

3 February, 2023

## RESPONSE:

### **National Energy Performance Strategy Consultation Paper**

Nexa Advisory welcomes the opportunity to share our views and insights on the proposed goals, objectives and actions for the National Energy Performance Strategy (NEPS).

We congratulate the Federal Government on its leadership in this important area of energy performance. In particular, this consultation paper from the Minister for Climate Change, Energy, the Environment and Water on the necessary steps to develop a NEPS, and the government's recent actions to increase the reliability of the energy system and reduce the cost to consumers through the Powering Australia and Rewiring the Nation initiatives.

We also recognise the government is working towards several key energy supply-targeted actions, including establishing the Powering the Regions Fund to support innovation in regional industries, more funding to support the New Energy Apprenticeship and New Energy Skills program, and establishment of the National Reconstruction Fund.

## **Context**

Clean energy transition is critical to meeting Australia's climate targets, energy security and supply stability, and controlling and abating cost of living pressures on Australians.

Australia is committed to reaching net zero emissions by 2050. Failure to improve support and regulation of energy efficiency measures, along with a nationally coordinated rollout of Distributed Energy Resources (DER), will mean that more costly measures will be needed to meet the climate goals. If Australia continues to delay climate action, the subsequent compressed transition to clean energy, coupled with the imminent retirement of fossil fuel generation and industry, will create an economic shock<sup>1</sup>.

A NEPS is a key step in ensuring successful energy transition. It should set targets and provide mechanisms to achieve them, including proactive engagement with consumers, and measures to ensure no one is left behind.

Reframing the mindset from 'energy efficiency' to 'energy performance' is important. It highlights the breadth of what needs to be done, and thus the holistic, coordinated, whole of government response required. Ministries responsible for energy, housing, industry, transport and finance, as well as state and local governments, must be unified in their approach.

Policy design for energy performance will also have to overcome market and institutional barriers and account for behavioural consequences. However, in this, Australia has the opportunity to learn from the experience of policy development and implementation overseas.

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<sup>1</sup> [Cost of Delay](#)

It is also important to note that, while energy performance measures have a significant role to play in reducing customer bills and carbon emissions, the complexities of the new energy system should not compromise the growth of new models of decentralised energy generation. Distributed Energy Resources (DER) are the main driver of the net zero energy transition.<sup>2</sup>

In concert, solar photovoltaics (PV) and energy efficiency measures have an immediate impact on reducing electricity bills and the carbon footprint of any building.

## Key Points & Recommended Policy Directions

In our submission, we provide some insights into, and advice about, potential policies and targets to complement the ideas presented in the National Energy Performance Strategy Consultation Paper. These are drawn from experience in leading global energy markets.

The actions we propose are measurable, achievable, and provide investment certainty and leadership on the demand side of the market, to increase energy efficiency towards net zero emissions in Australia.

Our points and recommendations are grouped under the following themes. Detailed recommendations appear at the end of each section of this submission:

- **Distributed Energy Resources (DER):** DER are the main driver of the net zero energy transition. A focus on equitable consumer access to rooftop solar within the NEPS is required, and could be facilitated by a national policy, and coordination of DER across the National Electricity Market.

*Nexa Advisory urges the government to establish a commission mandated to ensure customer centricity and universal access, and separately a division within DCCEEW to manage and coordinate national policies and reforms for DER that are focused on removing barriers and incumbency bias.*

- **Governance:** Achieving the clean energy transition at all, let alone in a timely way, will require consumers to take significant action. However, current governance framework and work programs have not been consumer-centric. In addition, the current regulatory approaches have not engendered the trust of consumers.

*The government must ensure that national policies and governance structures enshrine the new energy future of consumers, build trust and engagement, demonstrate benefits, and unlock the innovative business models that are necessary to achieve energy performance.*

- **Targets:** In concert, DER, in the form of solar PV and energy efficiency measures have an immediate impact on reducing electricity bills, and our individual and collective carbon emissions. Progress on efficiency would also lower the cost of the energy transition.

*Nexa Advisory supports the development of an energy performance target to ensure clarity of direction, and to strengthen accountability.*

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<sup>2</sup> [Distributed energy resources for net zero: An asset or a hassle to the electricity grid?](#)

*A national target for DER would drive consumer engagement and uptake and provide certainty on the supply side. The target would need to be supported by clear principles, policies, incentives, and authorised programs, taking lessons from historical mistakes in similar endeavours, such as ‘pink batts’ during the GFC.*

- **Residential:** The uptake of any newly introduced government mechanisms will depend on consumers, thus improving the perception of and funding for residential energy efficiency improvements should be a priority.

Households need to be supported by programs to help retrofit existing housing stock, as well as data sharing so they can monitor energy consumption in real-time.

*The government must ensure that consumers are adequately consulted, to build consumer engagement with the need for energy performance and clean energy. The required measures should be part of the National Energy Performance Strategy. Australia should look to experience from overseas for direction on measures.*

- **Commercial:** Experience overseas suggests that there is a strong correlation between the strength of energy efficiency regulations and support for investment. Key barriers to investment for commercial businesses include<sup>3</sup>:
  - Lack of targeted policies and legislation
  - Difficulties obtaining commercial loans
  - Low awareness of the multiple benefits of energy efficiency actions.

