

New homes that produce more energy than they consume will be built at a development in Sydney's south-west.

Self sustaining homes packed with distributed energy assets will deliver lower bills for residents at a new estate in Sydney's south-western suburbs.

Led by developer Frasers Property Australia, 51 new self sustaining homes will be constructed at the Ed.Square precinct in Edmonton Park with support from ARENA, each kitted out with rooftop solar, ground source heat pumps, induction cooktops, solar hot water, double glazed windows, LED lighting and roof insulation.

The self sustaining homes will achieve 'net zero energy demand' by producing more energy than they consume, making them cheap to run and helping to bring sustainable housing designs into the mainstream.

[The all-electric homes](#) won't be connected to the gas grid, saving money on connection fees while maximising the use of energy from on-site solar panels.

As one of Australia's largest developers, Frasers Property aims to apply information gathered to its other projects and to help quantify how the housing market values sustainable designs.

Frasers Property's Cameron Leggatt said they will share data widely to inform the building industry and customers of the benefits of energy efficient appliances and designs.

"Our vision for this project is for it to have industry-wide implications that will elevate the energy performance of not only the homes Frasers Property creates for its customers, but the new housing sector nationally," Mr Leggatt said.

"Net zero energy demand must be a goal for the entire property industry across all sectors if Australia is to achieve its emissions reductions targets. Projects like this are an essential part of the broader effort required," he said.

As well as constructing the new homes, the Edmonton Square estate will use a new model for Frasers' energy retailer Real Utilities embedded network, providing an option for customers to access solar with lower retail tariffs.

The new houses are expected to go on sale before the end of the year and be completed in 2022, supporting 120 construction and 102 ongoing jobs.

Home energy transformations

[ARENA is providing \\$708,910](#) towards the \$1.4 million demonstration as part of work to prepare for a dramatic uptake in behind-the-meter energy assets.

This builds on [funding announced last year to support Mirvac](#) to build 49 net zero energy townhouses at Altona North, approximately 10kms from Melbourne's CBD.

ARENA CEO Darren Miller said he hopes the model can be replicated to deliver more sustainable houses.

"Through this project we're able to highlight the beneficial changes that energy efficiency improvements can make to next generation, net zero energy demand homes, whether that be through cost savings for homeowners or reducing emissions in the construction industry.

"We look forward to working with Frasers throughout the build of the homes at Edmondson Square and sharing valuable knowledge that we hope industry can use to replicate this model and adopt more net zero energy demand homes going forward," he said.

Paying back faster

As the cost of distributed energy falls, the payback time for assets like rooftop solar, batteries and smart appliances is shrinking.

Projects like the Edmonton Square estate will help to assess whether the market will pay more upfront to achieve lower energy bills, but experts already argue that building beyond the minimum standards required is worthwhile.

RMIT Research Fellow Dr Trivess Moore has modelled the lifetime costs for high-performing sustainable homes, finding the increased upfront capital costs for an 8 star, zero emissions home can be recouped within 12 to 14 years through reduced energy bills.

"The evidence around Australia now shows that 7.5-8 star is the economic sweet spot, in terms of performance and sustainability and economics," Moore told ARENA.

He said that sharing performance data for the net zero energy homes, as well as information about what does and doesn't work and construction costs, will be important to drive change across the home building industry.

Most states require homes be built to achieve a minimum six star rating, but this can be improved by installing home renewable energy like solar panels, home batteries and smart appliances.

Passive measures can also to boost ratings, from orientating homes to capture warmth from the sun during winter and keep it out during summer, using double glazed windows, insulating and draught proofing, incorporating ventilation, building with sustainable materials, and embracing water sensitive designs.