National Energy Performance Strategy: consultation paper

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Climate Change

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14 How can demand considerations be better integrated into Australian energy governance and what are the priorities for change?

- Support the aims of the National Energy Transformation Partnership (NTEP) through improved governance to ensure consistency and shared responsibility toward achieving the national vision and targets. Better integrate performance actions across range of stakeholders and portfolios to ensure efficiency, minimise costs and explore best opportunities for transition.
- To support global climate change initiatives and decarbonisation trajectory, the Institute supports:

i. The elimination of the use of natural gas in all new buildings from 2025.
ii. The retrofitting of all existing buildings to only use clean energy by 2040.
iii. The rapid decarbonisation of Australia's electricity grids and rapid uptake in on-site generation of renewable energy.

- Set a target and time frame for all new buildings to be net zero operational and pathways to decarbonise all building operations, including existing housing. The Institute is committed to:

i. All new buildings and major renovations having net zero operational carbon emissions by 2030

ii. All existing building having net zero operational carbon emissions by 2040
iii. Nationally consistent methodology for mandatory embodied emissions measurement and reporting in state and territory legislation by 2025
iv. All new buildings have a 40% reduction in embodied carbon by 2040
v. All new buildings and major renovations have net zero embodied carbon by 2040

- Develop a national standard for the design, construction and infrastructure industry to assist with the delivery of low embodied energy buildings and infrastructure. Set targets and timelines for achieving low embodied energy buildings and infrastructure.
- The existing National Electric Vehicle Strategy needs to be part of a larger integrated Transport Policy which looks at the transformation of all transport. This policy needs to include airlines, cruise and new technologies (e.g. drone delivery systems).
- Focus of reform needs to be on improved health; energy-efficient homes are healthier to live in and reduce the risk of thermal stress especially with lower income households. Not only will people's lives be better and healthier with more comfortable homes there will be savings in health expenditure, as well as energy consumption. https://theconversation.com/heat-kills-we-need-consistency-in-the-way-we-measure-these-deaths-120500
- Thermal performance of Australian housing remains poor, with estimations of housing in most states performing at averages of 1.8 stars NaTHERS – 6 – 7 stars NaTHERS is mandatory for newly built homes in line with the National Construction Code. Basic building fabric performance improvements remain the 'low hanging fruit' that government should focus on.

15 What new or modified coordination mechanisms or institutional responsibilities would be appropriate to better drive energy performance action in the future?

- Commitment to legislated national and sectoral targets for energy performance, which will in turn build confidence in future private sector investment in energy efficiency, energy management and other performance strategies.
- Strategy toward national consistency, referencing legislated targets, in building regulation and NCC adoption in all states and territories.
- Investment in growing and coordinating industry skills and training in glazing, insulation and air-sealing. Ensuring as-built testing is supported and mandated across various trades to raise industry capability and as-built performance (e.g. door blower tests becoming regular practice, and in turn contributing to the building fabric performance of new builds).
- Government industry leadership through:

i. Adoption of an applied energy performance retrofit program on all public assets, driving the creation of a larger energy efficiency delivery industry that would then be

geared up to service the rest of industry.

ii. Introduction of pilots and policies to ensure new government assets are designed and built to high energy efficiency ratings, above those stipulated in the NCC.

- Invest into PR and education campaigns to engage the private sector and public.

Utilise exemplar pilot projects to demonstrate the benefits and value of energy efficient, low carbon buildings.