*Improving the effectiveness of existing energy efficiency regulations should be the primary focus, alongside the development and implementation of supporting legislation, standards, policies and programs.*

*There are opportunities for existing policy tools to be expanded to support energy efficiency, such as the National Australian Built Environment Rating System and the Tenancy Lighting Assessment.*

- **Industrial:** At present, neither government policy nor the market is driving the development and adoption of energy efficient technology by industry.

*Government has a key role in accelerating innovation of energy efficiency technologies through: federal funding for research and development; growing demand for innovation through procurement or through the market; stimulating competition and encouraging entry into the market.*

*Additional market reform is required for commercial and industrial businesses to participate in demand-side management in the wholesale market.*

- **Supply Chains:** As the clean energy transition, and the penetration of DER, ramps up, the weakest link in the ‘energy supply chain’ will be the reliance on imports. As with the global ‘vaccine race’, this

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<sup>3</sup> [OVERCOMING BARRIERS TO INVESTING IN ENERGY EFFICIENCY](#)

will leave us vulnerable to production shortages, international competition for supply, trade disruptions, and natural disasters.

The Federal Government's National Reconstruction Fund is welcomed, but further policies will be still needed in Australia to strengthen energy supply chains.

*The government can encourage onshore value adding by investing in Australian technological innovations and manufacturing. This could be through tax reduction and exemption policies, increased subsidies for energy efficient technology innovation and manufacturing, as well as support and finance for clean energy projects.*

If you wish to discuss our submission in more detail, please contact me on [stephaniebashir@nexaadvisory.com.au](mailto:stephaniebashir@nexaadvisory.com.au).

Yours Sincerely,

Stephanie Bashir  
**CEO and Principal**  
**Nexa Advisory**

## Distributed Energy Resources (DER)

Nexa Advisory welcomes the government's consideration of support for energy performance measures in residential and commercial buildings. However, we urge the government to include a focus on consumer access to rooftop solar within the National Energy Performance Strategy. This could be facilitated by a national policy and coordination of DER across the NEM.

Australia needs a solution that has a direct impact not only on electricity prices, but on customer electricity bills. Installing solar PV directly reduces energy costs, while reducing electricity prices provides more of a trickle-down effect in which the benefits are not immediately realised.

### **Equity of access**

While Australia leads in the uptake of solar PV, there remains significant barriers to further solar adoption, specifically for low-income households, apartment dwellers and renters. The groups that are being left behind are the highest users of energy due to poor housing quality and structural deficiencies, and subsequently receive the largest energy bills which are unaffordable for people with low income<sup>4</sup>.

The energy transition is increasing the gap between high and low-income households as high-income households are more readily able to obtain financing for renewable energy<sup>5</sup>. By contrast, low-income households are less likely to access renewable energy because they are held back by cost, complexity, and access. Most of the solar PV being installed and subsidies being accessed in Australia are in owner-occupier homes<sup>6</sup>. Increasing the gap between high and low-income households will exacerbate energy insecurity and will further perpetuate the inability of low-income households to afford sufficient energy, let alone clean energy.

For Australia to increase household solar PV adoption, there needs to be an increased focus on those who are currently excluded from existing programs and subsidies targeting solar PV. Access to rooftop solar PV should not be limited to ownership of the roof, and must consider the ability to access the benefits of solar energy through solar sharing, peer-to-peer networks, solar grids, etc.

For instance, Allume Energy's SolShare creates private infrastructure which distributes solar energy in multi-dwelling buildings<sup>7</sup>. Solar panels are placed on the common roof and power is evenly distributed to each connected unit in the building. Innovative solutions like Allume Energy's SolShare should be supported and replicated as a simple and affordable solution to increase solar PV uptake across Australia.

Several states including Victoria, NSW and South Australia have designed initiatives that target solar PV for low-income renters through solar gardens and solar PV for community housing properties<sup>8</sup>. However, a nationally inclusive policy that addresses the issue of equitable access to solar PV is lacking.

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<sup>4</sup> [Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature](#)

<sup>5</sup> [Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature](#)

<sup>6</sup> [SA Government Key to Unlocking Solar on Rental Properties: New Report](#)

<sup>7</sup> [Allume Energy SolShare.](#)

<sup>8</sup> [Australian household adoption of solar photovoltaics: A comparative study of hardship and non-hardship customers](#)

The Australia Institute conducted a state-wide survey of South Australian residents which found significant interest among renters and landlords to co-invest in the installation of solar PV<sup>9</sup>. They recommended a combination of interest-free loans, remuneration for solar installers on rental properties and a ‘finder’s fee’ for property managers who facilitate solar installations on rental properties. They also recommend legislating the right for renters to have all reasonable solar requests met by landlords so long as the renter is prepared to pay a slight increase in rent to account for the solar installation. The Australia Institute suggests their recommendations could be added to successful schemes and pilot projects such as City of Adelaide Solar Savers Program<sup>10</sup>.

Victoria has also made significant strides with the Solar Savers program where landlords are able to access financial support for solar on their rental properties<sup>11</sup>. NSW has also introduced the Solar for Low Income Households Offer which helps low-income households access affordable solar energy<sup>12</sup>. There is an opportunity here for the Federal Government to introduce policies on a national scale that complement the work being done in some states to target access to solar PV for low income households and renters.

In the UK, all privately rented properties must have an Energy Performance Certificate (EPC) with clear targets and grades. There are concerns that the costs of retrofitting rental properties will drive landlords out of the market, so care is needed to ensure that building performance requirements are underpinned by a mechanism to support or facilitate landlord investments in performance improvements.

