

Executive Summary

In May 2018, the first of a series of stakeholder forums was held to understand the planning issues and opportunities to transition to net zero buildings. The forums are targeting non-residential (office, hotels and mixed-use) and multi-unit residential developments.

Hosted by the City of Sydney, the forums are a collaborative project involving the following forum partner organisations:

- » Australian Sustainable Built Environment Council (ASBEC)
- » City of Parramatta
- » City of Sydney
- » Committee for Sydney
- » Consult Australia
- » Greater Sydney Commission (GSC)
- » Green Building Council of Australia (GBCA)
- » Office of Environment and Heritage
- » Planning Institute of Australia.

Forum 1 focused on understanding the challenges and opportunities of net zero buildings through the NSW planning system with property industry stakeholders and forum partners. Participants included a representation of:

- » Property developers and construction companies;
- » Government tender specifiers for developments;
- » Peak industry bodies (e.g. UDIA and Urban Taskforce) and forum partners.

For the purposes of the forum, the EU, Energy Performance of Buildings Directive net zero buildings definition was used:

Nearly zero-energy buildings have very high energy performance. The low amount of energy that these buildings require comes mostly from renewable sources.

The forum began with a presentation by Luke Falk, Vice-President Hudson Yards Technology, Related Companies. He outlined the planning and operational initiatives required to support development of a net zero building in New York City. Forum attendees then participated in round table discussions about the barriers and opportunities for net zero buildings within the current NSW planning system. Participants were divided into asset classes (office, hotels, mixed-use and multi-unit residential developments) to identify if there were any significant differences in constraints or approaches to developing a net zero building or precinct.

Key overall findings

There were several findings that cut across asset types and forum participants. Listed below are these key findings that require consideration in any planning pathway to transition to net zero buildings.

Regulation, tools and costs were listed as the main constraints in delivering net zero developments, with participants recognising that, without legislative drivers, costs are the main factor in decision making.

Another key issue raised in the discussion was that current regulations are not up to date and therefore limit rather than facilitate energy performance. Improving and updating planning controls and assessment tools such as BASIX, Section J (BCA) and local environmental plans was regularly raised as an opportunity to facilitate net zero buildings and precincts.

In parallel with improved regulation, participants felt that **incentives are necessary to overcome existing financial barriers and internal organisational resistance** to improvements beyond mandated building energy performance. Incentives would help to alleviate the hurdle that developers perceive little upfront market advantage to delivering higher energy performance buildings.

It was recognised that there are different opportunities and levels of willingness between and across organisations in the property sector to deliver on net zero buildings. The key will be to **establish a planning framework that supports and recognises 'leaders', encourages 'followers' and enforces 'compliers'**.

Understanding the distinctions in developer-owner-occupier dynamics between the various asset classes was seen as critical in better targeting both mandatory and voluntary building performance controls.

The majority of participants strongly favoured updating **mandatory regulations to improve the energy performance of buildings and precincts**. Rather than encouraging the property sector to aim for net zero buildings, current regulations were seen to establish a minimum energy efficiency ceiling, reflected in both market and government expectations.

Mandatory reporting of energy efficiency for all buildings was also raised across all asset types, with commercial asset representatives noting the large impact it has made on existing buildings.

It was acknowledged that, while it is essential to engage smaller property developers in developing this framework, this is extremely difficult and will require significant (particularly local) government effort.

Opportunities and barriers

Opportunities and barriers identified by forum participants have been categorised into the following themes:

- » Improving planning/rating tools, ratings, setting targets for high performance and mandatory disclosure
- » Identifying incentives for developments achieving above mandatory standards
- » Improving the NSW planning framework to facilitate high performance outcomes
- » Educating local government staff to facilitate net zero developments
- » Supporting developers to understand net zero early in the design and project planning phases
- » Educating consumers to understand benefits and costs of net zero development
- » Incorporating net zero within procurement specifications for businesses and government to increase demand
- » Monitoring and enforcing building and precinct performance
- » Investigating financial measures to incentivise net zero developments
- » Demonstrating leadership and direction from NSW Government

For a list of key opportunities and barriers raised see summary table on page 19.

