



# Creating a Planning Pathway to Net Zero Buildings

## Forum 2 Outcomes Report

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APRIL 2019

A Veris Company



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# Executive Summary

In November 2018, the second of a series of stakeholder forums was held to understand the planning issues and opportunities to transition to net zero buildings. The forums are focused on 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 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 (OEH)
- » Planning Institute of Australia (PIA)
- » Property Council of Australia (PCA).

Forum 1 engaged property developers and construction companies, government development tender specifiers and peak industry bodies. Forum 2 engaged ESD and planning consultants as well as local and state government planners. It built on the findings of Forum 1, continuing the discussion on opportunities and barriers in the NSW planning system in transitioning to net zero buildings. As with Forum 1, the session incorporated presentations from content specialists as well as roundtable discussions.

## Key overall findings

Themes, key issues and opportunities for roundtable discussion topics are summarised below. This report captures a range of responses from participants rather than an agreed consensus from roundtable discussions.

### Major challenges and barriers

- » Local government authority and planning options to influence the energy performance of developments are insufficient.
- » Energy performance targets in current planning tools are too low and there is inadequate post-development monitoring and enforcement.
- » Across industry and local government, there is a lack of sustainable design and technology knowledge and skills.
- » Cost is the primary driver for the property industry. Real and perceived financial and market barriers are preventing developers from incorporating net zero features into developments.
- » There is a lack of leadership and overall strategic direction for achieving net zero. The property industry needs clear signals and requirements from government to support a transition to net zero developments.
- » Lack of adequate tools, legislation and mechanisms to facilitate net zero developments
- » Impact of different ownership models and tenancy preferences and behaviour on the design and operation of sustainability features.

## Opportunities

The opportunities discussed at each of the roundtables are summarised in Table 1.

Table 1 Opportunities

Forum topic	Main messages
Improvements to existing environmental performance planning tools	<p>Planning tools need to be streamlined with consistent and transparent outcomes across local and state boundaries to support industry buy-in.</p> <p>Sustainability rating tools (such as BASIX and NABERS) provide an important baseline for building performance but are insufficiently updated. Upgrades are essential for industry to continue to lift its performance standards.</p> <p>More resources and support for local government are necessary to improve knowledge, understanding, monitoring and enforcement of rating tools.</p> <p>It was noted that BASIX could be more flexible and adaptable to better address the <b>current market such as through the development of a 'smart green' apartment tool.</b></p> <p>Mandatory disclosure of NABERS should be extended to enable purchasers and tenants to track performance of developers, designers and builders.</p> <p>The cost and resources required to submit for GreenStar assessment act as a major barrier to its application by smaller industry players.</p>
Using planning to support carbon offsets or facilitate offsite renewable energy production	<p>Capacity and feasibility to deliver and share energy varies. Greenfield and precinct developments provide a significant opportunity to establish distributed renewable energy networks.</p> <p>Sharing energy across buildings and precincts has the potential to become a major disruptor in the system.</p> <p>Mandating and ongoing management of specific green energy solutions is an issue.</p> <p>A mechanism is required to regulate and enforce compliance of offsets and offsite renewable targets.</p>
Developing planning based incentives to support net zero buildings	<p>Incentives should be used to bridge the gap between mandatory minimums and council sustainability aspirations.</p> <p>Time and certainty for approvals are key drivers for developments. Parking and floor space provisions are also effective incentives as they impact the economic feasibility of the development.</p> <p>A variety of funding mechanisms, grants and other financial incentives should be provided to greenlight innovation and encourage collaboration between government and industry.</p> <p>Significant opportunity for local government to act as a coordinator of shared services and planning incentives precinct approaches</p>
Support or resources required to assist planners and developers	<p>Statutory and strategic planners require additional knowledge of ESD. A desired outcome is to advance sustainability practice and drive improved energy performance through preparation, assessment and administration of enhanced development controls.</p> <p>Preparation of clear, consistent and enforceable environmental performance regulation, guidelines and objectives including a template to articulate the sustainable elements which the developer has to submit to council.</p> <p>A range of regulatory and administrative measures to increase compliance including proposing the employment of environmental compliance officers.</p>

## Implementation

All roundtables discussed: the planning pathway; how to ensure it is taken up by the whole industry; and that time frames are suitable. Main messages are summarised in Table 2.

Table 2 Implementation opportunities

Forum topic	Main messages
Ensuring that a planning pathway is taken up by the whole industry	<p>Higher BASIX targets enable a consistent approach across councils and provide mandated requirements to the whole industry.</p> <p>Buyers and tenants should be educated on what to look for and be provided with clear information to make informed decisions.</p> <p>Clarity around ESD costs, incentives and approvals will make it easier for developments to achieve net zero.</p> <p>Improve local and state government recognition of net zero developments.</p> <p>There is a need for a regulated, compulsory and enforceable planning pathway that provides an ongoing measure for compliance from building design to operation.</p> <p>Engagement with all tiers of the development industry is vital.</p>
Continuing to support 'leaders'	<p>Market changes, voluntary industry benchmarks and consumer preferences, will influence leading developers to innovate further.</p> <p>Regularly updating voluntary and mandatory standards <b>will drive 'leaders'</b> to innovate further.</p> <p>There is a role for local and state government in supporting innovation.</p> <p>Building awareness and engagement within the industry is important.</p>
Suitable timeframes and targets to transition to net zero development	<p>Certainty and a clear trajectory are required for the planning pathway, with consistency across councils. This should include an objective of all new builds being net zero by 2030.</p> <p>Ten years is enough time to introduce significant change with the right support and technology. Industry will accept ongoing updated performance requirements.</p> <p>Incorporate targets within existing legislation and planning controls e.g. align with 5 year reviews of LEPs.</p> <p>Transition could match time from developer land purchase to sale, generally 3-5 years for urban renewal and 7 years for greenfield developments.</p>
Existing industry or government frameworks that should be considered	<p>Work done by GBCA on their Carbon Positive Roadmap and ASBEC's Built to Perform should inform planning pathway.</p> <p>A central organisation should coordinate all sustainability policy and education including bringing together BASIX, NABERS and NatHERS.</p>

## Next steps

The **City of Sydney** will be commissioning a consultant to develop performance standard pathways to net-zero developments in Greater Sydney planning controls. A Planning Leadership Advisory Group will be formed, representing stakeholder groups present at the forums, to provide guidance and feedback to the consultant on the development and implementation of the pathway.

A final forum is planned to be held in **2020**. It will provide an opportunity to refine and finalise the recommended planning pathway with all key stakeholder groups.

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# 1 Introduction

In November 2018, the second 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 office, hotel, mixed-use and multi-unit residential developments.

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

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- » Planning Institute of Australia (PIA)
- » Property Council of Australia (PCA)

Forum 1 was held in May 2018. It started the conversation with developers, construction companies, government tender specifiers for development and representatives from property industry associations on the issues and opportunities in land use planning to transition to net zero buildings. On Thursday 1 November 2018, a second forum was held with ESD and planning consultants as well as local and state government planners. Appendix A provides a list of organisations that participated in Forum 2.

Forum 2 built on the findings of Forum 1, continuing the discussion on the opportunities and barriers existing within the planning system to facilitate net zero developments. The objective was to seek consensus on the key elements of a potential planning pathway for net zero buildings. The Forum also provided an opportunity for ESD and planning consultants and local and state government planners to share their specialist knowledge, experiences and learnings. Forum 2 included presentations from content specialists as well as roundtable discussions, shown in Figures 1 and 2. See Appendix C for the agenda.

Figure 1 Rod Simpson, Environment Commissioner GSC



Figure 2 Roundtable discussions



For the purposes of this forum series, the EU's, 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.*

This definition was only provided to steer discussions. It has not been formally adopted by **forum** partners as their definition of net zero buildings.



This report provides a summary and overview of Forum 2. It captures a range of responses from participants rather than an agreed consensus from roundtable discussions.

- » Sections 3 to 6 summarise roundtable discussions and key points
- » Section 7 provides a brief note about how the project will progress up to and including Forum 3
- » Section 8 summarises feedback from participants on the forum, as well as outcomes they would like to see from this forum series. See Appendix D for the Feedback Form.

## 2 Forum overview

Listed below are the key objectives, parameters and structure that guided discussion for Forum 2.

### Forum objectives

- » Understand the issues and opportunities within the NSW planning framework to transition to net zero energy development
- » Collaborate with industry, state and local government to support through land use planning
  - > [NSW State Government net-zero emissions target](#)
  - > [Greater Sydney Region Plan](#) low carbon city objective
  - > [Resilient Sydney— a strategy for city resilience 2018](#)
- » Understand current practice in development in respect to delivering on net zero buildings and precincts.

### Forum parameters

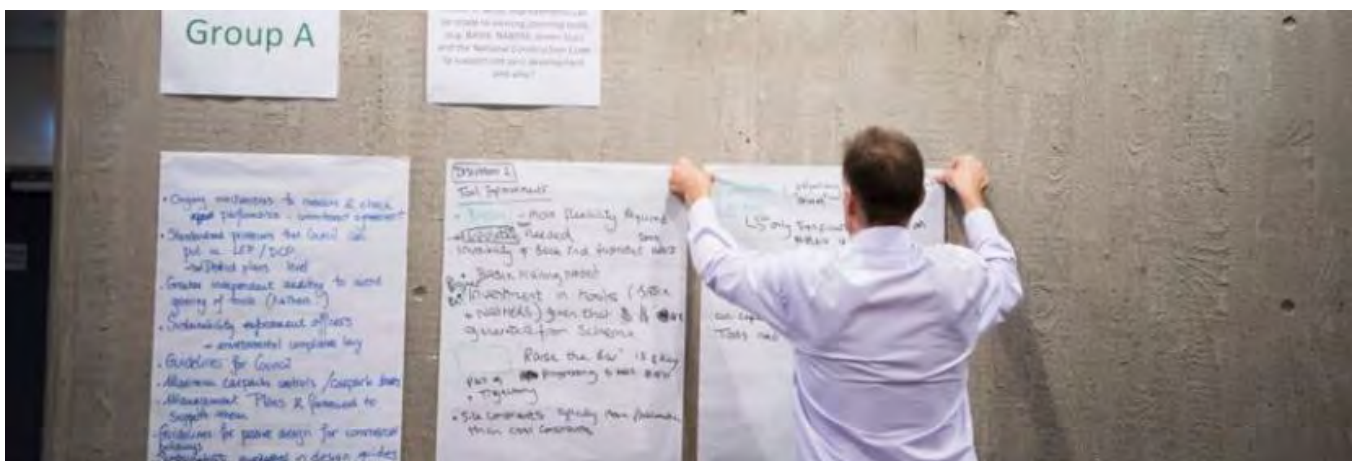
- » This is the start of the conversation with government and industry— any and all ideas are welcome.
- » Feedback is anonymous, the findings of Forum 2 will be reported but no quote will be linked to a specific organisation or individual.
- » While the forum scope reflects the Greater Sydney region, ultimately this framework may apply to all of NSW.
- » These forums are directed at identifying the issues and opportunities within the NSW planning framework to support the transition to net zero development, rather than technical /operational energy issues or solutions.
- » The planning pathway for net zero buildings responds to international, Australian and NSW emissions targets.