The Federal Government has an opportunity within the proposed National Energy Performance Strategy to review all existing policies and subsidies for solar PV, identify where they may overlook certain groups and develop a target for solar PV accessibility in Australia. Without a national strategy to guide the way forward, some groups will be left behind.

### **Managing market incumbents**

DER is direct competition for incumbents in the electricity market, such as gentailers, retailers, AEMO and Distribution Network Service Providers, as it gives consumers agency over their energy use and costs. Ironically, all work being done to progress DER is being developed by these incumbents which have vested financial interests. Unfortunately, this means DER customer outcomes are being shaped by incumbents, and incumbents will be the ones realising the benefits of DER, not the consumers. For instance, the Australian Renewable Energy Agency (ARENA) DER project funding is being given to incumbents to run DER trials that do not result in policy or regulatory changes that benefit consumers (see Figure 1).

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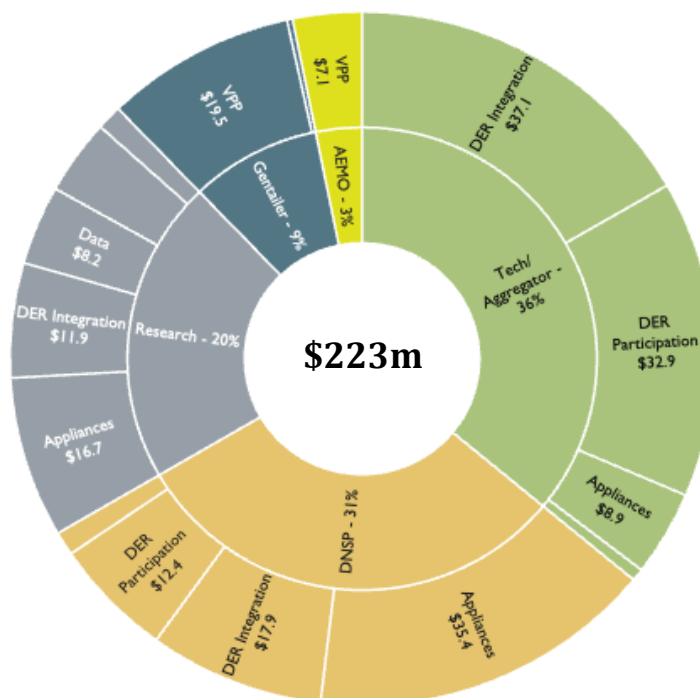
<sup>9</sup> [SA Government Key to Unlocking Solar on Rental Properties: New Report](#)

<sup>10</sup> [City of Adelaide Solar Savers Program Success Story](#)

<sup>11</sup> [Solar Savers](#)

<sup>12</sup> [Solar for low income households](#)

Figure 1: ARENA funded DER projects by lead organisation - Total Project Cost (\$m)



Source 1: Nexa Advisory, NSW Energy Summit

Policy guidance is needed from the Federal Government to ensure that customer interests are met and protected in the rollout of DER. Australia can only reach net zero and renewable generation goals by including DER as large-scale renewable generation alone is not enough. In 2021, Australians installed over 3 GW of rooftop solar<sup>13</sup>. In 2022, 2.9 GW of all types of large-scale renewables (wind, solar PV and batteries) were connected<sup>14</sup>, demonstrating the key role DER has in reaching national targets.

**Key recommendations**

1. Government to establish an independent commission specifically mandated with ensuring that customers are the focus of energy policies and ensuring that customers can see the benefits of their contribution to achieving policy goals.
2. Enshrine a DER mechanism managed by DCCEE - focused on coordinated implementation and accountability of delivering reforms that have direct consumer benefits. The mechanism would seek to identify barriers and reforms that are required to deliver on the DER national target and policy. This should prioritise removing incumbency bias to enable innovative and customer solutions to be developed.

<sup>13</sup> <https://www.cleanenergycouncil.org.au/resources/resources-hub/clean-energy-australia-report>

<sup>14</sup> [https://www.linkedin.com/posts/australian-energy-market-operator\\_yearinreview-activity-7020541676439957505-rZjq?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/australian-energy-market-operator_yearinreview-activity-7020541676439957505-rZjq?utm_source=share&utm_medium=member_desktop)

## Governance

Nexa Advisory welcomes the acknowledgement by the Federal Government that strengthening governance frameworks are required to ensure measures to improve energy performance meet the needs of the future energy market.

We believe that it is critically important for Australian states, territories and the Federal Government to interact across all sectors of the energy system to achieve net zero emissions. As such, we welcome the action the government has already taken to develop the National Energy Transformation Partnership (NETP), including its first action to work towards the addition of an environmental objective into the National Energy Objectives. Furthermore, we welcome the work underway as part of the Energy Security Board's Data Strategy and supports the collaborative approach the NETP is taking to develop this critical area of market reform.

However, it will be necessary for consumers to play a significant and active role in the energy transition and the current governance framework and current work programs have not been consumer-centric. Current regulatory approaches have not secured the trust of consumers. To effectively realise the opportunity for consumers to participate in the market, they and their agents need access to their own energy data and transparency to network information to underpin engagement and innovative solutions and business models.

It is also critical to recognise that there are some entities, such as the incumbent traditional utility networks and retailers in the energy market, that do not benefit from customers reducing their demand. Care is needed when identifying providers to deliver energy efficiency programs, as well as programs to empower customers with access to the energy and network data.