16 Would an energy efficiency target or targets be suitable for Australia?

- The Institute supports the introduction of progressive and legislated energy efficiency targets in Australia. The targets need to aspire toward a broader commitment to decarbonisation and climate change policies.
- Targets will need to come with support for authentic data collection, as-built performance measurement and education/training to assist the sectors in achieving goals.
- Varying targets by sector would be sensible; buildings have a huge potential to overachieve in energy efficiency. The built environment accounts for 39% of all carbon emissions, globally, with operations emissions accounting for 28% . Sectoral targets could include milestone targets and implementation timelines, working with all sectors and levels of government to achieve them or amend them as required.
- Energy efficiency targets (both regulated and market-driven) currently apply to individual building assets, mostly at the point of new construction. Broader overall targets or caps for the built environment that diminish over time may help to refocus attention on existing building stock.
- Our members view the key challenge of achieving the energy efficiency targets, as the upgrade of existing (and often poor-performing) building stock. Existing building owners, both residential and commercial, may require further government support in the form of subsidies, grants and technical assistance. There is an opportunity to re-introduce the Green Loans Program from 2010 to support existing home owners in retrofits, for example.

17 What is the most appropriate methodology for designing and implementing a target that effectively drives demand side action towards Australia's overall net zero target?

- International benchmarking, such as RIBA UK targets, and consultation are key in establishing appropriate targets. Consultation is important not just with industry and energy providers but also consumer groups, real estate institutes, retailers to ensure the benefits of purchasing more efficient equipment or properties becomes prevalent priority across all user groups. The consultation that occurred for the Trajectory for Low Energy

Buildings was broad and well delivered and would be a good model but more stakeholders need to be involved.

- Public promotion and education about energy efficiency and targets needs to be properly resourced to ensure that the public and industry are aware of aims and targets, benefits to them, technical information and resources, and ultimately positively engage with the process. Campaigns need to be diverse targeting a variety of demographics, with modern communications methods (e.g. lifestyle television programs, on-line platforms, social media, etc).

18 How should progress towards an energy efficiency target be measured?

- Established governance with articulated and regular reporting to ensure periodic (at least annual) review of data against targets with impacts on trajectories need to occur.
- Similarly, electricity retailers will need to report on residential energy supply data.

19 What are the key opportunities to improve the energy performance of new and existing residential buildings?

- The recent improvements in the NCC 2022, increasing the minimum level of thermal performance of building fabric and introducing an energy budget for residential buildings is a positive step toward improving the energy performance of new/retrofitted residential buildings. The Institute supports the ABCB in accelerating the review toward future NCC revisions improving the performance and reducing the carbon footprint of residential buildings. The Institute reiterates its value in ensuring consistent adoption and transition of NCC amendments across all states and territories. The current variance of implementation and transition of NCC 2022 requirements across the country, results in confusion, inconsistent capability in the design and construction industry, and inconsistent outcomes.
- Further increases to the minimum standards for new builds and also for renovations. The increase to 7 star is conservative (by global benchmarks). The recent example of Scotland mandating all new builds to meet an equivalent of the Passivhaus standard is an exemplar policy decision. While gradual increases in performance may seem appealing, they are massively impacting on the retrofit challenge as all 2023 homes will be looking to be retrofitted in the 2030's.
- Mandatory disclosure of energy rating upon the sale of properties: additional support for the national Scorecard system - https://www.homescorecard.gov.au/ to ensure that is adopted through all jurisdictions as mandatory on sale or lease of properties.
- Education and incentivisation of passive, well oriented, energy efficient buildings not reliant on mechanical heating and cooling.
- The quality of workmanship and construction needs to be addressed. The current system is based upon a design being able to deliver an outcome. There are many examples

of poorly constructed buildings and/or those not built as designed; not addressing this issue makes the increasing minimum requirements irrelevant as they will not be delivered. The Institute supports the introduction of as-built audits and/or performance testing for all new builds and retrofits.