### Forum structure

Forum 2 incorporated short presentations with much of the session dedicated to in depth roundtable discussions. At roundtables, forum participants discussed topics and opportunities identified at Forum 1. Roundtables were facilitated by City of Sydney and partner organisation staff through guided questions. See Appendix B for the Forum 2 brief.

During the registration process, participants were able to nominate to discuss one of four in depth discussion topics. Questions were also distributed as part of participant registration to facilitate the discussion on the day.

Figure 3 Sharing outcomes of roundtable discussions



### 3 Barriers and challenges to net zero development

The Forum's opening roundtable discussion focused on current challenges to net zero developments within the NSW planning system and development industry. Responses revolved around the following key themes:

- » Local government authority and planning options to influence the energy performance of developments
- » Performance of sustainability planning tools – targets, monitoring and enforcement
- » Sustainable design and technology knowledge and skills
- » Financial and market barriers (real and perceived)
- » Net zero building policy and leadership
- » Ownership, management and tenancy of the building.

These are summarised in Table 3, with more in depth discussion on issues and opportunities in regards to planning tools, carbon offsets and offsite energy generation, planning-based incentives and support and resources to assist planners and developers, detailed in Section 4.

Table 3 Summary of challenges

Challenge	Description
Local government authority and planning options to influence the energy performance of developments	<ul style="list-style-type: none"> <li>» Options available to local government to negotiate with and incentivise developers are insufficient. Floor space ratio (FSR) is one of the only tools available to encourage sustainability outcomes.</li> <li>» Negotiating environmental performance outcomes is a voluntary exercise and there are challenges with the timing of developments and the planning process.</li> <li>» National and state regulations act as the minimum standard and councils have little recourse to set higher standards for developments.</li> <li>» DCPs and local government design guidelines lack enforcement as a non-statutory document. They are <b>usually considered at the last minute and as a checklist, so don't</b> tend to significantly influence the sustainability performance of buildings.</li> <li>» Even if there are good sustainability controls in place there is generally a lack of local government oversight in terms of enforcement and monitoring.</li> <li>» Potential for modifications to an original development consent to undermine previously negotiated outcomes between local government and the developer.</li> <li>» Councils are usually unable to influence precincts until late in the process – targets and sustainability plans need to be developed early in the planning process. Developers should be educated about expectations regarding sustainability targets.</li> </ul>
Performance of sustainability planning tools – targets, monitoring and enforcement	<ul style="list-style-type: none"> <li>» Available tools and standards are not reviewed or updated regularly e.g. BASIX and NABERS.</li> <li>» Targets set by tools, particularly BASIX, are too low and performance standards need to be raised for industry.</li> <li>» There are significant compliance challenges particularly in regards to assessment and enforcement once construction is complete (e.g. building design is approved but there is a gap regarding construction, building management and operational compliance).</li> <li>» It takes a lot of resources to check whether targets have been met after the building is completed and pre-committed targets or measures can be ignored by developers.</li> </ul>

Challenge	Description
	<ul style="list-style-type: none"> <li>» There is a lack of confidence in some private certifiers. Instances of certifiers using false information to complete certificates, defeating the purpose of local and state government targets and conditions.</li> <li>» There is some confusion amongst, particularly lower tier developers, of overlaps in compliance between Section J of the National Construction Code and BASIX.</li> <li>» Current sustainability tools and targets are particularly problematic to enforce for retrofits and renovations.</li> </ul>
<p>Sustainable design and technology knowledge and skills</p>	<ul style="list-style-type: none"> <li>» Lack of understanding and knowledge of the benefits of passive house design and maintaining thermal performance – need to raise the standards of acceptable heat loss (for passive houses the requirement is a heat transfer coefficient (U-value) of no more than 0.15 W/(m<sup>2</sup>K) – well above Australian standards).</li> <li>» There is a lack of knowledge and skill in the property and construction industry regarding development of green buildings.</li> <li>» Certifiers have difficulty keeping up with environmental performance changes.</li> <li>» There is a need to improve local government and industry understanding of new technology and how to address uncertainty in the planning system (e.g. electric car charging stations).</li> <li>» Councils have limited skills in negotiating building performance outcomes as they lack understanding of sustainable development feasibility costs.</li> </ul>
<p>Financial and market barriers (real and perceived)</p>	<ul style="list-style-type: none"> <li>» Developers are not understanding or factoring in the cost of improved energy performance into development feasibility.</li> <li>» There is push back from developers concerning perceived costs of sustainability targets, delayed profit and impact on housing affordability. Lower tier developers (in particular) <b>don't recognise the benefit and potential for net zero development.</b></li> <li>» Development and construction industry struggle to balance the competing requirements of design, energy efficiency, wellbeing, resilience and market pressure e.g. high-rise, fully glazed residential buildings and energy efficiency; solar access and tree protection.</li> <li>» Difficult to establish a planning framework that aligns with <b>the developer's short-term</b> interests (a quick development turn around) and the desire to achieve long term sustainable building operation.</li> <li>» Onsite energy systems and large energy saving features require a critical mass, usually greater than what one developer (particularly lower tier developers) can fund.</li> <li>» It will be difficult for a planning pathway to take into consideration the various business models of the different tiers in the development industry.</li> <li>» There is a <b>lack of understanding of the 'willingness to pay'</b> by purchasers, they are not aware of the long term savings provided by energy efficient buildings.</li> <li>» Developers feel the need to deliver to the market rather than aspire to achieving a high level of sustainability performance – there is a lack of pressure or desire from tenants for energy efficiency – most tenants <b>don't</b> seem to understand the advantages.</li> </ul>
<p>Net zero building policy and leadership</p>	<ul style="list-style-type: none"> <li>» Lack of clear goal and overall direction for achieving net zero buildings– this is a key gap at the state level.</li> <li>» There are minimal resources (tools, legislation and mechanisms) provided by state government to assist local government in facilitating net zero buildings (e.g. carparking requirements to discourage reliance on cars; allow <b>additional</b> FSR).</li> <li>» Lack of provisions to regulate operational requirements.</li> <li>» Local Environmental Plans (LEP) (council not identified at forum) currently impact the ability to deliver 4-8 storey net zero buildings.</li> <li>» Energy and water utilities have their own governance and operational regulations, which can be difficult to align with broader sustainability goals and outcomes.</li> </ul>

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Challenge	Description
Ownership, management and tenancy of the building	<ul style="list-style-type: none"><li>» Lack of overall governance and fragmented ownership across buildings within a neighbourhood are key challenges to overcome in order to incorporate sustainability features. Precincts with a single developer make net zero more achievable.</li><li>» Retail and hotel developers, in general, are less interested in net zero. There is a need to ensure the planning pathway provides different levers for different building types and uses.</li><li>» There is a gap between design and operation – planning can facilitate an energy efficient building <b>however tenancy is a key factor in the building's performance for both</b> residential and commercial.</li><li>» Incorrect use of energy efficient features is caused by both tenant preferences and a lack of knowledge about the technology. In residential developments, there is a need to engage strata organisations in order to improve the energy efficiency of apartments and to educate tenants.</li><li>» There is insufficient legislative power to influence builders and tenants. Developers do not have accountability for the life of the building and the planning framework is unable to deal with the 30-50 years of compliance and buildings upgrades.</li></ul>

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## 4 Identified opportunities

Participants preselected which of the following four key questions they wanted to explore in depth and were seated at respective tables.

- A. What improvements can be made to existing planning tools to support net zero development and why?
- B. Can the NSW planning system be used to support carbon offsets or facilitate offsite renewable energy production through transfers of energy production or entitlements between buildings, and if so, how would this work?<sup>1</sup>
- C. Can planning-based incentives be better targeted to support net zero development?
- D. What support or resources are required to assist planners and developers to better integrate sustainability into planning policy?

Across the four themes, participants raised the importance of purchaser and tenancy education to promote the long-term savings and environmental benefit of energy efficient buildings. While many noted the trend towards environmental procurement in corporate decision making, they felt there was a missed opportunity to target the general public. New precincts, urban renewal, technology and innovation continued to be raised by a range of participants as important opportunities to be addressed in a potential planning pathway for net zero developments.

### 4.1 Planning tools

**What improvements can be made to existing planning tools to support net zero development and why?**

This question was selected by more than half of the participants ahead of the forum to discuss. Responses are summarised in Table 4 below and revolved around the following key themes:

- » Reducing complexity in the planning system
- » Updating existing sustainability planning rating tools
- » Monitoring and enforcement
- » Knowledge and information sharing.



*Problem with systems like BASIX is that when it [the development] goes to construction it is not followed through. Checking mechanisms need to be improved. [They're] often not checked against the plan."*

Forum participant response to planning tools question

Table 4 Summary of key issues and opportunities for rating tools used in NSW

Tools	Issues and opportunities expressed
Development of tools	<ul style="list-style-type: none"> <li>» Consider opportunities for planning tools to be cohesive and streamlined.</li> <li>» Increase consistency and transparency in tool outcomes across LGA and state jurisdictions.</li> <li>» Establish a balance between flexibility and consistency in tool design that supports both higher performance standards as well as innovation.</li> </ul>

<sup>1</sup> Due to the low number of participants that chose this theme as their first choice, a number of participants were invited to discuss it at the forum and a table was created.