### Key Recommendations

1. Establish an Independent DER division within the Federal Department to lead the reforms needed to accelerate the take up of DER by all Australians through a coordinated national approach to ensure net zero targets are achieved.
2. Establish an independent Investors and Innovators Advisory Council to ensure that innovators, customer service providers and investors are consulted, so as to:
  - provide independent, expert perspectives on the cutting-edge regulatory, technological, and financial innovations occurring globally.
  - support ministers and the market bodies with the design of key policy and regulatory reforms on the supply and demand side.



## Targets

As highlighted within the consultation paper, several of Australia's top trading partners have well-established and ambitious targets that drive better energy performance and there is no reason why Australia cannot also develop an effective policy to unlock demand-side action.

Nexa Advisory supports the development of an energy efficiency target. Progress on efficiency would play a significant role in reducing emissions and lowering the cost of the energy transition.

As a first step to determine the level of energy efficiency targets and support energy performance action in the future, the government should set sectoral emissions budgets regularly, with supporting detailed plans to achieve emission reductions. This will provide greater certainty to individuals, businesses and industry, as well as investors, on the pathway to achieving net zero emissions. A minimum level of ambition should be set as keeping warming to less than two degrees, ideally to 1.5 degrees and based on scientific advice.

Sectoral planning aligned with carbon budgets can already be seen within the electricity sector through Australia Energy Market Operator's (AEMO) 2022 Integrated System Plan and could feed into a detailed national plan to unlock the benefits of energy performance.

The setting of sectoral emissions budgets, and supporting detailed plans, could be achieved through the NETP to ensure collaboration between the jurisdictions. Once the sectoral emission budgets are determined, the NETP could support an energy efficiency target through the development of an energy efficiency certificate scheme or energy efficiency scheme that builds upon the success of schemes across NSW, Victoria, South Australia and the ACT.

Furthermore, as a more direct and proactive approach, we propose the introduction of a national target for access to DER for all Australians with supporting policy. DER now forms a significant and increasing part of the energy generation mix and presents a significant opportunity to directly reduce consumer energy bills. Results from the use of standards to target energy efficiency can come with a lag period before we see any results as consumers begin to adopt energy efficiency measures. On the other hand, introducing a target and an associated policy on access to DER, specifically targeting rooftop solar PV, can bring direct, short to medium term results. It is important that such a policy targets hardship customers and renters, as they are most often the ones occupying 'glorified tents' – the most energy inefficient homes<sup>15</sup>.

While Australia has been a leader in rooftop solar PV due to previous policies and the establishment of a skilled industry, the sector risks lagging behind. 2022 saw a decline in rooftop solar PV installations and the annual installation rate risks falling behind ISP scenarios consistent with a safe climate and with the Federal Governments' target of 82% renewables by 2030. Australia has just recently lost its global

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<sup>15</sup> [Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature](#)

mantle of most solar PV capacity per capita in part because there are no new policies to ensure rooftop solar PV continues to be taken up by low-income households<sup>16</sup>.

Around 35% of Australians currently face barriers that prevent them from accessing rooftop solar on their homes. This includes about 2.4 million Australians households who rent (including the residents of around 440,000 social housing properties), 1.3 million Australians who live in apartments and one million Australians who are considered low-income homeowners. Currently, renters face the biggest barriers to accessing solar power for their homes as they are reliant on the landlord to not only make the decision to install a solar PV system, but also to bear most of the cost, which few landlords are currently willing to do. As a result, only around 2-3% of renters currently have access to rooftop solar – compared to 25% of all Australian households. Specific policies and incentives that support landlords to invest in rooftop solar PV are urgently needed.

Supporting the rollout of rooftop solar PV should not be delayed until the building under the roof is energy efficient. Solar PV can have an immediate impact on reducing electricity bills and this is still the case in an energy inefficient building. Retrofitting efficiency approaches to the building post solar PV installation will only increase the benefits of both the generation and building efficiency.

### **Key Recommendations**

1. Ministers to set a national energy performance target underpinned by sectoral emissions budgets and supporting detailed plans.
2. Introduction of a national target for DER that will drive the uptake and access to Solar PV for all. The target must be supported by targeted policies, principles, incentives, and authorised programs that guarantee tangible results for consumers.
3. Introduction of policies and incentives that support landlords to invest in rooftop solar are urgently needed.

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<sup>16</sup> [https://www.linkedin.com/posts/ketanjoshi1\\_top-installed-solar-and-wind-capacity-by-activity-7021919413146652672-YSID/?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/ketanjoshi1_top-installed-solar-and-wind-capacity-by-activity-7021919413146652672-YSID/?utm_source=share&utm_medium=member_desktop)

## Residential

### Retrofitting

Most of Australia’s housing stock is unfit for the current climate, let alone future changes in the climate<sup>17</sup>. It is predicted that 1 in 25 Australian homes will be uninsurable by 2030<sup>18</sup>. Many people are already experiencing negative impacts on their health and wellbeing with the increasingly damaging weather events in Australia. With extreme weather events only increasing with climate change, more and more people will find their current housing no longer liveable. Unfortunately, the most vulnerable to such conditions are low-income households, renters, people in remote regions and First Nations people<sup>19 20</sup>.

Australian homes are being left behind in the race to net zero, partially due to low energy efficiency standards. The Climate Council found Australian building efficiency standards lag far behind other leading countries<sup>21</sup>. Even while standards improve for newly built homes, existing homes will continue to expose their residents to high bills and health risks.