- Improve verification of built works against specified energy performance measures (i.e. certifier to check the correct insulation has been installed, window U-values, appliances). Building certifiers and engineers have key compliance inspection points during construction – installation of insulation and other key energy efficiency components are not included in these even though these elements are governed by the building regulations. A mandatory stage inspection after insulation is installed but before it's covered by linings should be adopted by state regulatory requirements. There is ample evidence that insulation is not always installed as designed, specified and modelled in NatHERS, but there is currently no QA process to check this and ensure residents are getting the performance they should. This needs to be supported by education programs on specifying and detailing for energy efficiency so that whole construction industry understands the importance of correctly installed insulation and membranes and other measures.
- Provide an enabling environment to help accelerate the uptake of newer technologies such as heat pumps through more attractive incentive schemes and more stringent regulation which would see significant gains in energy efficiency at the household level. There is a need to reduce barriers that limits the uptake of energy efficiency measures and technologies like heat pumps, meaning lower income households and renters are missing out on energy savings while energy prices continue to rise, as also happened during the boom in installation of household solar.
- Encourage better planning of new residential subdivisions and precincts to ensure consideration of local climatic conditions and that individual lots have good solar access. This increases the opportunity to optimise the design of individual houses to be more energy efficient.
- Mandate electrification of all new and existing houses, with phased abolition of gas connections and appliances.
- Other globally recognised approaches/software for delivering healthy, comfortable and efficient buildings should be automatically recognised in the NCC (e.g. Passivhaus). To ignore a system with a 30 year track record is unhelpful when the need for systemic change is paramount.
- An increased focus on building efficiency will not only decrease overall energy use but will make load shifting more viable as the thermal inertia of well-designed, constructed and insulated buildings allows them to better utilise intermittent renewable energy sources, therefore, reducing the need for energy storage - i.e. a well insulated home can be mechanically heated during daylight hours and retain the heat overnight.
- There is currently little government or industry focus on the efficiency of retrofits;

increasing focus here would lead to similar positive impacts as outlined above.

- The NatHERS (and by default NCC) needs to shift away from climate based energy targets to an absolute energy target. The current system allows a 7 star home in Darwin to use 10 times the energy of a 7 star home in Sydney. Aside from the social inequity between regions, it will further exacerbate the retrofit challenge in coming decades. This inevitable change to an absolute target would be best made sooner rather than later.
- Consider the use landscaping in both private and public spaces and the potential for it to have a really positive effect on energy consumption through reducing heat loads and providing for healthy environments.

20 What opportunities are there to improve or streamline existing policies aimed at empowering consumers to undertake energy performance improvements in their homes?

- Now that an energy budget has been added to the NCC for residential buildings, the stringency of this can be easily increased over time. In alignment with the agreed target for the Trajectory for Low Energy Homes, the next phase of building regulation reform should be focused on the decarbonisation of homes, and it is recommended that this be considered as soon as NCC 2025.
- The Institute recommends appropriately resourcing regulation and policy departments. One challenge in terms of streamlining and changing regulation and policy is the lack of resources available to groups such as the Australian Building Codes Board (ABCB) and the NatHERS Administrator. Both organisations were overstretched in order to deliver the recent changes around 7 stars and the energy budget which resulted in the changes being delayed by 6 months with then an additional 12 month transition period which means another 18 months of lost opportunity for reducing emissions. If targets for reductions are to be set, then resources need to be provided to ensure that these organisations have the capability to deliver changes in a timely manner but also to be adaptive to pivoting quickly if it is found that proposal need to evolve as they are developed. The ABCB has a 3 year cycle to make changes and it takes most of those three years to develop those changes as it is a complex process. However, it limits what can be changed.
- With the recent changes to the NCC, industry groups lobbied hard for delays and a transition period to allow industry to adapt. As the NCC develops these policies over a 3 year period and as industry is engaged in that process, industry has plenty of time to prepare for the proposed changes so all industry groups need to be engaged with and brought along on the journey. It is not much good setting targets for 2030 if we cannot implement the next round significant changes to the residential energy efficiency provisions of NCC until mid 2029.
- Incentivise and subsidise upgrading all existing properties to smart meters. Create

incentives for monitoring and recording your house's individual energy performance to encourage behavioural change. Assist with the creation of online tools and calculators to demonstrate the cost of upgrades and pay-back periods for individuals.