Next steps

At forum 2, local and state planners, ESD and planning consultants and government bodies will further explore themes, opportunities and barriers identified by Forum 1 participants. This work will feed into the development of a planning pathway to net zero buildings with targets and timeframes.

3. Summary of opportunities and barriers

The section is a summary of the opportunities and barriers identified by Forum 1 participants categorised into themes. These themes, opportunities and barriers will be further explored at Forum 2.

Themes	Opportunities	Barriers
<p>Improving planning/rating tools, ratings, setting targets for high performance and mandatory disclosure</p>	<ul style="list-style-type: none"> » NABERS, Green Star, NCC 2022, BASIX are updated to consider longevity and operation of all the asset types » Allow individual councils to increase BASIX requirements (and assess the impact on costs of increased BASIX targets in different areas) » Updating SEPP (Building Sustainability Index: BASIX) 2004 requirements » Tools and ratings are evaluated to be responsive for different asset classes » A single (national) rating tool for development types is needed » Higher minimum mandatory requirements; plus incentives pathways for higher performance » Section 7.11 (formerly Section 94) fees could be related to whether people achieve their targets or not » A scaled approach to setting targets by the age of the asset (e.g. new buildings to be net zero and target buildings >3 years through procurement). » Buildings to be rated regularly to ensure ongoing commitment to energy efficiency » Mandating 5.5 star NABERS Energy for office through a Commitment Agreement in Sydney and Parramatta » Precinct based targets set certainty for all individual buildings as they are built » Ensure energy efficiency targets and requirements are built into land pricing, although there was also concern this could depress land values. 	<ul style="list-style-type: none"> » High rise buildings cannot be net zero onsite. Would need to use offsite renewables. » Regulations such as BASIX are slow to respond and keep up to date with technology. This was also mentioned in submissions to the Greater Sydney Commission. » NABERS has not moved with the times » BASIX is two dimensional – easy to satisfy and not necessarily achieving the objective of improving energy building performance » Tension between ADG and BASIX » BASIX hasn't been updated so doesn't encourage higher levels of performance » BASIX has no feedback loop or mechanism to measure (residential) building performance after design approval » Developers don't get feedback on the performance of their building post-occupancy » Industry can use up to previous 3 years version for (development applications) » The Government has not set a long term energy performance target or plan with a pathway to improvements. The process from buying a site to DA is long and expectations need to be known at the start rather than

	<ul style="list-style-type: none"> » Set mandatory targets and disclosure for residential buildings but allow flexibility and innovation to achieve targets » Develop a star rating for residential, mandatory to be advertised at sale » Extend BASIX or passive house tool to hotels » Mandatory ratings for hotels/ need a certain rating to reaccredit hotel » Supply chain in hotels to be captured in rating tools 	<p>dealing with the uncertainty caused by the three year review process</p> <ul style="list-style-type: none"> » Zero incentive for above minimum performance – need pathway (residential) » Client has to be willing to pay for sustainable building performance improvements
Identifying incentives for developments achieving above mandatory standards	<ul style="list-style-type: none"> » Increased FSR or height allowances (e.g. if 6 star NABERS Energy Commitment Agreement) » Fast tracked approvals » Reduced application fees » Tax and contribution incentive 	<ul style="list-style-type: none"> » FSR may not be appropriate » Lack of a mechanism to ensure that performance achieves identified objectives
Improving the NSW planning framework to facilitate high performance outcomes	<ul style="list-style-type: none"> » Identify opportunities within Standard Instrument LEP and DCPs » Facilitate VPAs with net zero developments » Realign planning controls to assess buildings in line with strategic intent (outcomes lead rather than tick a box, enabling bespoke approaches) » Incorporate high performance sustainably measures into the DPE economic feasibility tool – this tool is used by DPE with rezonings and planning proposals » Investigate the use of a system similar to heritage floor space (credits for transferable development rights) used at City of Sydney for energy efficient buildings to enable them to get to net zero » Precinct planning with planning controls to incentivise and promote efficient buildings » Integrate and update ADG, SEPP65 and BASIX, into DCP format to resolve <ul style="list-style-type: none"> > measurement on windows - incentivises west facing living room > conflicts with sunlight into apartments, sealed buildings and cross ventilation 	<ul style="list-style-type: none"> » ADG is currently highly rigid, needs to be more flexible. If meet ADG verbatim you won't achieve energy outcomes » Sometimes tools result in ticking the box but doesn't translate into performance or facilitate innovation » Highly prescriptive solar access requirements » Conflict between design excellence and other standards – incentive to look great but additional costs from sustainability perspective » Rules don't respond to different urban contexts – need more tailored rules to building type and location » Competitive design process happens in 6 week period. 6 weeks is too short to calculate financial implications of sustainability measures and compromises outcomes for design submission.

