

## **Waverley Council's response to the Energy Security Target & Safeguard paper, June 2020**

### **Question 12: What issues should the NSW Government consider when setting targets to 2030? At what rate should the targets be increased to reach 13% by 2030?**

The NSW Government should consider:

- The importance of demand side participation and fast demand response programs in order to reduce the reliance on supply in the EST.
- That significant investment in energy efficiency and renewable energy will drive a reduction in peak demand, and that a target should also be set for a reduction in per capita residential greenhouse gas emissions as well as a per capita residential reduction in peak demand.
- Increased warming from climate change will drive demand for mechanical cooling during the summer peak unless homes and businesses are adequately designed and have good thermal performance, through insulation, glazing and shading.
- That global climate change is happening at an unprecedented rate, and that energy savings targets should be set as high as feasibly possible and implemented as quickly as possible.

Whilst 6% of Waverley's existing housing stock has been built under the BASIX scheme (hence meets more stringent water, energy and thermal comfort standards), this still leaves the remaining 94% of residential dwellings in need of retrofitting. Programs to retrofit the existing housing stock, for example, a whole of house rating tool for existing homes triggered at point-of-sale or point-of-lease with minimum energy performance requirements would improve housing comfort, affordability and reduce greenhouse gas emissions from the residential sector.

Waverley Council has committed to enabling the community to achieve a 70% greenhouse gas emissions reduction on 2003/04 levels by 2050. In order to achieve this, Waverley Council is reliant on other NSW Government agencies and utilities to provide support in helping to successfully reach this target, through policy support and programs that offer financial and tax incentives to the community and business sector. Waverley Council supports the extension of the Energy Saving Scheme to 2050 and the more ambitious energy saving targets. Implementing these as quickly as possible, and increasing them if they are met early, is recommended.

### **Question 13: What are the most promising opportunities once commercial lighting reaches market maturity? What is the likely size and cost of these opportunities?**

A total of 38% of Waverley's community greenhouse gas emissions come from the residential building sector (2015/16). Waverley Council supports the continuation and expansion of the NSW Government's Energy Saving Scheme in order to achieve residential and commercial emissions reductions.

In order to reduce greenhouse gas emissions from electricity consumption, the following efficiencies within residential energy consumption should be considered (in addition to improvements in lighting):

- Replacement of electric hot water systems and inefficient gas hot water systems with solar (gas or electric boost) or electric heat pump.
- A reduced reliance on mechanical cooling and heating through good house design/efficient thermal performance of building, including good levels of insulation, performance window glazing, adequate shading and light-coloured roofs.

- If mechanical cooling is installed, installation of high efficiency ceiling fans, air conditioners and evaporative coolers (where climatically appropriate).
- Replacement of inefficient swimming pool pumps with more energy efficient Variable Speed Drive pumps (or retrofitted VSD pump controllers).
- Investment in education around energy efficiency, to reduce heating and cooling energy consumption through behaviour and appliance maintenance, promotion of efficient appliances etc.

A total of 37% of Waverley's community greenhouse gas emissions come from the non-residential building sector (2015/16). In order to reduce greenhouse gas emissions and peak demand loads from the commercial sector, the following areas should be considered;

- Replacement of inefficient hot water/ steam systems with solar/heat pump/centralised cogeneration.
- Installation of high efficiency HVAC in conjunction with building management systems and regular maintenance regimes. Use of cogeneration and trigeneration plants where appropriate.
- Investment in retrofitting of building insulation, high performance window glazing (particularly on W/NW windows), window shading and window coverings and light-coloured roofs to reduce cooling (and heating) demand.
- Upgrade of inefficient motors, pumps, plant, refrigerators, freezers etc. in commercial / industrial settings.
- Reduction of use of instantaneous hot water urns, water chillers etc.
- CO monitoring and Variable Speed Drive equipment in carparks
- Investment in Power Factor Correction, Building Management Systems.
- Investment in education around energy and water efficiency for all employees, including efficient use of photocopiers, computer power save functions etc.
- Investment in education of building managers around energy efficiency and running plant off-peak to reduce peak demand.
- Installation of solar power.
- Requirement for high performance building design standards for all new commercial buildings, such as NABERS 5 Star Energy, 4.5 Star Water or Greenstar 6 Star rating.
- Requirement of all new buildings to meet stringent design standards around low carbon emissions, such as Green Star building accreditation.
- Requirement to renovate existing residential and commercial building stock.

