MEDIA RELEASE

ARENA
Australian Government
Australian Renewable Energy Agency

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Cool solution for renewable refrigeration

An innovative new cooling technology developed in South Australia will be trialled at food, agriculture and tourism businesses to help reduce their energy costs and emissions from heating and cooling.

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced $2 million in funding to Glaciem Cooling Technologies Pty Ltd (Glaciem) to demonstrate the technical and economic value of integrating thermal energy storage with renewable energy into Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R) applications.

Glaciem and the University of South Australia (UniSA) have been developing a low cost thermal energy storage technology that will store and discharge energy using a heat transfer process. This occurs at a temperature suited to the specific application using special material.

Glaciem's technology has the added benefit of using natural refrigerants rather than commonly used synthetic refrigerants which are harmful to the environment. Glaciem's technology also uses an advanced control and forecasting system to optimise the system's operation based on weather forecasts, electricity price forecasts, and customer demand forecasts to optimise the storage system to maximise customer savings.

The HVAC&R consumes around 22 per cent of all electricity produced and is responsible for around 50 per cent of peak demand on the electricity grid.

The $4.95 million project will build on the outcomes of previous ARENA funded research and demonstrate Glaciem's system at three different customer sites:

- Ceravolo Orchards in Oakbank, South Australia will install Glaciem's system with on-site solar PV generation to manage peak demand and optimise the storage and use of renewable energy in a cold storage system.
- Pernod Ricard Winemakers in the Barossa Valley, South Australia will install Glaciem's system with on-site solar PV generation to reduce exposure to peak electricity costs for process cooling.
- Reef HQ Aquarium in Townsville, Queensland will expand the existing solar PV capacity at the site and integrate this with Glaciem's technology to optimise the air conditioning and water cooling load at the site.

ARENA CEO Darren Miller said Glaciem's thermal storage combined with renewable energy generation demonstrates an innovative solution that will help industry to reduce emissions and derive more value from on-site renewable energy.

"These pilot sites trialling Glaciem's technology will demonstrate that refrigeration equipment, grid supply and on-site renewable energy generation can be reliably integrated across a range of commercial businesses."

"Helping industry reduce emissions is one of our three investment priorities, and heating and cooling is a huge driver of our electricity consumption including peak demand, which drives higher electricity prices for everyone."

"There are significant opportunities across the heating and cooling sector to reduce energy costs and emissions by combining renewable energy alternatives with innovative storage technologies, and we're proud to support a homegrown startup like Glaciem do just that," Mr Miller.

Glaciem Managing Director Julian Hudson said: "The project aims to commercialise previous research funded by ARENA and will demonstrate that there are real viable alternatives for end users of HVAC&R that drastically reduce operating costs, maximise the economic potential of renewable energy assets and reduce direct and indirect CO2 emissions."

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