While the energy efficiency of Australian homes is a well-known issue, solving it has proved to be complex. Few consumers are knowledgeable in energy efficiency solutions and instead turn to experts, such as energy service providers, searching for advice that is accessible online and easy to understand<sup>22</sup>.

One way the Australian Government can support consumers in retrofitting their homes is through energy efficient retrofit programs. For example, under Spain’s recovery and resilience plan, it intends to invest EUR 3.4 billion in renovation actions through tax incentives and the creation of “one-stop” renovation offices<sup>23</sup>. Several countries have developed similar programs.

The International Energy Agency (IEA) investigated several options to scale up energy efficient household renovations and, based on the most successful actions from leading countries, they formed the following actions<sup>24</sup>:

- Utilise existing renovation offices as “one-stop-shops” to provide advice in selecting energy efficient measures, assist with permit and incentive applications, refer skilled professionals, and assist customers in accessing affordable financing options.
- Offer free audits for homes and buildings that result in the identification of efficiency measures and digital solutions that can realistically be implemented in the following six months.
- Focus on a set of key energy efficiency measures such as heat pumps, insulation, or heating controls to increase the scale of deployment.

The IEA found these specific measures are key to stimulating the market and the uptake of energy efficiency retrofits.

<sup>17</sup> [Majority of housing not suitable for current climate: calls for more flood-proof homes across Australia](#)

<sup>18</sup> [ONE IN 25 AUSTRALIAN HOMES UNINSURABLE BY 2030: CLIMATE COUNCIL LAUNCHES CUTTING EDGE DIGITAL CLIMATE-RISK MAP](#)

<sup>19</sup> [Climate change and low-income housing](#)

<sup>20</sup> [Aboriginal Population and Climate Change in Australia: Implications for Health and Adaptation Planning](#)

<sup>21</sup> [FROM GLORIFIED TENTS TO RENEWABLE POWERHOUSES: AUSTRALIA’S OPPORTUNITY FOR HOME ENERGY EFFICIENCY](#)

<sup>22</sup> [Accelerating energy efficiency: What governments can do now to deliver energy savings](#)

<sup>23</sup> [Accelerating energy efficiency: What governments can do now to deliver energy savings](#)

<sup>24</sup> [Accelerating energy efficiency: What governments can do now to deliver energy savings](#)

A well-known barrier to energy efficiency uptake is funding. Although spending on efficiency measures decreases financial strain on consumers and reduces dependence on energy imports, the up-front cost to consumers remains a major barrier. Italy has tackled this barrier with its Super Ecobonus- a tax credit of 110% for energy efficient renovations of residential buildings<sup>25</sup>. While the program was only launched in 2020, it has already produced more than EUR 20 billion in eligible investment and created thousands of jobs. There are several other residential energy efficiency financing examples from leading countries such as Ireland, Canada and the Netherlands. A funding option the government could explore to target low-income households is a loan package for homeowners below a defined income threshold to upgrade their home that they can pay off over time through their rates.

### **Consumer engagement**

One crucial area that has been overlooked in the Australian Government’s consultations and policies is the customer experience. The successful uptake of any new government mechanisms will depend on consumers, thus a focus on the perception of energy efficiency improvements should be a priority, as well as developing delivery pathways via trusted partners. Through strategies such as the National Energy Performance Strategy, the government must ensure consumers are adequately consulted to build a positive reputation and social licence for energy efficiency and clean energy among consumers.

The Australian Energy Regulator (AER) has made strides toward ensuring a more inclusive energy market in their recently completed strategy – *Towards energy equity - a strategy for an inclusive energy market*<sup>26</sup>. However, submissions on the draft strategy were once again dominated by energy providers, accounting for nearly double the submissions compared to consumer groups. As mentioned above, there remains an issue of incumbency bias and lack of consumer voice in discussions on consumer energy.

### **Data sharing and transparency**

Prior to releasing regulations in support of the National Energy Performance Strategy, the government must first ensure consumers have the tools they need to take control of their energy usage. Community participation in the grid and DER is essential to realise the benefits of energy efficiency measures and improving consumer acceptance of DER integration policies comes down to social license. The government and the energy industry must engage with households and businesses to build the support and trust needed to effectively manage privately-owned DER. Gaining and maintaining the social license needed to make DER effective requires customers to see the benefits of DER control beyond the costs imposed on them, and for policymakers and energy companies to establish trust with customers by ensuring that benefits are distributed in a fair way<sup>27</sup>.

Data sharing is also a critical piece to addressing energy efficiency and clean energy integration. While access to historic data is being addressed under the Consumer Data Right<sup>28</sup>, the government has still not investigated issues of access to customer data by authorised agents on behalf of customers to enable innovation and customer led services. Customers and/or their agents need access to their energy consumption data in real-time to understand their energy use in the moment. This data is already being collected by smart meters as part of grid operation systems that enforce regulations and ensure the

<sup>25</sup> [Accelerating energy efficiency: What governments can do now to deliver energy savings](#)

<sup>26</sup> [Towards energy equity - a strategy for an inclusive energy market](#)

<sup>27</sup> [Social Licence for Control of Distributed Energy Resources](#)

<sup>28</sup> [Consumer Data Right](#)

smooth operation of the grid<sup>29</sup>, but it is not easily or routinely accessible to customers. However, Nexa Advisory acknowledges that protecting data privacy and cybersecurity is key to the successful sharing of consumer data.