- Increase rebates / STC payback for appliance upgrades.
- New policies that encourage energy generators and retailers to provide demand management incentives for customers.
- Mandating energy performance disclosure for homes at the point of sale or rent is critical. Ensuring that the system is a reliable measure of thermal performance is key, any system that allows for high scores based on large photovoltaic systems will drive perverse outcomes where people buy the largest, cheapest (i.e. poor quality) system to increase their rating just before selling. Provide more support the to National Scorecard project so it provides a consistent creditable basis for such a program
- Support CSIRO work using behavioural physiology to influence consumer behaviour, including the Renovate or Rebuild TV program.
- Engaging younger audiences with gaming approaches to engaging with and managing household energy use.
- More streamlined and better targeted advertising of all the existing schemes available at Federal, State and local level. Potentially developing one central website where it is all laid out back by regular promotional programs

21 What are key financial and non-financial barriers to the uptake of energy performance improvement opportunities? How can these barriers be overcome?

- Housing and rent affordability directly impact the capacity for individuals to take the opportunity of energy performance improvement programs. The introduction of the National Housing Supply and Affordability Council Bill is a positive step towards establishing an independent advisory body to advise government on matters relating to housing supply and affordability. The Institute recommends this body accelerate review of barriers and impacts towards update of these opportunities. For example, reviewing the potential impact of rent affordability of highly energy efficient homes versus low performing homes.
- One financial barrier is the perceived long 'payback' periods for capital investment of energy performance upgrades. This can be overcome with grants or no/low interest loans for building performance upgrades. One option is to use models for energy retailers to finance improvements and receive the emission reduction benefits over time.
- Energy efficiency performance contracts is one instrument that would be effective for commercial buildings and for apartment or mixed use buildings where there is no direct cost to the owner or body corporate but savings do eventuate.
- Insulation and glazing are expensive and can be difficult and especially costly to

retrofit, with long payback periods. Heating/cooling upgrades, solar installations, lighting upgrades and hot water replacements are all simpler and often cheaper, but they are band-aid fixes to inefficient built fabric. This could potentially be overcome by innovative financing models – e.g. by government or private industry funding fabric upgrades upfront and recouping the cost through energy levies over time. Such schemes exist but need better promotion and more incentives - https://www.environment.nsw.gov.au/business/upgrade-agreements.htm .

- Lack of a retrofit industry is a non-financial barrier as the general dearth of available information for the 'average' homeowner places significant time hurdles in front of those wishing to appropriately retrofit their homes for the changing climate. Funding large scale retrofit programs to address the systemic issues within the Australian housing stock (initially targeted at social housing) would allow the solutions, methods and products necessary to be developed and refined. This can be further addressed by:

a. There needs to be investment in supporting research and training for retrofit construction
b. Simple community education should focus on:
i. Airtightness and ventilation for health, comfort and energy efficiency
ii. Passive design principles, including orientation and cross-ventilation
iii. Insulation and the effects of gaps/breaks
iv. The impact of size and volume on energy demand
c. Homeowners need to see cost payback periods to make meaningful decisions about investing financially in energy performance improvements to their homes
d. Financial barriers occur due to a lack of local manufacturing driven partly by a lack of demands due to poor standards. Providing certainty to the market that energy efficient construction is the new minimum would aid in resolving this.
e. A lack of skilled labour currently means that delivering energy efficient homes is relatively expensive; improving the TAFE and apprenticeship system would help. Increasing minimum construction standards would help by lifting the bar for all, increasing the pool of available workers who are able to deliver the quality construction we need.

- With any proposed initiatives to reduce such barriers, care needs to be taken so that good energy efficiency design decisions (e.g. light coloured low pitched roofing) do not introduce significant risks around moisture, condensation, mould and rot. The CSIRO estimates 40% of Australian homes have mould present. This is critically important because increasing building insulation, air tightness, and key design decisions like light coloured roofs will further increase the risk of mould and rot if not properly managed. To overcome this barrier, the requirements around condensation and mould within the NCC need to be more stringent and apply to a broader range of climate zones. A lot of work is being done in this area by the ABCB and NatHERS but it is not happening fast enough to