	<ul style="list-style-type: none"> » Increase the length of the City of Sydney’s Competitive Design Process to allow sufficient time to cost sustainability initiatives (currently 6 weeks) » Merit based assessment to vary council’s planning controls to allow for flexibility in building design to support net zero buildings » identifying benchmarks in the Secretary’s Environmental Assessment Requirements 	
Educating local government staff to facilitate net zero developments	<ul style="list-style-type: none"> » Provide planning training on: <ul style="list-style-type: none"> > application of the National Construction Code > how to prepare performance based LEPs and DCPs > net zero building innovations such as passive principles (air tightness) and alternative energy sources > negotiation to deliver improved performance > developer perspective » Improved regulation and monitoring of high performance measures 	
Supporting developers to understand net zero early in the design and project planning phases	<ul style="list-style-type: none"> » Providing resources: <ul style="list-style-type: none"> > Cost-benefit evidence base for higher targets > Case studies > Best practice guidelines for net zero developments » Explanation of rating tools and standards » Information on new technologies » Engaging with energy and utility providers to better understand any opportunities and constraints with their services, legislation and regulation. <ul style="list-style-type: none"> > Also needs to be a consideration for local and NSW government » Providing industry upskilling to lower tier developers 	
Educating consumers to understand benefits and	<ul style="list-style-type: none"> » Create a consumer rating system » Provide resources to support behaviour change » Energy budgets for tenants 	<ul style="list-style-type: none"> » There is an expectation that sustainably costs – how do you communicate effectively to buyers – education piece

costs of net zero development	<ul style="list-style-type: none"> » Require sub-metering for apartments » Require an environmental performance description of the building e.g. NABERS rating and/or BASIX scorecard on 149 certificates (or equivalent) 	
Incorporating net zero within procurement specifications for businesses and government to increase demand	<ul style="list-style-type: none"> » Corporates to procure accommodation with a NABERS rating 	<ul style="list-style-type: none"> » Lack of market incentive to develop high energy performance buildings
Monitoring and enforcing building and precinct performance	<ul style="list-style-type: none"> » Ensure that developments are compliant with design commitments » Fines for poorly performing buildings – 5-10 years after built » Performance bonds linked to a performance target 	<ul style="list-style-type: none"> » Lack of transparency and accountability in monitoring and enforcing energy efficiency outcomes by development authorities and private certifiers.
Investigating financial measures to incentivise net zero developments	<ul style="list-style-type: none"> » Grant funding for new and model developments » Investor green bonds » Voucher subsidies for purchasers » Funding of demonstration and model projects. » Green home loans for purchasing high efficiency homes 	<ul style="list-style-type: none"> » Mandatory and voluntary energy performance targets are perceived as a cost » Don't perceive that investors, tenants or buyers are prepared to pay higher costs for performance benefits.
Demonstrating leadership and direction from NSW Government	<ul style="list-style-type: none"> » Identify long-term (20 years+) stepped changes to the planning framework to deliver net zero buildings, rather than the property sector waiting for each three-year review of the regulation. » Undertake demonstration projects. » Funding or facilitation by State Government of a 'hero' project or design to understand the opportunities and possibilities for future projects. 	<ul style="list-style-type: none"> » Lack of political leadership and desire to achieve outcomes