Customer access to their real-time energy use data can provide an instantaneous insight into energy use and the energy use of individual appliances, allowing customers to reduce their energy use as they use it. Without this real-time insight customers are dependent on the bill to indicate use, which is after the use has occurred and the money has been spent, offering little opportunity to manage usage.

The energy transition is shaping how the new energy market engages with its customers. In addition to affordability, customers are now also prioritising convenient, controllable, and personalised energy solutions, such as DER<sup>30</sup>. The best way for energy providers to compete is to focus on consumer needs, build consumer trust and fulfill their expectations.

### **Key recommendations**

1. Government to assess funding programs that target low-income households. This could be in a subsidy coupled by a form of tax credit, or loan package for homeowners below a defined income threshold to upgrade their home that they can pay off over time through their rates.
2. All energy performance programs including DER funded or co funded by government must be authorised programs with clear reporting and monitoring to ensure customer benefits and the principles of the programs are achieved.
3. To effectively realise the opportunity for consumers to participate in the market and energy performance programs, government must enforce energy retailers and electricity networks to provide consumers and their authorised agents with easy access to real-time energy data and electricity network capacity information to unlock innovative business models and to help consumers understand the benefits of their participation.

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<sup>29</sup> [Distributed energy resources for net zero: An asset or a hassle to the electricity grid?](#)

<sup>30</sup> [What does a customer-led energy transition mean for Australian energy?](#)

## Commercial

Around the world, there is a strong correlation between the strength of energy efficiency regulations and support for investments<sup>31</sup>. Improving the effectiveness of existing energy efficiency regulations should be the primary focus, while simultaneously developing and implementing supporting legislation, standards, policies and programs.

Identifying barriers to commercial investment in energy efficiency measures can help shape policy, financial and regulatory support. The following are some of the key barriers to investment in energy efficiency for commercial businesses identified by several leading countries<sup>32</sup>:

- Lack of targeted policies and legislation
- Difficulties obtaining commercial loans
- Low awareness of the multiple benefits of energy efficiency actions.

Tax incentives and low-interest loans have been identified as the most important contributors to increased energy efficiency project uptake<sup>33</sup>. These are followed by increased stringency of energy efficiency standards, training and awareness programs, targeted legislation, and de-risking investment through government support programs as well as improving access to commercial financing options.

### **Building standards and regulations**

Building Energy Efficiency Certificates (BEEC), including the National Australian Built Environment Rating System (NABERS) and the Tenancy Lighting Assessment (TLA), have been successful in shifting the behaviour of commercial building owners, operators and tenants to more energy efficient approaches. However, there is an opportunity for existing policy tools to be expanded to cover more ground.

Commercial buildings can increase their NABERS reading by increasing the efficiency of the building. NABERS is voluntary, with the exception of all new buildings over 2000 square metres requires a NABERS rating prior to selling or leasing commercial office space<sup>34</sup>. In addition, the Australian Government requires that all new government buildings achieve a 4.5 star NABERS energy rating<sup>35</sup>. Several local governments in Australia also require NABERS minimums for new large-scale developments.

While developing requirements for new buildings to adhere to specific NABERS energy ratings is critical, it shouldn't be the only focus. Most of the current building stock in Australia was built before any energy performance standards existed. In addition, most of the building stock that will be in use in 2050 (when Australia intends to reach net zero emissions) already exists today. There is an opportunity for governments to expand mandatory NABERS ratings to include existing commercial buildings.

### **Digitalisation**

There is also an opportunity to take advantage of digital tools to shape energy efficiency policy. In the past, gathering energy efficiency information from thousands of businesses and developing policies in response to that data was a challenging task. With digitalisation, the government can retrieve more accurate and timely information and develop clear policy pathways while allowing energy efficiency

<sup>31</sup> [OVERCOMING BARRIERS TO INVESTING IN ENERGY EFFICIENCY](#)

<sup>32</sup> [OVERCOMING BARRIERS TO INVESTING IN ENERGY EFFICIENCY](#)

<sup>33</sup> [OVERCOMING BARRIERS TO INVESTING IN ENERGY EFFICIENCY](#)

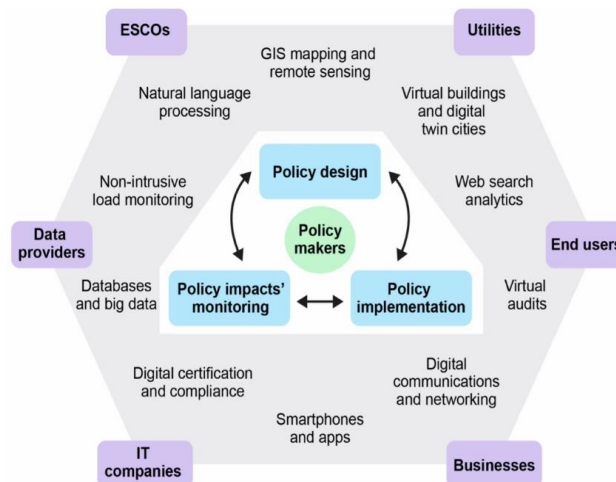
<sup>34</sup> [Ratings and BEECs FAQs](#)

<sup>35</sup> [Government Buildings](#)

markets to operate on a larger scale. The government can also closely monitor the effects of energy efficiency policies through consumer smartphone apps and online tools, and adjust policies as needed.

To increase the uptake of digital solutions, the government should explore ways of making them more affordable and inclusive. This relationship between digitalisation and government, consumers and other stakeholders is further represented in Figure 2.