**Question 14. What would prevent the uptake of new opportunities? What support (including new standards and calculation methods) does industry need to transition to new opportunities?**

Barriers include:

- A lack of a clear greenhouse reduction target & a framework to achieve this for each sector.
- A lack of simple mechanisms that are easily communicated to people.
- Having voluntary schemes instead of mandatory requirements e.g. Requirement for all existing homes to be rated and to achieve minimum energy performance standards at point-of-sale/point of lease would drive upgrades in every house over a 20-year period. Alternatively, removing problem technologies from sale, e.g. banning electric hot water

systems as well as providing incentives for the most efficient technologies is two-edged approach.

- Lack of clear guidance and assistance to various sectors that are often locked out of State support schemes e.g. strata community

The support industry and local government needs include:

- Clear greenhouse gas reduction targets and a framework to achieve this for each sector e.g. transport, stationary energy use etc.
- Well-funded programs that are easily communicated to target audience.
- A price on carbon.
- Financial incentives for low-carbon and zero-carbon initiatives.
- Legislation changes (e.g. that allows rates-based financing).

**Question 15. What additional data sources are available that could inform assessment of the size and cost of the energy efficiency opportunity in New South Wales? Refer to Appendix B for technical assumptions. Energy Security Target and Safeguard: Consultation Paper 17**

- BASIX database for commitments made by all new residential dwellings in NSW since 2004 (see the Department of Planning, Infrastructure and Environment).

Note: Currently under the BASIX requirements, once a BASIX dwelling is completed, there is a requirement for the Principal Certifying Authority to go onto the BASIX webtool and generate a BASIX completion receipts. This informs the Department of Planning, Infrastructure and Environment that this certificate was followed through to construction phase. Unfortunately, BASIX completion receipts are not being routinely completed by PCAs. It is recommended that this issue is addressed, and a mechanism is found to ensure 100% of PCAs generate BASIX completion receipts. This would ensure that the BASIX database remains as accurate and relevant as possible, for future policy development around residential energy and water efficiency.

- ABS data for penetration rates of technologies e.g. Energy in Focus: Energy use in Australian Homes (2010)

**Question 16. What feedback can you provide to improve the other modelling assumptions set out in Appendix B?**

N/a

**Question 19. Which cleaner fuel switching activities should the scheme provide incentives for?**

Waverley Council supports the switch from fossil fuels to renewable energy, including solar PV and solar thermal technologies such as solar hot water heating and air source heat pumps. This is in line with Waverley Council's target to reduce community greenhouse gas emissions (benchmarked in 2003/04) by 70% by 2050. With the upcoming decreasing incentive from the Small-scale renewable energy scheme for solar thermal, the idea to provide further incentive through the Safeguard is an excellent one, to encourage further penetration of solar hot water systems and heat pumps to offset greenhouse gas emissions and reduce peak demand. Like the Victorian scheme, incentives in addition to the SRES would additionally encourage the replacement of electric hot water systems

with solar/heat pump systems. However, it will be important to keep the schemes/incentives simple for the end-user, as well as the industry implementing the scheme.