reduce the risk of this problem

- There is a need to develop a whole new 'Home Energy Improvement' industry to provide coordinated services to households and landlords. We are only starting to build knowledge and skills in the area and all levels of government should be supporting the development of new skills and jobs it can create. Many of these new jobs are semi-skilled, can be trained for quickly and can assist in raising female participation in the building industry.
- An ambitious strategy for energy efficiency alone in Australia's buildings could create 120,000 job years of employment - https://www.eec.org.au/policyadvocacy/projects/projects-overview#/energy-efficiency-employment-in-australia
- Lack of knowledge and information – this barrier can be overcome by a nationally consistent rating system for all homes with mandatory disclosure upon sale or lease. Extract from ASBEC framework paper below outlining information needs and cost bands for segments of the residential market - https://www.asbec.asn.au/research-items/residential-ratings/

22 How can demand management and electrification support lowering energy bills and emissions?

- Continue an accelerated trajectory in improving the energy efficiency of building fabric and equipment requirements for all residential buildings in the National Construction Code. The recent NCC changes of 7 stars and adding an energy budget will help to lower energy bills and emissions in the long term.
- Demand management through thermal performance could assist with lowering bills and emissions by allowing residents to mostly heat and cool their buildings during daylight hours, mostly using electricity generated on their roofs. High-performing homes will retain heat (or coolth) for many hours.
- Electrification including on-site renewable electricity production, alongside community based demand (smaller clusters of homes could trade energy and utilise shared battery storage).
- Develop discounted electricity supply options for households willing to undertake peak load supply lopping – effectively driving the value of fabric improvements and houses able to buffer out heat extremes
- Consider additional infrastructure to support the delivery of above, such as:

i. Mandatory energy management apps with all PV system installations

ii. Mandatory smart meters, with education tools for all households in self regulation of demand management

23 How does poor energy performance impact on disadvantaged

communities?

- Disadvantaged communities often have a limited resource pool while attracting low levels of outside investment. These two conditions impose developmental constraints on these communities while limiting social mobility. The net effect of poor access to energy efficiency upgrades combined with rising energy prices is a widening of the social and economic divide.

i. While upfront capital expenditure can be slightly lower if a home is built or renovated to a poor energy performance level, the ongoing operational cost to maintain a comfortable indoor temperature of these poorly built homes is significantly higher over a longer time period.

ii. The unstable nature of the energy market also disproportionately affects disadvantaged communities in energy inefficient homes, with increasing energy costs requiring a larger % of income to pay.

iii. This problem is compounded by our increasingly unstable climate, with more extreme and longer heat waves and wet/cold periods needing more energy to run heating, cooling and dehumidification appliances.

iv. Disadvantaged communities also are often 'priced out' of coastal areas, where climate can be more stable, and naturally cooler in peak heat times - again increasing the energy demand to create a stable interior environment.

v. Disadvantaged people are also more likely to spend longer periods at home, especially those with physical disabilities which further disadvantages them through both acerbating healthy conditions (often amplified through mould, cold, or overheating depending on location) while also placing increased financial burdens they attempt to heat or cool an inappropriately constructed (and possibly designed) home.

24 What are the opportunities to improve the energy performance of residential buildings for low-income households?

- The Institute recommends working directly with the new National Housing Supply and Affordability Council to ensure all new affordable housing demonstrates best practice principles in energy efficiency and develops opportunities to increase the uptake of energy performance improvement programs by low-income households. This may include:

i. Undertaking audits of existing social housing to ascertain building fabric, passive design and equipment performance.

ii. Providing community storage battery and PV for all social housing projects.

iii. Undertaking audit of energy usage of low income households to create bespoke programs customised to user demographics.

iv. Education programs about energy budgets, demand management, etc.

25 What are the financial and non-financial barriers to uptake of energy efficiency upgrades for low-income households, and what can be done to overcome them?