Figure 2: Digital tools for energy efficiency policy ecosystem



Source 2: <https://www.iea.org/articles/better-energy-efficiency-policy-with-digital-tools>

Digitalisation will be key for energy providers in adapting to the new energy system. One of the largest challenges with DER is that it is decentralised and cannot be controlled by grid operators. However, digitalisation can be harnessed to address this challenge and turn it into an opportunity. Smart digital solutions allow consumers to monitor and control their energy resources. It also allows providers to partner with device and appliance manufacturers and financial service organisations, fast-tracking the potential for innovation and competitiveness.

Digitalisation can be harnessed through DER management systems (DERMS) and software solutions<sup>36</sup>. DERMS as a software-based platform can manage DER on an ongoing basis on both an individual and aggregate scale. DERMS can also be scaled to any level, from individual households to commercial buildings and communities. However, as mentioned the government must ensure that there are appropriate security and privacy systems in place to maintain the confidence of market participants.

### Key recommendations

1. Improving the effectiveness of existing energy efficiency regulations should be the primary focus, alongside the development and implementation of supporting legislation, standards, policies and programs.
2. Expand existing policy tools to support energy efficiency, such as the National Australian Built Environment Rating System and the Tenancy Lighting Assessment.

<sup>36</sup> [How electric utilities can leverage DERMS](#)



## Industrial

Investment in energy efficiency technology is not being made by all businesses, meaning there remain barriers to investment in energy efficiency improvements. The largest barriers to industrial energy efficiency actions are access to capital and lack of awareness of long-term capital savings<sup>37</sup>. Often energy efficiency does not align with a business' immediate priorities and therefore gets excluded and/or overlooked. Demonstrating how energy efficiency can be easily incorporated into existing system processes as well as regular energy auditing will help bring more awareness to businesses and highlight inefficiencies. This could be supported by targeted policies to increase uptake in the industrial sector.

Research has shown that preferential tax policies can encourage businesses to increase their investment in energy efficient technologies<sup>38</sup>. If the business produces green products or energy efficient solutions, they could enjoy reduced taxes or tax exemption. This also promotes green competitiveness among businesses.

A comparison of the cost of offsetting and pollution mitigation when compared to investing in energy efficiency measures quickly demonstrates that efficiency is the much cheaper option. However, this distinction is not always clear to industry. For businesses reluctant to immediately invest in energy efficiency technologies, energy management is a good starting point. Next, businesses may choose to focus on process-specific energy savings and concentrate on increasing energy efficiency of a particular energy-intensive process. Dividing the task of increasing efficiency into smaller, more digestible steps may relieve some of the financial and capacity pressures businesses face. Once businesses begin seeing the benefits of energy efficiency, they will be more inclined to explore more ambitious measures.

Industrial operations vary in many aspects, meaning a one-size-fits-all approach will not be effective. A comprehensive range of programs will need to be developed to reflect the uniqueness of many different industries. Beyond direct financial assistance, the government could offer knowledge-sharing and technical assistance programs that give little to no cost, tailored technical advice on energy efficiency technologies and link businesses with energy efficiency technology suppliers.

### Technologies

At present, market failures are impeding the development and adoption of energy efficient technologies and existing policies are not increasing demand at the rate we need. Government has a key role in accelerating innovation of energy efficiency technologies through:

- Effective federal funding that supports research and development
- Growing demand for innovation through procurement or through the market
- Stimulating competition and encouraging entry into the market.

Having an office, branch or government commission specifically directed towards a desired outcome can prove useful in streamlining and overseeing energy efficiency actions. For instance, in the US, the Industrial Efficiency and Decarbonisation Office is tasked solely with improving the efficiency of energy and materials as well as the productivity and competitiveness of manufacturers within the industrial sector<sup>39</sup>.

<sup>37</sup> [Internal and external barriers to energy efficiency: which role for policy interventions?](#)

<sup>38</sup> [Green Technology Innovation, Energy Consumption Structure and Sustainable Improvement of Enterprise Performance](#)

<sup>39</sup> [Office of Energy Efficiency & Renewable Energy](#)



The US industrial sector is further supported by the Better Plants program, which assists manufacturers and wastewater treatment agencies to set goals to reduce energy, water, waste and carbon within their operations and commit to reducing energy intensity by 25 per cent over 10 years across all US operations<sup>40</sup>. The aim of Better Plants is to increase industrial energy efficiency, resilience, economic competitiveness and reduce carbon intensity through energy efficiency mechanisms. In addition, specific pathways to reduce industrial emissions through innovation have been identified in the Industrial Decarbonisation Roadmap<sup>41</sup>.

### **Demand side management**

Demand side management (DSM) can prove useful as a means of influencing businesses to invest in energy efficient solutions to reduce overall demand. Australia currently lags behind most of Europe and North America when it comes to demand response programs<sup>42</sup>. DSM empowers customers to decide when and how they use electricity. DSM can enhance policies aimed at influencing the energy demand side such as energy auditing and bill credit or discount rates for reduced energy use.

In the past, policy, regulation, and competition have resulted in high electricity costs. Market reform and the subsequent decrease in electricity prices will allow commercial and industrial businesses through DSM to enter the wholesale market, in turn increasing competition, lowering costs for consumers, and making the energy system more efficient.

