Overview

Anzen is dedicated to making healthy indoor environments a standard. Our mission is to demonstrate the potential of futureproof, refrigerant-free, alternative low-carbon heating and cooling technologies like Anzen’s solid state heat pump by decarbonising a million homes by 2035. By developing a refrigerant-free, easy to install and manufactured, holistic indoor climate control system that makes healthy indoors a standard, we can accelerate the off-gas transition by two-fold. Our pioneering solid-state technology aims to decarbonise the built environment at scale, fostering a resilient and equitable future. We are bringing thermoelectric heat pumps to the home retrofit industry, which can not only solve the scalability of low-carbon heating systems challenges but also add value by giving flexibility in budgeting and energy consumption. Our flagship product, Anzen Climate Wall, seeks to eradicate fuel poverty by offering a comprehensive indoor climate control system adaptable to resident usage, affordability, and weather changes.

Globally, over 15% of carbon emissions come from the heating and cooling demands of buildings. The alternative proposed by IRENA is to electrify thermal management; however, depending only on vapour compression technologies, the decarbonisation can take well over the targeted Net Zero deadlines. The age-old technology cannot accommodate hard-to-abate properties due to cost, space, and installation complexities. They also propose the issues of refrigerant leakages and embodied carbon.

We believe that for scaling adoption, our product offerings have to be planet as well as people-centric, thus bringing incentivised decarbonisation that adds value to people’s lives. With our system installed in homes and offices, we can mitigate 2.81t of CO2e per home per year. We aim to decarbonise 100k homes by 2030, which can mitigate 12.64 Mt of CO2e. Our thermoelectric technology can unlock abilities that were never available before, like variable power consumption, enabling the residents to consume the lowest amount of power and even use heating strictly as per their budget. We are also building towards a system that has zero energy waste, which looks at the whole day’s usage and optimises the hot and cold output sides of the thermoelectric system to be utilised indoors.

Anzen’s current product line has 1kWh and 2kWh decentralised solid-state heat pumps with an energy efficiency of 200% and above. We plan to launch a hot water system in late 2026 and a centralised heating system in 2027 with a targeted efficiency of 300% and above, leveraging the benefits of Anzen’s thermoelectric heat pumping technology.