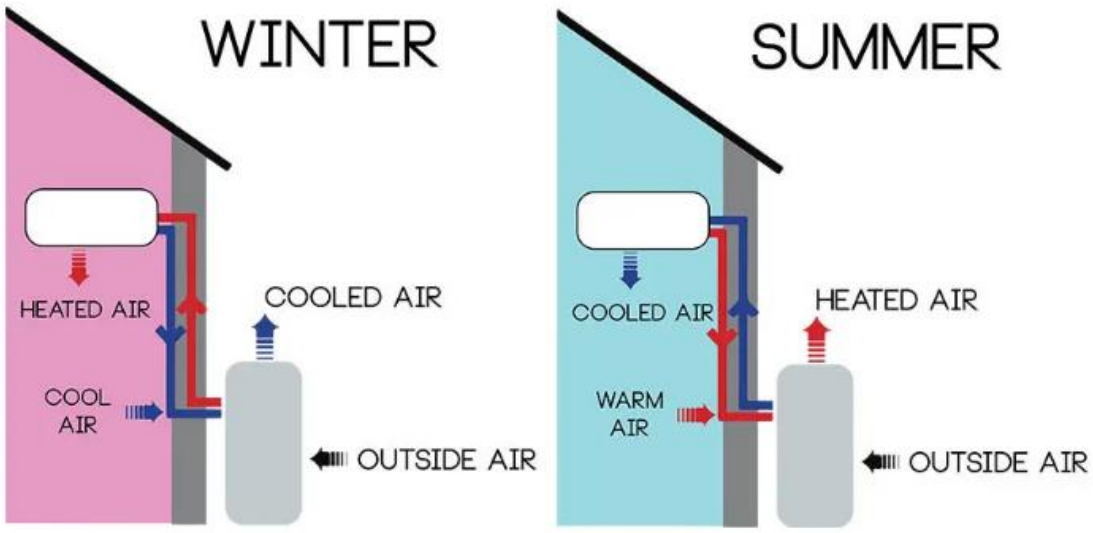
Heat pumps are more popular than Teslas.

Indeed, millions of Australian homes already have heat pumps in the form of refrigerators and reverse-cycle air conditioners. They are transforming household energy use and when powered by solar panels on the roof, greatly reducing household emissions.

An electric heat pump is an all-in-one heating and cooling unit, essentially an air-conditioner that runs in two directions. In the summer, it functions like a traditional A.C. unit, pumping heat out of the home and circulating cooled air inside. In the winter, it draws heat into the home. That might seem surprising, but it's true. Even when it's bitterly cold outside, there is still heat available. It's an interesting fact that there is energy available in the air until the temperature reaches absolute zero at -273.15C. As it gets colder, heat pumps have to work harder, using more energy, to extract that heat.

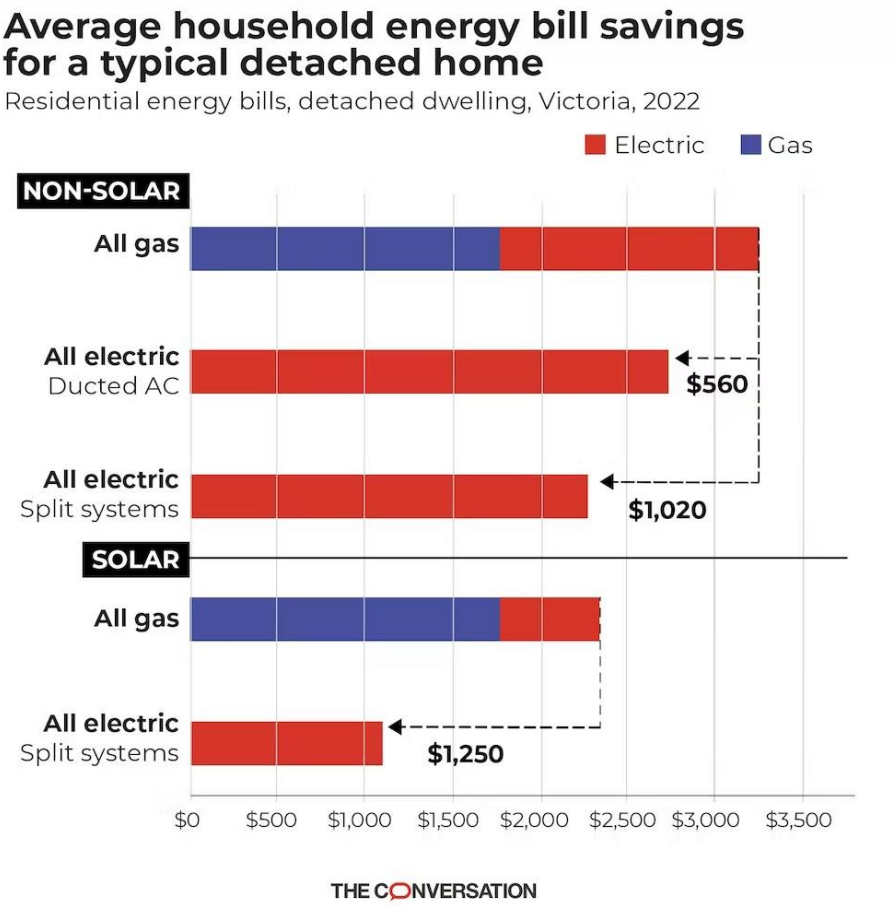


Source; Rick Rasch

Gas and traditional electric heating make us warm by burning fossil fuels at an inefficient rate of one unit of input for one unit of output, for a heat pump the same process sees one unit of input produce three units of output. Heat pumps don't generate heat. They transfer it. That allows them to achieve this 300 percent efficiency.

Relative to an electric fan heater or traditional electric hot water service, a heat pump can save 60-85 per cent on energy costs.

Comparisons with gas are tricky, as efficiencies and energy prices vary a lot. Typically, though, a heat pump costs around half as much for heating as gas. If, instead of exporting your excess rooftop solar output, you use it to run a heat pump, it will be up to 90 per cent cheaper than gas.



Alan Pears, energy researcher specialising in heat pumps, states that selecting a suitable heat pump (more commonly known as a reverse-cycle air conditioner) can be tricky, as most advisers are used to discussing gas options. Resources such as yourhome.gov.au, choice.com.au and the popular Facebook page My Efficient Electric Home can help.

So come on let's get on with electrifying everything, heat pumps will play a crucial role in Australia's energy transition. Every home needs at least one!

Source; read Alan Pears https://theconversation.com/heat-pumps-can-cut-your-energy-costs-by-up-to-90-its-not-magic-just-a-smart-use-of-the-laws-of-physics-185711