Several opportunities exist to replace electric hot water systems, that could be used to ensure the retrofit occurs systematically. A mandatory house energy rating scheme at either point-of-sale or point-of-lease could set minimum energy performance standards for housing and require simple retrofits to be made e.g. hot water and insulation, to ensure properties are comfortable and affordable for all tenants. The possibility of triggering the removal of electric hot water systems through the BASIX Alterations and Additions requirement could also be investigated. Currently, BASIX Alts & Adds only requires the replacement of the hot water system if it is part of the new work, however expanding that to capture the unaltered part of the dwelling, would increase the potential for capturing and replacing electric hot water systems. Policies such as these would encourage and complement the Safeguards incentive package, and result in the systematic removal of old and inefficient technologies from the existing housing sector.

Waverley Council supports the increasing penetration of renewable energy across the Waverley LGA and has worked closely with households, schools and businesses to encourage PV installation. If the NSW Government could provide further incentives to support the installation of solar PV to multi-unit dwellings, clubs, community housing and to those businesses who have already undertaken a recognised energy efficiency program, that would lock in both efficiencies as well as enable a renewable-powered community. Additionally, offering further incentives (up-front or zero interest finance) for homes to install solar PV would bring about significant greenhouse savings (see Q22 for an example). Ideally this would be coupled with an energy efficiency audit.

Over 50% of our LGA are renters and unit dwellers that are currently locked out of the benefits of solar, which is not uncommon in many areas across the State. Addressing this with support for innovative models to access off-site renewables, peer-to-peer trading or green electricity retailers will be critical to our low carbon future.

A total of 17% of Waverley's community greenhouse gas emissions come from residential transport (2015/16). To reduce emissions from this sector, Waverley Council also supports the increasing penetration of electric vehicles in NSW. Waverley Council, in collaboration with Woollahra and Randwick Councils have installed 8 public on-street electric vehicle (EV) charging stations in key destination hotspots powered by 100% renewable energy. Switching from fossil fuels to renewable energy in the transport sector is a key priority of the NSW Government's Net Zero Plan Stage 1. Extending the Energy Efficiency Scheme to encourage the uptake of electric vehicles across all sectors would be welcomed. Any incentives that could incentivise businesses, including local government, to electrify their internal fleet (e.g. waste trucks or corporate vehicles), would enable Councils to lead by example with these emerging technologies.

Finally, in the current global recession, local government is suffering from a loss of revenue and this is anticipated to effect program funding. However, local government has the resources in place to deliver any State funded targeted programs for their communities, in order to deliver community scale greenhouse and peak demand reductions.

**20. Should the scheme cover technologies that are being wound down under the SRES? If so, what is the best way to do this?**

See above.

**21. How should energy savings be counted for these cleaner fuel switching activities?**

- Unit of energy saved e.g. MWh per annum saved
- Tonnes of CO<sub>2-e</sub> avoided.

**22. What would be the likely scale of uptake of cleaner fuel switching activities? Please consider the number, size, and cost of projects.**

Hot water system replacement in Waverley LGA

Estimated no. owner occupiers with electric storage HWS = 3,963 households

Annual savings (kWh/house.year) = 2,413 kWh/house.year

Total savings if 20% of homes replaced electric HWS = 1912 MWh/year or 1700 Tonnes CO<sub>2-e</sub> avoided p.a.

\$1000 rebate per hot water system would cost \$792,000 p.a. for the Waverley LGA to potentially replace 20% of electric hot water systems.

Increased installation of PV on detached dwellings in Waverley LGA

Estimated no. owner occupiers = 6004

20% uptake of installation of 5 kW solar = 1200 households

Annual production per household = 7300 kWh/household

Total renewable energy generated from 1200 households installing 5kW PV = 8766 MWh/year

\$1000 rebate per PV system would cost \$1,200,000 for the Waverley LGA to potentially stimulate a 20% increase in solar PV uptake.

**23. Under what circumstances should the NSW Government consider extending scheme liability beyond the electricity sector?**

The NSW Government could consider extending the scheme into the transport sector, in order to reduce transport related greenhouse gas emissions and meet the NSW Government's Net Zero Plan by 2050. Transport is the second largest greenhouse gas emission sector after electricity generation.