- In addition to the below observations, the Institute supports the recommendations of the ACOSS joint submission.

i. Financially it represents a cost over and above necessity and would unlikely feature high on the household list of priorities which create a lack of capital to undertake energy efficiency retrofits or to purchase more efficient equipment creating a disconnect between upfront costs and long term savings when cashflow and financing are limited. Energy efficiency upgrades that are guaranteed to provide a favourable return on investment could potentially be made available to low-income households under a special finance scheme with repayments calibrated around investment returns i.e., regular repayments might be equal to half of the energy savings over the same period with repayments made in tandem with your power bill. Tasmania has the 'Energy Saver Loan Scheme' which provided zero interest loans for energy efficient improvements. This could be a useful model but it is not clear what the uptake has been. It could be useful to assess the success of this program and understand it's successes and failures further.

ii. Low income households are often renting and have no incentive to make improvements

26 What actions should be prioritised to assist low-income households to improve energy efficiency in their homes?

- Build more energy efficient net zero social housing
- Financial incentives and options such as the Tasmanian 'Energy Saver Loan Scheme' or tax deductions for retrofits for home owners on limited incomes. Any retrofits should aim to:

i. Improve insulation levels to ceilings, walls, floors

ii. Ensure all gas appliances (particularly hot water systems) are replaced with efficient electric appliances

iii. Ensure / incentivise heat-pump heating and cooling is installed where possible.

iv. Educate on how inefficient and expensive to run 'cheap' heating and cooling appliances are – such as bar heaters or what the most efficient options are – such as ceramic panel heaters.

v. Replacement of single glazing with thermally broken double glazing.

27 What delivery mechanisms would be most effective to provide targeted support?

- The Institute supports the recommendations of the ACOSS joint submission.

28 What are the key opportunities to improve energy performance of residential buildings for renters?

- Introduction of Residential Premises minimum energy efficiency standards for rental properties. A report by Better Renting (Dec 2022) estimates that there are 700 000 homes in NSW alone with poor energy efficiency and improving the efficiency of these homes could provide $1.199 billion in benefits (or $1683 per household). Australia's high proportion of 'mum and dad' landlords is a global anomaly, which requires policy intervention if a non-professional ownership class are to manage the rental market in a professional manner.
- Education programs such as Renew's Sustainable Renter's Week - https://events.humanitix.com/sustainable-renters-week-getting-your-landlord-on-board?mc_cid=2b818aae7a&mc_eid=932c244ae4
- Financial incentives such as tax deductions for landlords of households to carry out energy audits and retrofits and to perform upgrades to the thermal envelope of properties.
- Introduction of mandatory disclosure for all rental properties so that renters can make choices between properties. The scheme needs to be robust so that ratings are accurate and consistent and it is essential that the process sis embraced by the whole community. This will need significant education programs to achieve that.
- Governments at all levels have the opportunity to demonstrate best practice by retrofitting all social housing, public and community buildings. The investment will have multiple benefits from immediate benefits to inhabitants, training of workforce and extending life cycles of their assets.

29 What options are available to overcome the split incentive for renters and landlords?

- The Institute recommends working with the National Housing Supply and Affordability Council to benchmark and review home-ownership models, including rent-to-purchase schemes.
- Encourage more mortgage lenders to provide lower interest rates for more efficient homes (new or renovated)
- Develop a scheme where renters can apply to make energy efficiency upgrades which are then sold back to landlords after a given period with depreciation applied. This would need to be part of a long term lease agreement, with fair resolution for both parties in the event of early termination.
- Energy bill reimbursements to tenants living in properties with poor thermal performance or buildings that haven't had thermal performance upgraded in the last 10-15 years.

