

Energy Upgrades for Australian Homes

RACE for
2030
HOMES

Installation of products and services that reduce energy consumption and electrify homes

- Gaps and draught sealing in roof, windows, doors, penetrations
- Energy efficient electric appliances
- Electric heat pump hot water and reverse cycle air conditioning
- Renovation planning that incorporates energy efficiency measures, eg insulation and window treatments
- Solar and battery storage where appropriate

90% of Australian homes built before there were energy ratings



ENERGY UPGRADES FOR AUSTRALIAN HOMES



RACE brings together the whole energy value chain to co-ordinate and facilitate

- Pre commercialisation research & knowledge sharing
- Market transformation
- Impact



The opportunity

A nationwide energy transformation in the way Australian's heat, cool and power their homes is underway. There is an opportunity to join the growing network of emerging leaders who are shaping and establishing the foundation upon which this phenomenal transition will occur.

National coordinated action is already occurring with the recent introduction of:

- 'Whole of Home' energy assessments,
- the [Trajectory for Low Energy Buildings Plan](#) and
- the draft [National Framework for Disclosure of Residential Energy Efficiency](#).

All provide a glimpse into the regulatory frameworks, market structures, and new-norms that will entirely reshape Australia's energy system in the years ahead. In order to achieve this the Commonwealth, state and territory Energy Ministers have established the [National Energy Transformation Partnership](#), which aims to catalyse and support a nationwide energy transformation, and will prioritise emissions reduction, a coordinated cross-sector approach, community consultation and equity.

RACE for 2030's role as a CRC and its partnership with Commonwealth and State Governments makes it a key innovation player for this national co-ordination and research.

Energy Upgrades for Australian Homes addresses collective residential sector transformation.

By 2025, it will have developed a co-ordinated, practical, equitable and place-based framework to enable energy upgrades in Australian homes.

The project will:

- Facilitate accelerated market readiness, community buy-in and deliver a tested blueprint for a national, community-level energy transformation at pace and scale.
- Test different energy upgrades across climate zones, building stocks, socio-economic groups including low-income and indigenous households and home occupant groups including public and private tenants.
- Benefit communities by building trust, overcome adoption barriers, share learnings and communicate best practice.
- Build market readiness and encourage the rapid scale-up of accredited service providers and supply chains and test various financing models through its pilots.
- Accelerate the residential sector transformation to flexible electric-only, low carbon, reduced energy-bill housing. In doing so, it aims to improve comfort and health outcomes for millions of Australian households.



The project - scalable innovation

The overall goal is to have energy upgrades occur in 1 million homes initially and then grow that to 5 million of the existing 10 million homes in Australia. This will improve energy efficiency and thermal comfort, change the way households use energy in order to lower energy bills and decarbonise. This needs a cleverly designed program model that is scalable at a national level – that is easy to implement at the local community level, designed for varying climates, housing types and household groups.

This project will deliver:

- An Energy Upgrades Framework that communities can run for their home energy upgrades
- Pilot Projects that provide a ‘test and trial’ pathway and evidenced based evaluations
- Policy and regulation commentary on how scaled innovation could be enabled



The energy performance objective

\$500m + **2 MtCO₂e**
SAVED SAVED



Household energy upgrades can potentially reduce energy consumption by **30-50%**



and an energy costs saving of **20-40%** in 2022 dollars with the aim being an



average of **\$400-600** per house per year for currently poor performing homes.

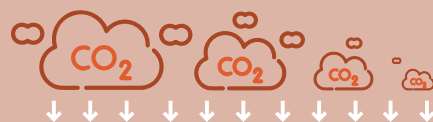


For 1 million homes this could be **\$500m** **2 MtCO₂e** energy savings and



for 5 million homes this could be **\$2.5b** **10 MtCO₂e** equating to a saving of