Tools	Issues and opportunities expressed
Updating existing tools	<ul style="list-style-type: none"> <li>» Sustainability rating tools are not sufficiently updated, and authorities do not tend to clearly indicate when an update is likely.</li> <li>» Government should increase the bar on building energy efficiency to require industry to lift its performance standards.</li> </ul>
Education, monitoring and enforcement	<ul style="list-style-type: none"> <li>» Additional resources and support are required from state government to improve knowledge and understanding of rating tool requirements and calculations.</li> <li>» Increase local government auditing of development and higher penalties for non-compliance.</li> <li>» Need to develop a regulatory tool that is tailored to the operational life of the development not just the planning/ design stages.</li> <li>» Sustainability enforcement officer positions should be created and funded through an environmental compliance levy.</li> <li>» Buildings standards and compliance requirements should transfer from the developer to buyers once sold.</li> </ul>
BASIX	<ul style="list-style-type: none"> <li>» Developers tend to have a checklist approach and only work towards the minimal outcome required. This creates a performance ceiling and it is difficult to encourage developers to go beyond BASIX.</li> <li>» BASIX has had value in generally raising performance standards across the industry, however it should be updated more regularly to incrementally impose higher requirements on developments.</li> <li>» Consider a 'tiered' BASIX, that enables developers to opt in at a higher level.</li> <li>» Align National Construction Code (NCC) and BASIX for a whole building approach.</li> <li>» BASIX is well suited for assessing single unit dwellings, however multi-unit dwellings are not well addressed. Consideration of a specific apartment tool was proposed.</li> <li>» Make BASIX more flexible and adaptable to better address the current market.</li> <li>» Improve training and technical support as better understanding of how BASIX works would assist users of the tool.</li> </ul>
NABERS	<ul style="list-style-type: none"> <li>» It has limited adoption by developers as it is not mandated.</li> <li>» When utilised it has successfully lifted environmental performance standards however the tool and calculation process need to be updated.</li> <li>» Some participants felt that it is too rigid and not suitable for the current market (e.g. shared spaces).</li> <li>» Opportunity to extend mandatory disclosure of NABERS to all developments to enable purchasers and tenants to track performance of developers, designers and builders.</li> <li>» NABERS works effectively to monitor existing building energy performance.</li> </ul>
Green Star	<ul style="list-style-type: none"> <li>» Like NABERS, as it is not mandated tool, only a minority of developers register their developments as Green Star projects.</li> <li>» The cost and resources required to submit for assessment are considered onerous, limiting it to largely top tier and boutique developers.</li> </ul>
National Construction Code (NCC)	<ul style="list-style-type: none"> <li>» NCC acts as a minimum standard to enable consistency across the country.</li> <li>» Individual councils with their own standards undermine the NCC.</li> <li>» NCC, Section J is undergoing a major update.</li> </ul>

## 4.2 Carbon offsets and offsite energy generation

Can the NSW planning system be used to support offsets or facilitate transfers of energy production or renewables entitlements between buildings, and if so, how would this work?

This question was the least chosen by Forum participants with only one roundtable discussing the topic. Responses are summarised in Table 5 below and revolved around the following key themes:

- » Capacity and feasibility to deliver and share energy
- » Distributed energy
- » Implementation, monitoring and compliance.



*The renewable energy market is going to change. How complex do we need to make the process of implementing green power if the outcome [100% renewables] is the same?"*

Forum participant response to carbon offsets question

Table 5 Carbon offsets and offsite energy generation

Theme	Issues and opportunities expressed
Capacity and feasibility to deliver and share energy	<ul style="list-style-type: none"> <li>» For medium and small developments onsite energy production is not feasible and the <b>ability to effectively purchase 'renewable' energy is challenging.</b></li> <li>» Greenfield areas have significant renewable energy opportunities and could distribute it at a precinct scale.</li> <li>» Precincts have the opportunity to be part of a big scheme however the costs of this need to be understood as well as the most effective way to benefit a whole area.</li> <li>» Identify incentives for developments able to achieve more than 100% of on-site energy production. There is also a need to find innovative ways to share the excess energy across the broader region.</li> </ul>
Distributed energy	<ul style="list-style-type: none"> <li>» The ability to share energy across buildings and precincts has the potential to become a major disruptor in the system. Blockchain technology provides an opportunity to share energy – buying and selling from renewable micro-grids.</li> <li>» Developers are setting up renewable/ green energy retailers that provide power to tenants and residents. This has to be competitive compared to the cost of power supply through traditional energy retailers. As a tenant you should be able to opt in or out to promote competition.</li> <li>» It is important to understand the building users point of view.</li> </ul>
Implementation, monitoring and compliance	<ul style="list-style-type: none"> <li>» The current planning system can support targets, particularly at the DA stage, but <b>there are issues with mandating and ongoing management of specific 'green' energy solutions.</b></li> <li>» The planning system does a relatively good job in respect to legal conditions that direct land use and set quantitative benchmarks. It needs however stronger measures to reduce greenhouse gas emissions.</li> <li>» To address non-compliance there needs to be a monitoring and reporting mechanism as part of the planning system.</li> <li>» A mechanism, ancillary to the planning system, is required to regulate and enforce compliance if offsets and offsite renewable targets are not achieved.</li> </ul>



## 4.3 Planning based incentives

Can planning-based incentives be better targeted to support net zero development? Are there other incentives we could use apart from floor space ratio?

This question was the third most selected question by participants. Responses are summarised in Table 6 below and revolved around the following key themes:

- » Time and certainty
- » Funding mechanisms, grants and other financial incentives
- » Parking and floor space
- » Shared services and incentives
- » Role of local and state government.



*The most powerful incentive is time if a decision could be guaranteed. Variables can be managed and mitigated within an agreed timeframe.*

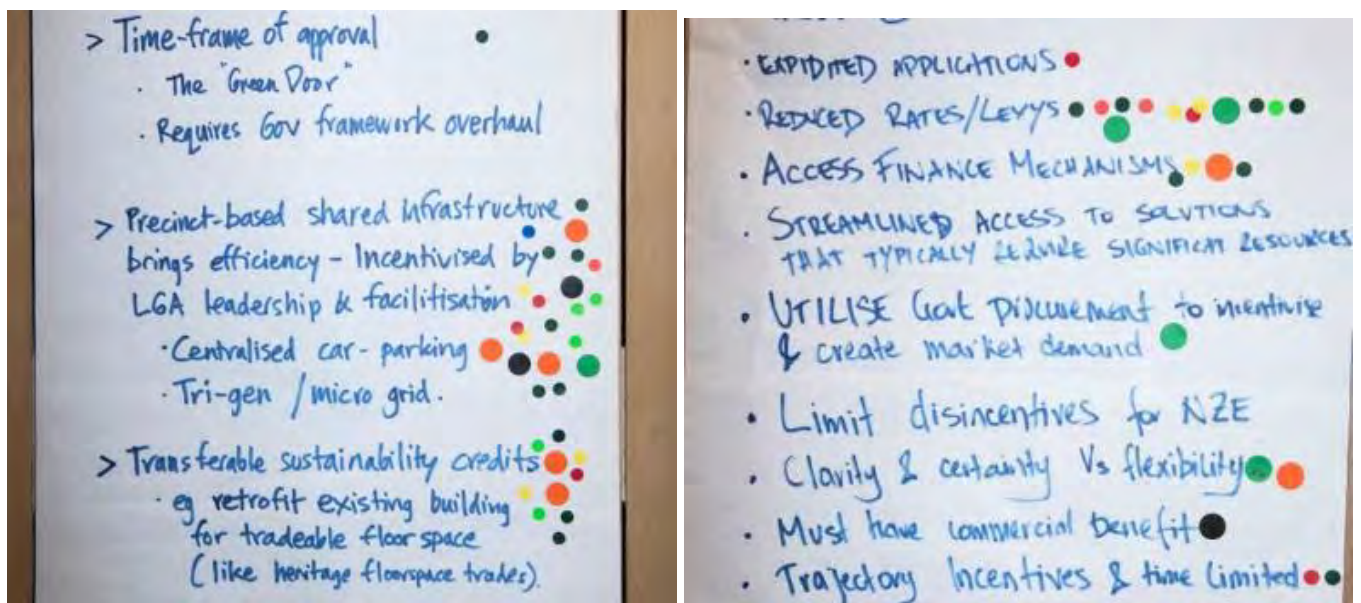
Forum participant response to planning based incentives question

Table 6 Planning based incentives

Theme	Issues and opportunities expressed
Time and certainty	<ul style="list-style-type: none"> <li>» An agreed timeframe and expedited approval for net zero buildings.</li> <li>» Opportunity to enable complying development approval for example if building achieves 5 Star Green Star.</li> <li>» It is important that incentives support certainty and clarity whilst also enabling flexible and innovative approaches.</li> </ul>
Funding mechanisms, grants and other financial incentives	<ul style="list-style-type: none"> <li>» Availability of national, local and state grants to achieve net zero buildings. There is an opportunity for the development industry and government bodies to collaborate on maximising sustainability outcomes.</li> <li>» Access to finance mechanisms such as social impact investment and green bonds.</li> <li>» Reduced council rates.</li> <li>» Opportunity for local government to use section 7.11 contributions framework or value capture.</li> <li>» <b>Need to ensure incentives address the building's operational performance and lifecycle.</b></li> <li>» Investigate offset or levy scheme in lieu of stricter carbon targets.</li> </ul>
Parking and floor space	<ul style="list-style-type: none"> <li>» Additional floor space to encourage net zero for new buildings.</li> <li>» Reducing the amount of car parking e.g. Nightingale model.</li> <li>» Use of parking incentives and greater gross floor area (GFA) leverages net zero through improving the economic feasibility of the project.</li> </ul>
Shared services and incentives	<ul style="list-style-type: none"> <li>» Potential to share incentives and trade-offs with multiple developers at a precinct level.</li> <li>» Shared services across different building typologies and uses also provides a significant opportunity to invest in precinct scale technologies and infrastructure.</li> <li>» Investigate and encourage transferable sustainability credits (e.g. retrofitting existing buildings for tradeable floor space).</li> <li>» Opportunity for local government to act as a coordinator of shared services and precinct approaches.</li> </ul>

Theme	Issues and opportunities expressed
Role of local and state government	<ul style="list-style-type: none"> <li>» Incentives should be used to bridge the gap between mandatory minimums and council sustainability aspirations – used for innovative approaches rather than ensuring basic targets are met.</li> <li>» State and local government should support pilot schemes to provide an evidence base for the property industry of different incentive mechanisms and governance structures.</li> <li>» High value developments with sustainability components are often assessed and approved by state government. Sustainability requirements and targets should be consistent across both levels of government.</li> <li>» Need to ensure the planning framework responds to any potential disincentives (e.g. those that prevent large scale precinct based sustainable water or energy production, as regulatory requirements and costs can stop innovative measures like tri-generation).</li> <li>» Government procurement processes should be used to increase demand in the market for net zero (e.g. office leasing).</li> </ul>

Figure 4 Outcomes of roundtable discussion on planning based incentives



## 4.4 Support and resourcing

What support or resources are required to assist planners and developers to better integrate sustainability into planning policy? Who can provide the support?

