10
4. [Sydney homes have the lowest energy ratings in Australia](#), SMH, 2019
5. [Net Zero Plan Stage 1: 2020-2030](#), NSW Government 2020
6. [Australia's International climate change commitments](#), 2016
7. [BASIX | Planning Portal](#), Department of Planning and Environment
8. [Draft Rhodes Place Strategy](#), August 2020, Department of Planning, Industry and Environment.
9. [Parramatta Road Corridor Urban Transformation Strategy: Sustainability Implementation Plan Reference Report](#), November 2016, UrbanGrowth NSW.
10. [BASIX energy target changes](#), DPIE 2017
11. [Department of Planning, Industry and Environment | Explanation of Intended Effect for a Design and Place SEPP](#), 2021 p5.
12. [Exploring Net Zero Emissions for Greater Sydney](#), Kinesis, 2017.
13. Sustainable Precinct Strategy, Parramatta Road Precincts for City of Canada Bay, Kinesis, 2020 (refer to attachments in Council meeting, May 2020).