around **6-8kWh** per day per household

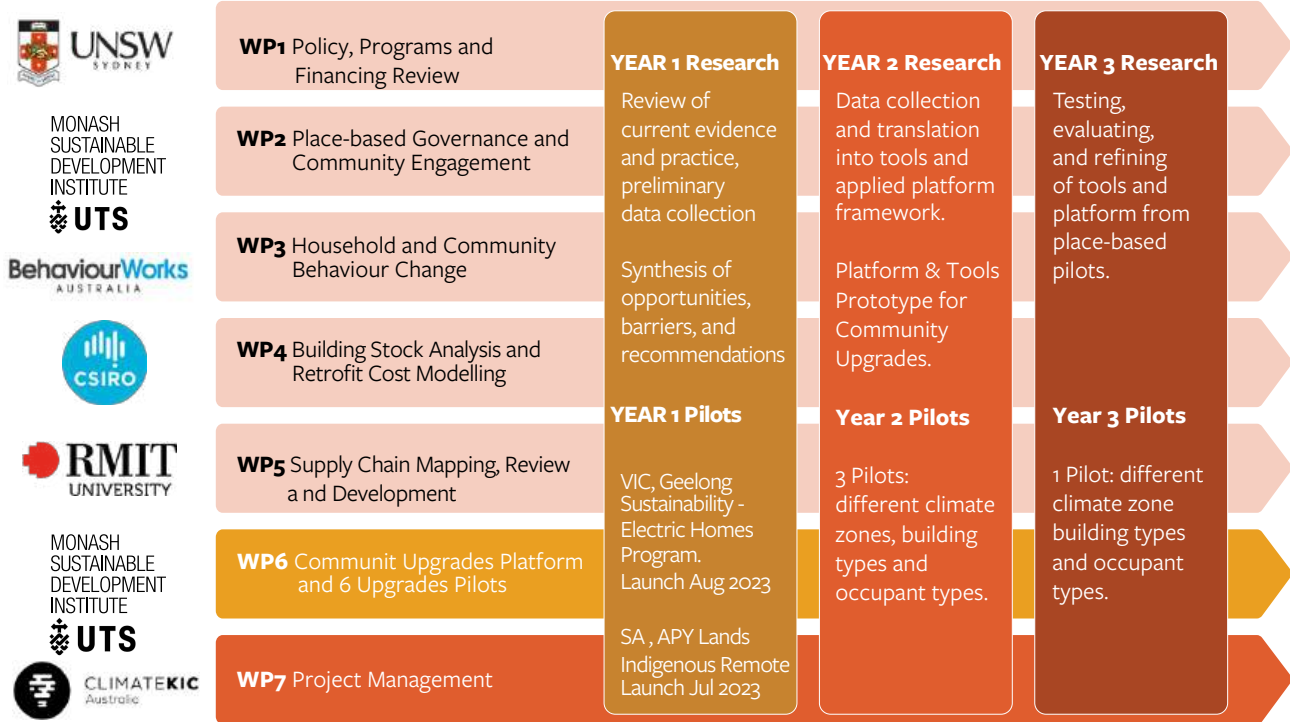


significantly contributing to the **decarbonisation** of the residential sector and the **Australian Government's 43% by 2030** and net zero emission by 2050 emission reduction targets

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The project scope of works and pilots



The online platform framework – community home energy upgrades

This project has 5 key outputs to accelerate energy upgrades of Australian homes at scale:

- **6 pilot home energy upgrade programs** delivered in communities over the course of the project by pilot proponents (industry partners), where pilot design and outcomes are supported and shaped by research services provided through this project.
- **Policy Recommendations:** (briefs) developed in collaboration with industry partners and stakeholders based on the research and pilot outcomes and insights to drive institutional change at the federal, state, and local levels (led by WP1).
- **Practical and evidenced based tools and guidelines** for delivering tailored programs in communities to generate millions of home energy upgrades.
- **Supply Chain for the Upgrades:** strengthen product and service delivery through training, materials and navigation to accredited providers
- **A prototype Online Home Energy Update Platform** to consolidate and disseminate tools, guidelines, and evidence outlined above.
- **Communications content** and engagement to ensure that the knowledge and tools generated by the project are effectively disseminated to key stakeholders and the wider public.