This question was the second most selected question by participants. Responses regarding support for planners are summarised in Table 7, while feedback on support needs for developers is summarised in Table 8.

Feedback on planning support and resources revolved around the following key themes:

- » Education and skills
- » Planning instruments
- » Guiding principles and resources
- » Regulation and enforcement
- » Leadership and engagement.



*There is a need to provide a separate Council resource that is committed to giving support on sustainability. Otherwise the barrier between planners and developers will remain.*

Forum participant response to support and resources question

Table 7 Support and resourcing for the planning industry

Themes	Support required	Desired outcomes
Education and skills	<ul style="list-style-type: none"> <li>» ESD skills for DA assessors and strategic planners.</li> <li>» More skills for net zero across Australia – ongoing education is needed to advance sustainability and take advantage of new technologies.</li> <li>» Dedicated sustainability planning officer.</li> </ul>	<ul style="list-style-type: none"> <li>» Efficiency gains for planners to assess net zero features.</li> <li>» Buildings approved are better designed and orientated – there is a paradigm shift towards net zero.</li> <li>» Buildings are future-proofed for new technologies and uses.</li> </ul>
Planning instruments	<ul style="list-style-type: none"> <li>» Clauses in Standard Instrument LEP for councils to address incentives consistently and place a greater statutory weight on providing sustainability measures in buildings.</li> <li>» Provide tools to enable a range of incentives for net zero features and buildings in LEPs and DCPs.</li> </ul>	<ul style="list-style-type: none"> <li>» An LEP with simplicity, standardisation and innovation that guides councils and developers.</li> <li>» ESD is included in LEPs and DCPs.</li> <li>» Planners have ownership over net zero outcomes and that these are looked at from a holistic perspective.</li> </ul>
Guiding principles and resources	<ul style="list-style-type: none"> <li>» General principles and net zero guidelines required to raise the benchmark.</li> <li>» Clearer land use planning guidelines to ensure that sensitive development is planned for in high amenity locations and aligned with access to public transport.</li> <li>» A template to articulate the sustainable elements which the developer has to submit to council. (The City of Sydney has developed a draft ESD report template that will be tested with industry in 2019)</li> </ul>	<ul style="list-style-type: none"> <li>» Local government is supported to implement net zero policies.</li> <li>» Guidelines are adopted that, implemented, improve efficiency, consistency and reduce costs.</li> </ul>

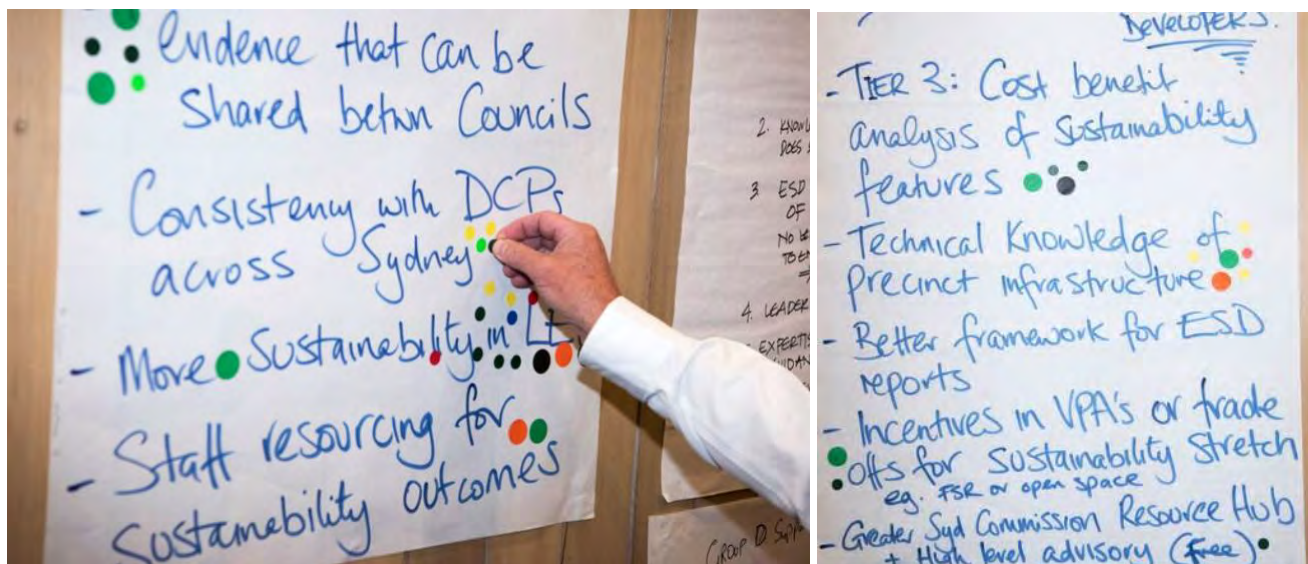
Themes	Support required	Desired outcomes
Regulation and enforcement	<ul style="list-style-type: none"> <li>» Dedicated environmental compliance officers (trained and funded).</li> <li>» Greater regulation that raises the bar for basic requirements.</li> <li>» Well linked design and compliance tools.</li> <li>» Operational commitment agreements (not just design agreements) embedded within planning controls.</li> <li>» Clear and enforceable objectives.</li> </ul>	<ul style="list-style-type: none"> <li>» Greater scrutiny of energy efficiency certificates (Section J/ BASIX).</li> <li>» Buildings perform to their designed (and improved) standard.</li> <li>» Poor performing buildings are identified and brought up to scratch.</li> </ul>
Leadership and engagement	<ul style="list-style-type: none"> <li>» Engagement at state and local level across all tiers of the property industry.</li> <li>» ESD as part of the Planning Proposal conversation.</li> <li>» Strong leadership from state government.</li> </ul>	<ul style="list-style-type: none"> <li>» Clear understanding of property industry motivations, including Tier 2 and Tier 3 issues.</li> <li>» Developers engage engineers and project team to achieve the compliance level.</li> <li>» Sustainability is factored into developments from the planning proposal stage.</li> </ul>



*We rely too much on certificates. Commercial development is a cheque, held accountable by the market. Things should be double checked."*

Forum participant response to support and resources question

Figure 5 Outcomes of roundtable discussion on support and resourcing



Responses regarding support for developers are summarised in Table 5 below and revolved around the following key themes:

- » Engagement and education
- » Consistency and certainty – decision making, monitoring and enforcement
- » Costs.

Table 8 Support and resourcing for the development industry

Themes	Support required	Desired outcomes
Engagement and education	<ul style="list-style-type: none"> <li>» Regular meetings and engagement between local government, ESD experts and developers.</li> <li>» Events and recognition for developers.</li> <li>» Involve developers in creating and promoting the planning pathway and tools.</li> <li>» Link developers and organisations working towards net zero buildings.</li> <li>» Information and case studies.</li> <li>» Training programs.</li> <li>» Education for real estate agents and consumers.</li> </ul>	<ul style="list-style-type: none"> <li>» Relationships between developers and councils are strengthened.</li> <li>» Developers are sharing expertise and experience within their networks and inspiring others to work towards net zero developments.</li> <li>» Policies and legislation are communicated to, understood and adopted by developers.</li> <li>» Good practice is supported, recognised and rewarded.</li> <li>» Industry is skilled at designing, delivering and promoting passive building design.</li> </ul>
Consistency and certainty – decision making, monitoring and enforcement	<ul style="list-style-type: none"> <li>» Leadership and guidance from state government.</li> <li>» Random auditing of BASIX.</li> <li>» Stronger measures for non-compliance and more accountability.</li> </ul>	<ul style="list-style-type: none"> <li>» Expectations are certain and understood regarding compliance and building performance.</li> </ul>
Costs	<ul style="list-style-type: none"> <li>» Levies.</li> <li>» Bonuses.</li> <li>» Incentives.</li> </ul>	<ul style="list-style-type: none"> <li>» Net zero is feasible for developments.</li> </ul>

Following discussion on their chosen theme, each table was asked to list and display the key discussion points. Once displayed, all participants had the opportunity to review the notes from other tables, add any additional points as well as place dots (up to five) on key points that particularly resonated. How they chose to distribute the dots was left up to the individual.

Appendix E provides images of the summary notes from the tables and the distribution of the dots. It should be noted that this was a voluntary exercise with minimal time for people to review notes and place dots. Not all participants participated or felt they had sufficient time to indicate their preference using the dots.

Figure 6 Participants placing dots to highlight key points from roundtable discussions



## 5 Influencing the development industry

Participants identified cost as the key constraint to the development of net zero buildings and precincts. There was mixed feedback on the marketability of net zero developments to tenants and residents and whether developers perceive net zero buildings as having a market advantage.

### 5.1 Ensuring a net zero planning pathway is taken up by the whole industry

Forum participants recognised opportunities to facilitate net zero developments across the range of stakeholders involved in the system from planners and developers to purchasers and tenants. It was noted that the planning system and legislation are well placed to address developers that only respond to mandatory requirements, while property industry sustainability leaders would also be responsive to market expectations and competition.

Responses are summarised in Table 9 below and revolved around the themes of:

- » Higher BASIX targets
- » Education for buyers and tenants
- » Clarity around costs and incentives
- » Recognition and support
- » Monitoring and enforcement
- » Engagement.