30 What options are available to support public and community housing tenants?

- As noted, the Institute recommends Governments invest in industry and demonstrate best practice by prioritising upgrades of all public and community housing tenants, with an aim of making all social housing operate at net zero.
- Upgrading the existing housing stock can also be done without major displacement of the tenants. The currently employed model of complete knockdown-rebuilds for community housing estates fails to consider the significant impact displacement of the tenants has for these disadvantaged communities. Energy efficiency and thermal comfort upgrades can be done to the existing housing stock without major displacement, which also has the added benefit of preserving the embodied carbon of the materials.
- Benchmark rating and improvement identification using the National Scorecard system paid for by the responsible government agency

31 How can the energy performance of rental homes be made more transparent to prospective tenants?

- Introduce 'mandatory disclosure' for rental properties. The scheme needs to be robust so that ratings are accurate and consistent. Significant education programs are required to ensure that the process be accepted by the whole community. This should include all dwellings including public and community housing. Every renter, purchaser or tenant should know what it will cost to keep a dwelling comfortable. More support for National Scorecard scheme to be the underpinning of this.

32 How can governments and private sector support renters to improve energy performance?

All as outlined above:

- Legislate minimum standards for rental properties.
- Introduce and support mandatory disclosure of energy efficiency
- Introduce minimum residential premises energy efficiency standards.
- Build more energy efficient net zero social housing - not only will this provide housing for some but will help to relive the pressure on the rental market creating a more competitive market for renters where if they are properly educated will opt to choose more energy efficient rental options which will then put pressure onto landlords to improve their properties. It will also raise overall expectations of how housing should perform.
- Provide an enabling environment and inducements for community energy groups that provide an opportunity for renters to invest in renewable energy projects such as Haystacks Solar Gardens - https://haystacks.solargarden.org.au/

- In most cases, energy performance should be the responsibility of the landlord. Governments could better incentivise or mandate landlord investment, or introduce mandatory disclosure to ensure transparency.
- Increase competitiveness in the rental market, this would encourage landlords to make energy efficiency upgrades to attract tenants.

33 How can governments support better energy performance in apartments and similar dwellings?

- Ensure consistent and high energy-efficient standards are adopted across all jurisdictions for apartments within the NCC. Currently, development work on the new energy efficient requirements for NCC 2022 drags behind that for single housing and is not yet complete. Accelerate the trajectory of NCC to achieve 10 star energy efficiency sooner.
- Consider aligning NCC Class 2 construction with classes 3-9 would force designers and contractors to consider complex technical detailing to improve energy performance and reduce humidity issues and condensation.
- Mandate in all States that Development Applications are assessed with an energy rating system and set benchmarks. For example, in NSW for Class 2 buildings a BASIX assessment is required with a Development Application yet in QLD there is no energy rating system required until the Building Approval phase. Therefore the energy performance of the building could be seen as an afterthought rather than part of the original design thinking
- Provide tax incentives or low interest loans for body corporates to undertake energy retrofits of the common areas of existing and old apartment buildings
- Facilitate an environment that establishes an energy performance contract industry that can work on existing apartment buildings. This is where companies provide energy retrofits for existing buildings on the basis that they are paid from the initial energy savings made.
- Provide an enabling environment and inducements for community energy groups that provide an opportunity for renters to invest in renewable energy projects such as Haystacks Solar Gardens - https://haystacks.solargarden.org.au/
- Consider transport energy; apartment owners and bodies corporate need support for the implementation and installation of electric vehicle charging infrastructure, which is currently hampered by uncertainty with respect to fire, insurance, and cost mechanisms. With new NCC EV requirements, there is a risk of existing apartment developments falling significantly behind new buildings.
- Provide more information and education programs for apartment owners and occupiers on what to do with your apartment, and how to reduce the common area energy expenditure. Support and expand existing schemes that are being run by local

government and other providers such as City of Sydney's Smart Green Apartments program - https://www.cityofsydney.nsw.gov.au/environmental-support-funding/smart-green-apartments

34 How are communities in different geographic locations impacted by poor energy performance and what needs to be done to ensure access to improvements?