### **Key recommendations**

1. Government has a key role in accelerating innovation of energy performance technologies through federal funding for research and development; growing demand for innovation through procurement or through the market; stimulating competition and encouraging entry into the market.
2. Additional market reform is required for commercial and industrial businesses to participate in demand-side management in the wholesale electricity market.

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<sup>40</sup> [Better Plants](#)

<sup>41</sup> [DOE Industrial Decarbonization Roadmap](#)

<sup>42</sup> [Systematic Review of Demand-Side Management Strategies](#)

## Supply Chains

As the goal to shift to a net zero economy and the deployment of DER ramps up the demand for energy efficient technologies, large-scale changes will be required for supply chains to keep up. The weakest link in supply chains is often the reliance on imports, which leaves us vulnerable to production shortages, trade disruptions and natural disasters<sup>43</sup>. Therefore, future-proofing supply chains and prioritising domestic manufacturing should be a focus to protect businesses, consumers and the clean energy workforce from supply chain disruptions. While Nexa Advisory welcomes the government’s introduction of the National Reconstruction Fund<sup>44</sup>, further policies are still needed in Australia to strengthen energy supply chains.

Most state and territory government policies target increasing the demand for batteries and solar panels, especially residential demand<sup>45</sup>. While targeting demand for clean energy technologies is important, policies will be unsuccessful if that demand is unable to be met. The Federal Government has a key role to play in ensuring Australia has the trade partnerships and supply chains established to ensure domestic and international clean energy markets remain unhindered<sup>46</sup>. In addition, the government can encourage onshore value adding by investing in Australian technological innovations. For instance, the government could incentivise the production of batteries in Australia rather than exporting our raw lithium to be processed overseas.

### Local manufacturing

In the US, they are working to ensure supply chains align with the increasing demand for energy efficient technologies by working with the country’s manufacturers<sup>47</sup>. The US Department of Energy is securing the materials, components, infrastructure and other resources needed for manufacturers to produce the required technologies to meet shifting market demand.

In February 2022, the US released its Strategy to Secure the Supply Chain for a Robust Clean Energy Transition, which outlines a pathway with specific actions the US will take to secure manufacturing and critical supply chains needed for the energy transition<sup>48</sup>. The aim of the strategy is to accelerate investment into innovation by providing a clear, government-supported landscape outlook of the future vision of the energy system.

To inform the Strategy, the US did a deep dive assessment into 13 different technologies in consultation with energy sector stakeholders. The findings from these 13 assessments informed the Strategy to strengthen supply chains by focusing on the manufacturing and workforce base for the identified priority technologies. In addition, the US did a 100-day supply chain review of critical products (semiconductor manufacturing, advanced packaging, large capacity batteries, critical minerals and materials) to identify existing barriers within supply chains and shape the focus of the Strategy. One the actions that arose from the Strategy was the establishment of the Office of Manufacturing and Energy Supply Chains, tasked with overseeing the security of supply chains and modernisation of energy infrastructure<sup>49</sup>.

<sup>43</sup> [Stronger Supply Chain Links to a Clean Energy Future](#)

<sup>44</sup> [National Reconstruction Fund](#)

<sup>45</sup> [Future Charge - Building Australia's Battery Industries](#)

<sup>46</sup> [The success of modern manufacturing lies in value-adding, IP and new markets](#)

<sup>47</sup> [Stronger Supply Chain Links to a Clean Energy Future](#)

<sup>48</sup> [Securing America's Clean Energy Supply Chain](#)

<sup>49</sup> [Stronger Supply Chain Links to a Clean Energy Future](#)

The federal governments “Powering the Regions” fund could have a key role in supporting the development of local manufacturing in Australia’s regions, supporting onshore supply chain development, and providing jobs and opportunities for the regional communities.

### **Innovation**

In addition to supporting domestic supply chains, there is a vital role for innovation in energy efficient technology to create a competitive environment in relation to cost and technology performance. The EU is seeking to harness this link through the establishment of the European Strategic Energy Technology Plan (SET-Plan), which supports the commercialisation of high potential low carbon technologies through research and innovation<sup>50</sup>. The SET-plan provides support through planning, implementation, human and financial resources and international cooperation on energy efficient technologies.

In addition to tax reduction and exemption policies, the Australian Government can also increase subsidies for energy efficient technology innovation and manufacturing as well as support and finance clean energy projects. Government support of this nature would encourage businesses and industry to increase private financing towards energy efficient investments.

### **Key recommendations**

1. Government to encourage onshore value adding by investing in Australian technological innovations and manufacturing. This could be through tax reduction and exemption policies, increased subsidies for energy efficient technology innovation and manufacturing, as well as support and finance for clean energy projects.

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<sup>50</sup> [Energy technology & innovation](#)

## About Nexa Advisory

Nexa is a full-service advisory firm. We work with public and private clients including renewable energy developers, investors and climate impact philanthropists to help accelerate efforts towards a clean energy transition. We've been shaping the energy industry for over 20 years. With a proven track record across policy creation, advocacy, political risk assessment and project delivery, we're holistic in our approach and deliver solutions with commercial intent.

The Nexa Advisory team is a collaboration of passionate energy specialists, all committed to the successful transformation of Australia's energy markets. The team is focused on helping clients grasp the unpredicted opportunities the energy transformation will bring. The decentralisation of energy promises, for the first time, to enable a truly democratised ecosystem with people and communities at the centre. We believe in an energy industry where people are at the centre of every recommendation we make. This belief guides our approach to the challenges we solve, and the outcomes we create.