*Raise the floor as well **as the ceiling.***

Forum participant response to industry uptake question

Table 9 Ensuring a net zero planning pathway is taken up by the whole industry

Theme	Description
Higher BASIX targets	<ul style="list-style-type: none"> <li>» For industry sustainability 'laggards', incentives are not of interest. It was seen as likely that these organisations would only respond to mandated requirements.</li> <li>» Increasing the BASIX targets will enable a consistent approach across councils.</li> <li>» Councils are struggling to legislate higher performance targets through their development controls and need support for this from state government.</li> <li>» Councils need to support increased BASIX targets.</li> <li>» Identify a tool or mechanism to address operational performance in residential development, including mechanisms to facilitate green leases.</li> <li>» Provide clear communication of target increases and mandated requirements to enable industry to adjust to higher performance standards.</li> </ul>
Education for buyers and tenants	<ul style="list-style-type: none"> <li>» Buyers and tenants should be educated on what to look for and be provided with clear information to make informed decisions – consider the role of developers and real estate agents in educating buyers and tenants.</li> <li>» Opportunity to have public ratings of buildings - similar disclosure to what is required in Victoria, the ACT and Queensland (e.g. Victorian Residential Efficiency Scorecard).</li> </ul>

Theme	Description
	<ul style="list-style-type: none"> <li>» Opportunity to incentivise mandatory disclosure by making grants available to the body corporate of existing buildings.</li> <li>» Provide a marketing campaign <b>and leadership to encourage a shift in buyers'</b> preferences over the long term noting the cost savings and environmental benefit.</li> <li>» Investigate incentives for buyers e.g. cash vouchers for purchasers.</li> <li>» Energy savings are not reflected in strata fees – this needs to be addressed outside of planning.</li> <li>» Support and encourage developers to promote and market energy efficiency features/buildings to purchasers.</li> </ul>
Clarity around costs and incentives	<ul style="list-style-type: none"> <li>» Encouraging developers is best done through speedy approval and reduced upfront development costs – opportunities to incentivise should be considered and balanced against other outcomes (e.g. affordable housing).</li> <li>» Greater knowledge and understanding of construction, maintenance and running costs of net zero features are required to inform feasibility of incorporating them into development sites.</li> <li>» Certainty of finance is critical for development projects.</li> <li>» With the movement towards environmental, social and corporate governance there may be a push for industry to respond prior to gaining finance.</li> <li>» Different tiers of developers have different business models and capacity to absorb costs of net zero buildings – second tier and smaller developers need incentives to achieve energy efficiency.</li> <li>» State government should investigate opportunities for low interest loans, reduced levies and taxes as some councils are not able to offer financial incentives.</li> <li>» It was considered important that the rules for developers are consistent. One participant raised that net zero goals should be incorporated into strategic planning to ensure actions filter into LEPs, site specific DCPs and beyond.</li> <li>» Net zero should be cost neutral.</li> <li>» Developers should understand and value the marketing potential of net zero developments. In addition purchasers should be educated about the long term benefits of these developments.</li> <li>» There is an opportunity to leverage a dropping housing market by differentiating through net zero.</li> <li>» Investigate a cap and trade scheme for carbon positive buildings.</li> </ul>
Recognition and support	<ul style="list-style-type: none"> <li>» Local and state government recognition of net zero developments. Highlight excellence in second and third tier development industry, so that industry can advertise to buyers – reputational return can be an important incentive.</li> <li>» Investigate awards, media and case study promotions.</li> <li>» Provide advice to developers regarding opportunities and technologies to inform early planning for net zero developments.</li> <li>» Build skills and capacity to make innovation accessible and desired for all of the property industry. This could include sharing resources and tools for developers without the capacity or experience to deliver net zero buildings (good practice examples, developer forums).</li> </ul>
Monitoring and enforcement	<ul style="list-style-type: none"> <li>» There is a need for a regulated, compulsory and enforceable planning pathway.</li> <li>» There needs to be an enforceable mechanism to ensure compliance. There is a disconnect between building design (following planning requirements) and building operation. For example, a building may be certified through an energy performance tool but residents/ tenants may not be using, or be aware of, the environmental saving measures incorporated in the construction.</li> </ul>

Theme	Description
	<ul style="list-style-type: none"> <li>» Ongoing measurement is required to ensure compliance with building performance requirements, for example a mandatory rating every three years.</li> <li>» Assessment should focus on actual building performance – BASIX, NatHERS <b>don't</b> line up with operational energy use.</li> <li>» Consumers should be made aware of any monitoring and reporting of performance.</li> </ul>
Engagement	<ul style="list-style-type: none"> <li>» Understanding the difference in philosophy and approach (e.g. aesthetics for tenants, smaller margins) within the property industry was considered important to support uptake of net zero.</li> <li>» Engage widely with all aspects of the development industry including real estate and strata organisations.</li> <li>» Communicate through the Property Council to members.</li> </ul>



*Best practice through leadership and education and ultimately market forces. Policy sets the minimum standard.”*

Forum participant response to industry uptake question

## 5.2 Continuing to support net zero property industry ‘leaders’

Participants held differing views about how and whether to support property industry ‘leaders’ in reaching net zero. Responses are summarised in Table 10 below and revolved around the following key themes:

- » Market changes will influence leading developers to innovate further
- » Regularly update the standard
- » Role of the government in supporting innovation
- » Building awareness and engagement.



*They [leaders] are already making their money innovating, they will push further when the market changes.”*

Forum participant response to supporting ‘leaders’ question

Table 10 **Supporting net zero development ‘leaders’**

Theme	Description
Market changes will influence leading developers to innovate further	<ul style="list-style-type: none"> <li>» Market changes, spurred by increases to minimum standards and consumer preferences, are a key factor in influencing leading developers.</li> <li>» Influencing industry leaders does not need to be a focus, as these organisations will always be innovators – as part of their own ethos or the nature of working with large sites.</li> <li>» There is value in encouraging developers to continue to drive for better practice within the industry, ultimately influencing followers and compliers.</li> </ul>
Regularly update the standard	<ul style="list-style-type: none"> <li>» Increasing the standard across the industry will influence the market for net zero developments.</li> </ul>



Theme	Description
	<ul style="list-style-type: none"> <li>» Voluntary planning and rating tools such as Green Star already enable leaders to be recognised and rewarded. Regular updates to Green Star are seen as a way for leaders to stay ahead of the game and innovate.</li> <li>» Regular updates to rating tools were also identified as a way to shift sustainable practice from innovation to business as usual. Once a clear evidence base is demonstrated, other developers would be more inclined to embrace energy performance innovation.</li> <li>» Voluntary planning and rating tools such as Green Star were also seen as important to ensure leaders addressed more holistic aspects of sustainability including social sustainability and wellbeing.</li> <li>» <b>Current mandatory targets would “have little influence on ‘leaders’ who achieve much higher targets.”</b></li> </ul>
Role of the government in supporting innovation	<ul style="list-style-type: none"> <li>» Government has a key role in supporting innovation. Leadership from government through procurement, sustainability projects and practices, recognition of innovation and co-design with industry is critical.</li> <li>» There should be preferred government contracts for developers who lead in sustainability innovation.</li> <li>» Government should work to ensure the impact of regulation is not prohibitive by putting in place achievable timescales.</li> </ul>
Building awareness and engagement	<ul style="list-style-type: none"> <li>» Building engagement and awareness within the industry is important.</li> <li>» Ensure stakeholders, from design to sales to end user, are connected and able to comprehend the benefits and demands across the industry.</li> </ul>

## 6 Towards a planning pathway

As a closing topic, participants were asked to identify timeframes, targets and existing industry or government models to be considered when developing the planning pathway. Their feedback is summarised below.

### 6.1 Suitable timeframes and targets

Timeframes suggested by participants are detailed in Table 11 below.

Table 11 Possible timeframes

What	When	Why
Complete transition to net zero	~10 years	<ul style="list-style-type: none"> <li>» <b>It's</b> enough time to introduce significant change with the right support.</li> <li>» Industry will accept ongoing updated performance requirements, evidence of this is the incremental changes with NCC Section J.</li> <li>» A complete transition is required for new buildings by 2030 as these buildings will be occupied in 2050 (and will impact the net zero target).</li> </ul>
Targets and legislative changes	5 years	<ul style="list-style-type: none"> <li>» Incorporate targets within existing legislation and planning controls that move developments towards net zero.</li> <li>» Align new targets with the 5 year reviews of LEPs.</li> <li>» Implement a planning pathway slowly to allow the industry to adapt to higher targets (e.g. 5 year increments).</li> <li>» Changing legislation and planning provisions (including planned precincts and greenfield developments) can take 12-18 months.</li> <li>» Timeframes and targets should be in place before urban renewal planning proposals commence so that net zero can be built into the controls.</li> </ul>
Needs of the development industry	3-7 years	<ul style="list-style-type: none"> <li>» Transition could match time from developer land transaction to final sale (generally 3-5 years) for urban renewal while greenfield developments generally require seven years to go from land purchase to sale.</li> <li>» Targets need to be built in before the development site is purchased. Developers need to be aware of the need to factor forward targets into the development planning and feasibility process. It also provides an opportunity for proactive capacity building and could result in developments achieving net zero earlier than targeted.</li> <li>» Developers need at least 5 years before targets can become mandated.</li> </ul>
Education and land release	Fast tracked	<ul style="list-style-type: none"> <li>» Education for consumers needs to be fast tracked to give more time for developers to adjust.</li> <li>» Land release for state and council land must be net zero as soon as possible.</li> </ul>

When deciding on a suitable timeframe, there were a number of considerations participants discussed:

- » Certainty and a clear trajectory are required for the planning pathway, with consistency across councils
- » Different development types and locations will be able to respond to targets at varying paces (greenfield, urban renewal, Sydney CBD, emerging centres, commercial, residential)
  - > Some participants suggested that residential developments will be more difficult to transition than commercial buildings due to end user considerations

- > Participants had mixed feedback on the ability for greenfield to be delivered ahead of urban renewal areas, given the time taken to implement and coordinate new infrastructure with state and local government. Others pointed out the difficulty of working within existing brownfield site constraints and communities.



*It is easier to build [a] new building to a standard up front than retrofit an existing building. [I] would therefore have thought greenfield net zero developments could be done sooner [than urban renewal]”*

Forum participant response to timeframes question

- » There is environmental urgency to achieve net zero, so a pathway should be as quick as the market can bear. Technological advances will also be key to achieving net zero within a suitable timeframe.
- » Effective incentives could assist in accelerating higher targets and timelines to transition to net zero.
- » In order to properly consider an appropriate timeframe for a transition to net zero additional information is required such as property economics.
- » **The pathway should continue to be updated so it doesn’t stagnate.**

## 6.2 Existing industry or government frameworks

Existing planning frameworks for improving the environmental performance of developments suggested by participants are detailed in Table 12 below.