- Communities in regional and remote location can be exposed to more extreme climates and need for resilience against extreme weather events.
- Such areas encounter a higher cost of construction due to transport costs and labour shortages which can result often in poorer building quality
- Often regional communities are exposed to poor energy security due to the high incidence of blackouts especially at the end of grid networks. Some communities are already addressing this by creating their own community energy groups - https://aipcollective.org.au/business-innovation/tyalgum-energy-project/ and https://www.facebook.com/tyalgumenergyproject/ . Governments can provide an enabling environment, support and inducements for such community energy groups
- Governments can support and encourage local regional areas to develop plans to become net zero communities as has happened with Hepburn Shire in Victoria - https://hepburnznet.org.au/
- Solar, wind hydro and battery technologies and costs are making de-centralised, community owned, renewable power systems viable. Assistance is needed with the initial capital cost
- Specifically with regard to First Nations Australians, it is important that homes are designed and delivered with appropriate cultural input, including genuine community engagement on-country. There is a history of well-intentioned but culturally unsuitable housing provisions. The most effective way to minimise energy use in these contexts is to provide dwellings that support the ways in which First Nations communities occupy indoor and outdoor space.
- It is also noted that health and education are priority concerns for First Nations Australians, and both have well-established inter-relationships with housing quality

35 What are the key opportunities to ensure the benefits of improved energy performance are available to First Nations Australians, and Australians located in remote communities?

- First and foremost - engage with the local community to ensure genuine partnership in the process with culturally appropriate outcomes.
- The Institute recommends Governments invest in industry and demonstrate best

practice by prioritising upgrades of all public and community remote housing projects, with an aim of making all housing operate at net zero.

- Development of local distributed renewable energy grids owned by the local community

36 What are the key opportunities to improve the energy performance of new and existing commercial buildings and operations?

- Review planning frameworks and building regulations to allow for the adaptability of commercial buildings and thus extend their life cycles.
- There is a need to focus on existing commercial buildings; these make up the vast majority of commercial floor area needed in the coming decades. Refer to City of Melbourne Zero Carbon Buildings strategy; green leases etc.
- Similar initiatives to upgrading of building fabric and equipment, mandatory disclosure and education campaigns recommended for residential buildings, could be applied to commercial buildings.

37 What are the most cost-effective private interventions businesses, including small businesses, can make to improve the energy performance of their buildings and operations?

Not answered

38 What are the barriers to investment in better energy efficiency for commercial businesses?

Not answered

39 How can government further empower and assist businesses to realise savings through energy performance measures?

Not answered

40 How can government support businesses to better utilise digitalisation to improve energy performance?

Not answered

41 What are the most cost-effective interventions industry can make to improve the energy efficiency of their new and existing operations?

Not answered

42 What are the potential financial and non-financial barriers to investment in better energy efficiency for industry?

Not answered

43 What can be done in addition to existing measures to reduce these barriers to investment?

Not answered

44 How can electrification and demand management support Australian businesses to be competitive and reduce emissions?

Not answered

45 What support is needed for Australian manufacturing or other supply focused businesses to improve energy performance?

Not answered

46 What are the most critical supply issues hindering energy efficiency action?

- Investment and availability of energy-efficient, locally (or nationally manufactured) equipment/technology.
- Local manufacturing of building materials, namely those relating to energy efficiency would reduce costs and support the growth of energy efficiency in residential construction while reducing transport energy. Currently very few energy-efficient building products are made locally or even nationally.
- Relative high cost of locally made materials and equipment.
- Lack of skilled workers

47 What is needed in the finance sector to help accelerate the uptake of energy performance investments?

- A nationally consistent mandatory disclosure system for purchasers and renters, will ensure consumer driven demand for higher energy efficient assets.
- Investment and incentivisation of uptake of energy efficient technology, building systems and building materials, including prefabrication.

- Across all jurisdictions, consistent policy of subsidisation of highly energy-efficient developments and the de-subsidisation of low performing developments (particularly those with broader urban sprawl, demolition and vegetative clearing impacts).

48 Have you removed any identifying information from your submission?

Not answered

49 Upload 1

Not answered

50 Upload 2

Not answered

51 Supporting file 1

Not answered

52 Supporting file 2

Not answered