Table 12 Existing frameworks to consider

Opportunity	Description
Existing industry frameworks	<ul style="list-style-type: none"> <li>» Industry led targets are better for innovation and leaders in the industry.</li> <li>» Other non-government bodies play an important role by acting as a different source of information and providing support.</li> <li>» There has been significant work done by GBCA on their Carbon Positive Roadmap and ASBEC's Built to Perform. The net zero planning pathway should align with these resources.</li> <li>» Industry frameworks are important as they guide building operations as well as design and construction e.g. ASBEC and GBCA</li> <li>» Should consider the International Living Futures Institute Zero Carbon Certification. It is a global Zero Carbon third-party certified standard that applies to both new and existing buildings.</li> </ul>
Leveraging government frameworks	<ul style="list-style-type: none"> <li>» Should take into account the district model under the Greater Sydney Commission (GSC) structure.</li> <li>» Identify targets through a collaborative approach across the public and private sector. Involving all stakeholders in identifying targets promotes transparency about the final outcome.</li> <li>» It would be helpful to establish a central organisation to coordinate all sustainability policy and education including bringing together BASIX, NABERS and NatHERS.</li> <li>» Bring other energy schemes such as NatHERS under BASIX to leverage its legislative weight.</li> <li>» <b>Align NSW's approach with what is occurring in other states.</b></li> <li>» Support calls for higher NCC standards through Section J.</li> </ul>

Opportunity	Description
Overseas examples	<ul style="list-style-type: none"><li>» <b>Singapore’s green space ratios have</b> been a success through the provision of effective incentives.</li><li>» Toronto gave its property industry 10 years to adapt to changes to legislation through advanced planning.</li><li>» Portland, Seattle, San Francisco are good examples of post occupancy measurement and assessment.</li></ul>

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# 7 Next steps

The **City of Sydney** will be commissioning a consultant to develop performance standard pathways to high performing net-zero energy/carbon office, hotel, multi-unit residential and mixed-use developments in Greater Sydney planning controls. This will be accompanied by an evidence base including feedback from stakeholders.

In addition a Planning Leadership Advisory Group will be formed that will represent the stakeholder groups and provide guidance and feedback to the consultant on the development and delivery of the performance standard pathways to net-zero energy buildings. The Advisory Group will have representatives from each stakeholder group that attended Forums 1 and 2.

A final Forum is planned to be held in **2020**. It will provide an opportunity to refine and finalise the recommended planning pathway with all key stakeholder groups.

Figure 7 Forum introduction from Andrew Thomas



Figure 8 Outcomes of roundtables



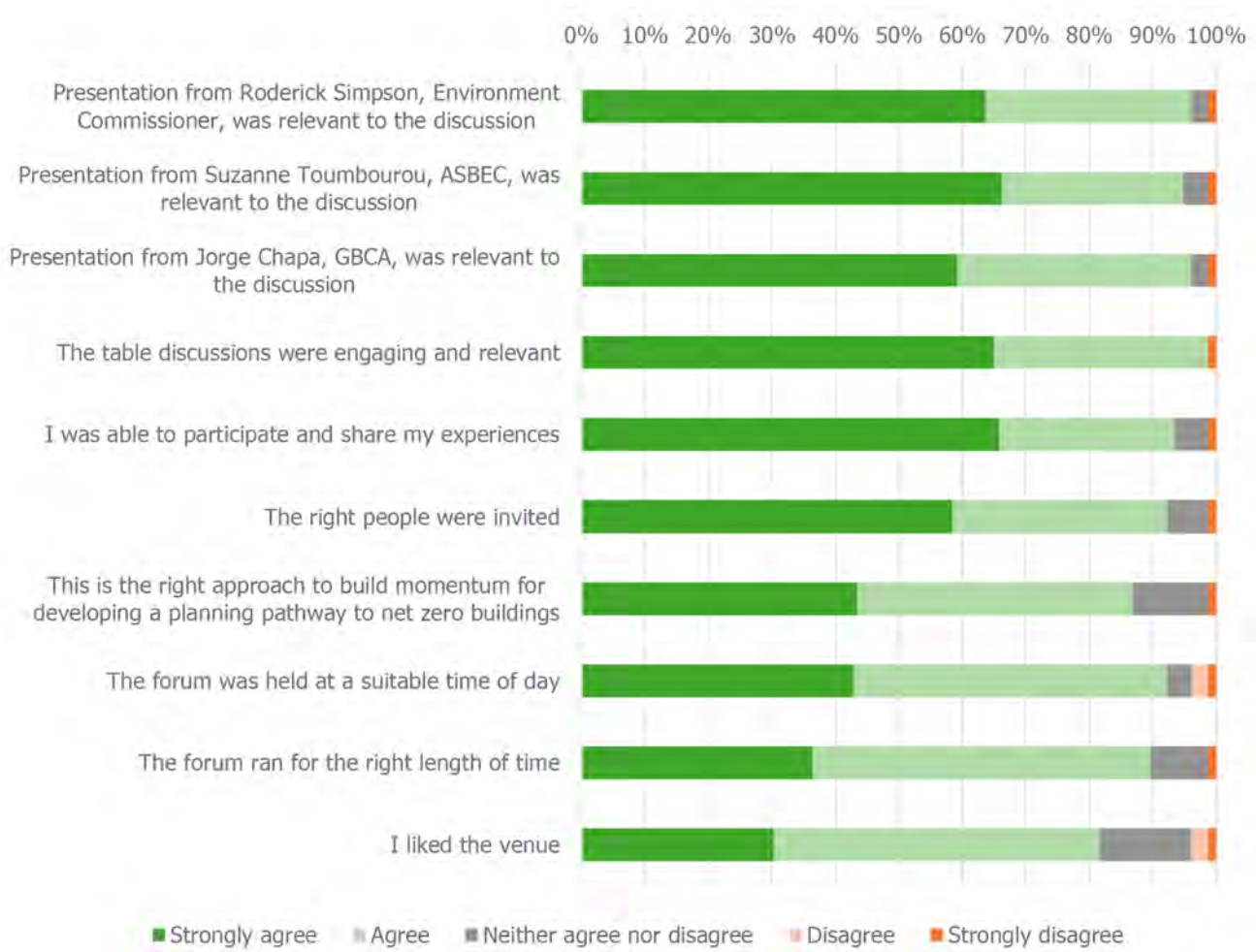
# 8 Forum feedback

Feedback forms were received from 85 of the over 100 participants that attended. The breakdown of attendees that provided feedback were:

- » 42 local government representatives
- » 6 State government representatives
- » 24 ESD consultants
- » 6 planning consultants
- » 6 other representatives.

Overall, and shown in the figures below, the participants highly valued the Forum and felt that it was the right approach to encouraging momentum for net zero developments.

Figure 9 Feedback form responses



## What do you see as critical to developing a planning pathway to net zero buildings?

42 comments were captured from local government representatives in response to this question. The most common answers centred around three elements:

1. Greater coordination between all levels of government (24%)
2. Strong leadership from the State government (21%)

### 3. Increasing the utility of regulating instruments (e.g. BASIX) (17%)

Other comments included creating mandatory requirements for developers, greater engagement with developers and capacity building and more appropriate legislation and policing of developments.

Planning consulting representatives (6) identified the following as critical to a net zero planning pathway:

- » Creating clarity of what net zero means
- » A transitional period for new mandatory minimums standards
- » Government leadership and commitment.

ESD Consulting representatives (24) generally noted the importance of:

1. Mechanisms to regulate and measure performance (21%)
2. Engaging key stakeholders (17%)
3. Clear long-term targets (17%)

Other comments included greater leadership from government, more education around net zero developments and incentives for those who go beyond minimum targets.



*A high level objective must be set so that this net zero can be set and allowed to flow down through the various levels of authority involved in planning."*

ESD consultant

State government representatives (5) felt the net zero planning pathway should:

- » Look beyond planning and take into account a greater network of industries (finance, manufacturing etc.)
- » Engage those not already supportive of net zero initiatives
- » Ensure that industry has the capacity to implement any changes.

**Feedback from 'Other' representatives** (6) included a need for a clear long term goal, collaboration between sectors and a cultural change that supported net zero concepts.

The following summarises how participants responded to the question:

**What role would you like to take in this project? What role would you like industry to play? What role would you like Sydney Councils to play? What role would you like State government to play?**

Responses from Local Government

29 comments were captured from local government representatives. The most common answers centred around:

1. The State government needing to take the lead (46%)
2. A need for government and industry to have a collaborative approach (25%)
3. Councils need to agree upon a standardised framework (21%)

Other comments included creating a sustainability taskforce within the Department of Planning and Environment and having ambassadors from councils to learn and share new concepts and ideas.



*State government need to get on board, play its role via COAG to set net zero trajectory and meanwhile lift the BASIX targets for the whole of Sydney (or State)."*

Local government representative

### Responses from Planning Consulting

9 comments were captured from planning consultants. They focused on leadership being needed from state and local levels of government, a need for greater education and awareness and recognising the limitations of consultants promoting sustainable outcomes without legislation.

### Responses from ESD Consulting

22 comments were captured from ESD Consulting representatives. The common sentiments focused on:

1. State government needs to take the lead in regulation (28%)
2. State government needs to engage with local government (14%)
3. Need for greater education and awareness of Net Zero Buildings (10%)

Other comments included a need to promote design innovation, industry accountability and compliance and a political commitment from the State towards a Net Zero philosophy

### Responses from State government

3 comments were captured from State government representatives. Sentiments included a need from the state government to take a strong leadership role, the state government should curate research and resources to support tier 2 and 3 developers and a need for greater collaboration between industry and local government.

### Responses from Other representatives

5 comments were captured from Other representatives. Sentiments included an enthusiasm to stay involved in the Net Zero conversation and to be conscious for opportunities to incorporate Net Zero initiatives in their industries.



# Appendices

- A Participant organisations
- B Forum invitation and brief
- C Agenda
- D Feedback form
- E Roundtable discussion 2 – butchers paper sheets and voting

# A Participant organisations

- » AECOM
- » ARUP
- » ASBEC
- » Atelier Ten
- » Aurecon
- » Australian Institute of Architects, NSW, Built Environment Committee
- » Bayside Council
- » Blacktown City Council
- » Camden Council
- » Campbelltown City Council
- » CDA Architects
- » City of Canada Bay
- » City of Canterbury Bankstown
- » City of Melbourne
- » City of Parramatta
- » City of Ryde
- » City of Sydney
- » Consult Australia
- » Cumberland Council
- » Cundall
- » Department and Planning and Environment
- » Department of the Environment and Energy
- » Donnelley Simpson Cleary Consulting Engineers
- » Efficient Living
- » Ethos Urban
- » Flux Consultants
- » Georges River Council
- » Greater Sydney Commission
- » Green Building Council of Australia
- » Hawkesbury City Council
- » Hornsby Shire Council
- » IGS (Integrated Group Services)
- » Inner West Council
- » Integral Group Consulting Engineers
- » JBA
- » JHA Consulting Engineers
- » KBR
- » Kinesis
- » LCI
- » Lendlease
- » Liverpool Council
- » Mecone - Urban Planning
- » Mosca Pserras Architects
- » Mosman Council
- » Norman Disney and Young
- » North Sydney Council
- » Northern Beaches Council
- » Northrop
- » Office of Environment and Heritage
- » Penrith City Council
- » Planning Institute of Australia
- » Property Council of Australia
- » Randwick City Council
- » RobertsDay
- » Robinson Urban Planning
- » Scott Carver
- » SJB
- » SMEC
- » Sophie Solomon Design (SSD) Studio
- » Steensen Varming
- » Strathfield Council
- » Surface Design Pty Ltd
- » Sutherland Council
- » Umow Lai
- » Urbis
- » Waverley Council
- » Wollondilly Shire Council
- » Wood & Grieve Engineers
- » Woollahra Municipal Council
- » WSP Australia

## B Forum invitation and brief



### Invitation

#### Creating a Planning Pathway to Net Zero Buildings

Join us for a breakfast forum on Thursday 1 November and share your views on how planning can support the transition to net zero development. Help shape the planning pathway that will support the:

- NSW Government net zero emissions target
- Greater Sydney Region Plan low carbon city objective
- Resilient Sydney strategy for buildings, assets and precincts

This is your opportunity to share the issues and opportunities you've identified or experienced within the NSW planning framework. It's also an opportunity to collaborate with industry and local and state government on a planning pathway to transition to net zero multi-unit residential, office, hotel and mixed use developments.

This is the second of three forums. Forum 1 was for developers and construction companies. Forum 2 is for sustainability and planning consultants and planners across Greater Sydney. Forum 3 in July 2019 brings all these groups together to finalise the planning pathway to net zero development.

At this invitation-only event, you will:

- hear from Roderick Simpson, Environment Commissioner at the Greater Sydney Commission on low-carbon precincts
- hear from industry colleagues about current development practice
- identify planning issues and opportunities to transition to net zero development
- network with industry colleagues over breakfast

# Creating a Planning Pathway to Net Zero Buildings

1 November 2018 is the second forum of a series of forums to help local and state government and industry better understand current practice, as well as planning issues and opportunities within the NSW planning framework to support the transition to net zero development. The forums target new non-residential (office, hotels and mixed-use) and multi-unit residential developments.

## Forum brief

### Purpose

The forum partners would like to explore, with ESD and Planning consultants and local and state government planners, the planning challenges of how to achieve low-carbon, high efficiency buildings and precincts to contribute to the NSW target of net zero emissions by 2050 and reduce climate change impacts.

In Greater Sydney, the largest contributor to greenhouse gas emissions is energy use in buildings, hence the forums' focus on buildings and precincts.

The way Greater Sydney's urban structure and built form develops and redevelops over time can support NSW's transition towards net zero emissions.

### Net zero

There are many definitions, constraints and expectations for the term 'net zero'. For the purpose of this forum, we will be using a European Union definition to guide discussions.

*EU, Energy Performance of Buildings Directive  
Nearly zero-energy buildings (NZEBS) have very high energy performance.*

*The low amount of energy that these buildings require comes mostly from renewable sources.*

We understand there are inherent issues with the definition, such as 'very high energy performance' not being defined, and lack of clarity around on-site vs off-site renewables. Please remember the definition is to provide guidance for discussions on the day, and not define net zero for forum partners or your organisation.

### NSW planning framework

The NSW planning framework provides the broad context and boundaries for this series of forums.

We would like forum invitees to consider all aspects of the NSW planning framework when thinking of the current perceived and real issues, barriers and challenges encountered for new developments to transition towards net zero. The planning framework consists of the Environmental Planning & Assessment Act 1979; state environmental planning policies (SEPPs) (e.g. BASIX SEPP, Infrastructure SEPP); Region and District Plans; local environmental plans; development control plans; other planning tools (e.g. NABERS, Green Star).

Greater Sydney's most recent and comprehensive planning document, the [Greater Sydney Region Plan – A Metropolis of Three Cities](#), identifies improved building efficiency as one of the most important pathways towards net zero emissions in Greater Sydney. The five District Plans are a guide for implementing the Region Plan. All District Plans contain the Planning Priority Reducing carbon emissions and managing energy, water and waste efficiently. This series of forums will discuss how to support the objectives and strategies identified in the Region and District Plans to achieve a low-carbon, efficient city.

### Forum questions

Over page.

### Forum questions

Prior to the forum, consider your role or potential role in planning for, designing and/or building net zero developments. Engagement might be in developing or reviewing a planning proposal, negotiating or assessing a development application, designing a building to meet a condition, or providing ESD or planning advice on the development.

You'll be asked to use a 'land use planning lens' on the day of the forum. The questions will interrogate the opportunities and barriers identified during Forum 1 to further develop the findings.

Forum 2 will explore the below questions:

- Q1: What are the current challenges to developing net zero buildings and precincts? (e.g. legislation, using current tools, capital cost, skills and expertise)
- » Thinking about the NSW planning system
  - » Thinking about the development industry
- Q2: Issues with planning tools (e.g. BASIX, NABERS, Green Star) and the National Construction Code were identified at Forum 1. What improvements can be made to existing planning tools to support net zero development and why?
- Q3: Carbon offsets or offsite energy generation will be an important part of achieving net zero high rise development. Can the NSW planning system be used to support offsets or facilitate transfers of energy production or renewables entitlements between buildings, and if so, how would this work? Are changes needed outside of the planning system to support this? Would there be compliance challenges?
- Q4: Can planning-based incentives be better targeted to support net zero development? Are there other incentives we could use apart from floor space ratio? What would be the strengths and drawbacks of using these incentives for the planning system, Local Government Area and development industry?
- Q5: What support or resources are required to assist a) planners and b) developers to better integrate sustainability into planning policy? Who is best placed to provide that support - council, districts or state? [Consider: cost benefit analysis of developments, better understanding of the dynamics between consumers, developers and the marketplace, application of National Construction Code, better understanding of rating tools, negotiation skills.]
- Q6: The buy-in of the property industry is vital to achieving net zero development. How do we ensure that a planning pathway is taken up by the whole industry?
- Q7: Forum 1 identified the need for the planning system to support and recognise developers that are leading in driving improved sustainability performance of new developments and encourage 'followers' through mandatory requirements. For example: If we lift the mandatory requirements for all to be net zero how do we continue to support 'leaders'?
- Q8: Forum 1 identified the need for a scaled approach to transition to net zero development to enable energy targets to be built into land pricing. A shorter timeframe was suggested for urban renewal and longer for greenfield development. What are suitable timeframes and targets to transition to net zero development and why?
- Q9: Are there existing industry or government frameworks that should be considered when developing the planning pathway (e.g. approaches from other cities, GBCA Carbon Positive Roadmap, ASBEC Built to Perform)? Identify how they could be used and why?

### Other

This is the start of the conversation. We welcome any and all ideas on the day.

Feedback on the day will be anonymous, and the findings of the forum will be reported but no organisation or individual will be identified.

# C Agenda

**Creating a Planning Pathway to Net Zero Buildings**  
**Thursday 1 November 2018, 8.00am – 12.00pm**  
**Banquet Hall, SMC Function Centre, 279 Castlereagh Street**

<b>Breakfast and networking (7.30-8.00am)</b>
<p><b>Welcome</b>  <b>Andrew Thomas</b>                  Executive Manager of Strategic Planning &amp; Urban Design  <i>City of Sydney</i></p>
<p><b>Introduction</b>  <b>Vicky Critchley</b>                  Facilitator  <i>Elton Consulting</i></p>
<p><b>Low Carbon Precincts</b>  <b>Roderick Simpson</b>                  Environment Commissioner  <i>Greater Sydney Commission</i></p>
<b>Round table discussion 1: Current challenges to developing net zero buildings and precincts</b>
<b>Round table discussion 2: Opportunities to facilitate net zero buildings within the planning system</b>
<b>Morning Tea and Networking (10.15-10.30am)</b>
<b>Round table discussion 3: Incentivising the development industry</b>
<p><b>Overview of Built to Perform</b>  <b>Suzanne Toumbourou</b>                  Executive Director  <i>Australian Sustainable Built Environment Council (ASBEC)</i></p>
<p><b>Overview of Carbon Positive Roadmap</b>  <b>Jorge Chapa</b>                  Head of Market Transformation  <i>Green Building Council of Australia (GBCA)</i></p>
<b>Round table discussion 4: Planning pathway transition</b>
<b>Next steps</b>

# D Feedback form

**Q1 What area do you work in?**

- ESD consulting
- Planning consulting
- Local government
- State government
- Other \_\_\_\_\_

**Q2 What is your role in the planning process of new development? (pick multiple options)**

- Act as proponent for the developer
- Provide ESD advice on development for DA or planning proposals
- Review planning proposals
- Prepare DAs
- Provide planning advice for DA or planning proposals
- Strategic sustainability advice at a council to the Strategic/DA Planning teams
- Undertake DA assessments at a council
- Other \_\_\_\_\_

**Q3 How much do you agree or disagree with the following statements?**

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	I don't know
The presentation from Roderick Simpson, Environment Commissioner, was relevant to the discussion						
The presentation from Suzanne Toumbourou, ASBEC, was relevant to the discussion						
The presentation from Jorge Chapa, GBCA, was relevant to the discussion						
The table discussions were engaging and relevant						
I was able to participate and share my experiences						
The right people were invited						

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	I don't know
This is the right approach to build momentum for developing a planning pathway to net zero buildings						
The forum was held at a suitable time of day						
The forum ran for the right length of time						
I liked the venue						

**Q4 What do you see as critical to developing a planning pathway to net zero buildings?**

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**Q5 What role would you like to take in this project? What role would you like industry to play? What role would you like Sydney councils to play? What role would you like State Government to play?**

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**Q6 Do you have any other feedback on today's forum?**

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## E Roundtable discussion 2 – butchers paper sheets and voting

Please note that not all participants took part in this exercise.

# Group A

Group A: What improvements can be made to existing planning tools (e.g. BASIX, NABERS, Green Star) and the National Construction Code to support net zero development and why?

- Ongoing mechanisms to measure & check ~~asset~~ performance - commitment agreement
- Standardised provisions that Council can put in LEP / DCP
  - District plans level
- Greater independent auditing to avoid gaming of tools (Nabers...)
- Sustainability enforcement officers
  - environmental compliance levy
- Guidelines for Council
- Maximum carpark controls / carpark sizes
- Management Plans & framework to support them
- Guidelines for passive design for commercial buildings
- Sustainability explained in design guides

## Discussion 2 Tool Improvements

- **BASIX** - More flexibility Required
  - **Updates** needed
  - some invisibility of Back end frustrates ideas
- BASIX training needed
- Investment in tools (BASIX + NABERS) given that \$ \$ are generated from scheme
- "Raise the Bar" is a key part of ~~the~~ progressing to Net zero + Trajectory
- Site constraints: typically more problematic than cost constraints

- **Greenstar NABERS** Voluntary therefore different animal
- **NCC**
  - ↳ only significantly deliver on Net Zero if mandated (+ \$ for Greenstar - mandate the GHG credits)
- **Spill over if changing "Roaming"**
  - + Shared spaces - current tool (NABERS) can cope well with this. Tool too rigid
  - Tools need to cope with more flexible

## PLANNING TOOLS ①

- **NCC**
  - get backing/setting local situation to assist
  - co-ordinated across country? more holistic approach, nationally consistent?
  - will BASIX pick it up?
- **NCC Construction Code**
  - **BASIX** a planning tool
  - **Other states & territories**
    - National consistency
    - v exceeding standards (can set higher standards)
  - **NCC building stage**
    - Other jurisdiction use - less holistic
    - BASIX is a planning stage (BASIX) - more different "more" impact impacts more holistic
  - National standards ensure consistency but does it then mean too low & can't adjust standards for local circumstances (comps)
  - Increasing targets impact on areas with different climates, socioeconomic, regional v city
  - Planning system incentives to go above min BASIX small number of applications qualify

## Depending on which tool using ③

- NCC effective "stick" (mega tone) impact of ratcheting the stick up to higher performance
- **BALANCE** the impact of that on some areas/implicated to explore (eg incentives) (localities/jurisdictions)
- **Disclosure** - disclosure standards of buildings in the city
  - calibrate building codes & interventions + it's good marketing
- **discussions** come back to cost & profit how to address that
- **BIM** for compliance & monitoring developer/builders
  - embedded practice is often not the lowest cost of building etc. Assumption flawed?
  - ongoing impact on consumers isn't factored into these decisions so standards need lifting? education.

## VPAs & Net incentives ②

- VPAs Initiatives VPAs & Net incentives but greater densities achieved can impact on previous community consultation on character of an area
- Needs to be communicated at the community consultation stage so community understands
- Black letter law needed for people to change
  - NCC existed on today, slow initiatives, people only available today only today
- Model codes - how to set model codes upper that show opportunities/code standards of the future - Allow people to plan for & understand the initiatives of the future that are coming
- Issues - haven't been updated by BASIX
  - monitoring of implementation
  - abstract nature of carbon reduction/strategy how translated into built form, massive industry doesn't relate to an outcome of how performance measured in real world
  - callibrate targets. Language used in compliance & verified
  - two industries not talking to each other properly

# Group B

Group B: Can the NSW planning system be used to support carbon offsets or facilitate transfers of energy production or renewable entitlements between buildings, and if so, how would this work?

Table 14

## OFFSETS | FACILITATING TRANSFER

How can the planning system support this?

- Embedded networks
- How do you aggregate multiple sites?  
eg. Blockchain, PPA. (Power Purchase agreement)
- Precinct opportunities - plan upfront
- Better share energy across a local area?
- We need systems outside planning to support
- Space allocation → eg. space for PV panels.
- Incentives to use off-setting: + got something back eg. F&E bonus.
- If planning had a mech. to require ongoing compliance eg. Fire Planning Code. (Safety) not planning requirement, As legislative requirement.

### NOT PLANNING SYSTEM?

In short: Can planning system support offsets? In short yes, but its support is design or targets at DA. Need mech. outside for monitoring + requirements if not met.

Table 14

Can Planning support offsets?

- Yes - support = targets or budgets <sup>carbon</sup> at DA  
= compliance  
= monitoring + update targets + policy.

- PUF - need mech. outside planning system eg. Fire Safety Code.
- Mech. + penalties + ongoing reporting. ↳ if not met.
- Need monitoring + reporting to feed back into planning system.

# Group C

Group C: Can planning-based incentives be better targeted to support net zero development?

## PLANNING-BASED INCENTIVES

- > Time-frame of approval
  - The "Green Door"
  - Requires Gov framework overhaul

- > Precinct-based shared infrastructure brings efficiency - Incentivised by LGA leadership & facilitation
  - Centralised car-parking
  - Tri-gen / micro grid.

- > Transferable sustainability credits
  - eg retrofit existing building for tradeable floor space (like heritage floorspace trades).

## PLANNING INCENTIVES

- Better targeting - clear definition of goals
- Increase baseline for incentive to kick in (beyond SARIX)
  - Only possible w/ stronger leadership
  - Set aspirational pathway - stretch targets
  - pull along industry. fully capturing: includes environ/social cost & benefits
  - Orientations - use incentives for the things that REQUIRE ~~incentive~~ a push. Not BAU.

Other incentives (beyond ESR) / Benefits to developer

- 1 Green Star "KUDOS" - Be a leader.
- 2 Marketability of cost-savings - sell more/faster eg offset
- 3 Green Space Ratio - Singapore
- 4 Recognition - on a list of high performing companies. shareholders - value as a brand.

### PRO'S / CONS

5 Lot amalgamation opportunity - facilitated / brokered by independent. → Better governance.

- PRO'S
- Be a leader - get recognition.
  - Better marketing - sell more.

- CONS
- Innovation is challenging.
  - Piloting is all hitting the same barriers - frustration.
  - Cost of becoming a renewable generator - extra charges.

Shift incentive to manage whole life cycle - address risks

Require developer to get incentives

## GROUP C: INCENTIVES

- EXPEDITED APPLICATIONS
- REDUCED RATES/LEVYS
- ACCESS FINANCE MECHANISMS
- STREAMLINED ACCESS TO SOLUTIONS THAT TYPICALLY REQUIRE SIGNIFICANT RESOURCES
- UTILISE Gov procurement to incentivise & create market demand
- Limit disincentives for NZE
- Clarity & certainty Vs flexibility
- Must have commercial benefit
- Trajectory incentives & time limited

# Group D

Group D: What support or resources are required to assist:  
a) Planners and  
b) Developers  
To better integrate sustainability into planning policy?

## SUPPORT + RESOURCING

- Clear objectives + Controls  
⇒ What's the vision?
- Standard Controls + Evidence that can be shared between Councils
- Consistency with DCPs across Sydney
- Move Sustainability in LEP
- Staff resourcing for sustainability outcomes

① WHAT SUPPORT OR RESOURCES ARE REQUIRED TO ASSIST PLANNERS & DEVELOPERS TO BETTER INTEGRATE SUSTAINABILITY INTO PLANNING POLICY?

PLANNERS

1. FRAMEWORK FOR POLICY UPDATES STRATEGIES FOR NET ZERO → STRATEGIC DIRECTION VISION  
WHAT NET ZERO MEANS
2. KNOWLEDGE GAP → ADDRESS WHAT DOES SUSTAINABILITY MEAN
3. ESD INITIATIVES AT THE MERCY OF MARKET FLUCTUATIONS NO LEGISLATIVE REQUIREMENT TO ENFORCE REGULATE INITIATIVES → LEGISLATED MINIMUMS
4. LEADERSHIP → KNOWLEDGE FOLLOW THROUGH
5. EXPERTISE → FUNDING EDUCATION → GUIDANCE → EXAMPLES
6. ASSIST DEVELOPER → BONUS / INCENTIVES
7. CERTAINTY → SETTING EXPECTATIONS EARLY

### Group D Support + Resourcing

- Education → increase expertise in groups
- Day to day resources → LEP policies → standard LEP classes in instrument
- Issue at policy level don't have controls → need stronger leadership from NSW Govt → need a bill → better + benefits + developer do take initiative → however raise incentives
- Establish the Design tool a performance tool
- Common need to know how to communicate with developers that are not in industry organisations
- Who should lead? CSC or DPE?
- Leadership DPE within Councils
- Patching in DPE & CSC at times depending on issue.
- Community engagement/education

## SUPPORT + RESOURCING

- DEVELOPERS
- TIER 3: Cost benefit analysis of sustainability features
  - Technical knowledge of Precinct infrastructure
  - Better framework for ESD reports
  - Incentives in VPA's or trade offs for Sustainability stretch eg. FSR or open space
  - Greater Syd Commission Resource Hub + High level advisory (free)

## SUPPORT + RESOURCING

- Template contracts for precinct energy/water infrastructure
- Extended liability beyond 12 month defect period

DEVELOPER

- SUSTAINABLE STRUCTURE
- TEMPLATE GOVERNANCE STRUCTURE
- URBAN FORMS → WHEN ARE THE BENEFITS REALIZED
- EDUCATION OF END USER

WHO IS BEST PLACED TO PROVIDE THAT SUPPORT?

1. MULTI PRONGED SUPPORT SYSTEM → STATE, DISTRICT & COUNCIL
- 2.

### Group D: Support & Resourcing

Planners:

- Changing training & on the job training
- ESD a must a training program / conversations → LEP / DCP updates
- State to audit BASIX certificates to ↑ confidence in compliance
- Certificates - Ratings - Market trends - Thing to look for - Training targets
- Dedicated Sust. Focus in Planning Area

### Group D: Developer Support + Resourcing

- Case studies
- Template to articulate sust. elements to Councils of a development application
- Regular Engagement with Councils - eg. - Annual mtgs. et. - for many Councils (like building industry needs Perm.)

### ① SUPPORT + RESOURCING

- Training required for planners particularly experienced in planning (time pressure)
- Lack of staff expertise in planning consultation about net zero (eg. CS3 subsidies + for trials)
- Hard to design for the life of the building - Inflexible design
- Plan for residential in high density location → potential for greenbelt
- Need understanding of policy system
- Plan a tool to assist
- Poor understanding of policy system → need simplification of rule and rules → need to speak same language

