

SUNOVATE

INNOVATING SOLAR

Combining PV and Thermal (PVT)

300% boost

to total energy output by cooling
PV panels and utilizing the heat



Sunovate
innovating solar



RENEWABLE HEAT AND ELECTRICITY

With the same solar panel

Energy for heating and cooling accounts for approximately 50% of global energy demand (and nearly 40% of CO₂ emissions). Renewable heat has received a lot less attention than renewable electricity but has the potential to play a massive role in mitigating climate change. The Sunovate system has been designed to address the need for renewable heat.

Sunovate is a simple platform technology that boosts the energy output of standard solar panels by up to 300%. The double-sided Sunovate solar “air-o-voltaic” panels are truly ground-breaking. As with a standard photovoltaic, the front side of the panel captures the sun’s rays to generate electricity. Here’s where it gets interesting... the back side of the panel can capture heat from sunlight and the atmosphere for use in space, water and process heating. Sunovate heating is also effective even on cloudy days and at night. That’s because the Sunovate system works by absorbing atmospheric energy, when not in direct sunlight. That means, regardless of weather, the system can be beneficial all year round.

Traditional solar panels lose around 80% of the sun’s available energy as heat. With standard PV, this heat has previously been lost. Now with the Sunovate system, the solar energy that would otherwise have been wasted is recovered and is used to regulate the temperature inside a building, heat water or undertake process heating/drying.

The Sunovate system can deliver the optimum balance between output temperature and heat/power generation without costing the earth.

MAXIMISING THE POTENTIAL OF SOLAR

3x more energy per m²:
 more power, less rooftop space,
 simple installation and aesthetic design



Mobile Panel Array System

The Sunovate test bed (pictured) was used for external validation of the technology. A larger multi-panel array is currently being built to demonstrate the technology alongside the use of heat pumps for industrial and commercial applications.



Residential Install South Perth

The Sunovate domestic array has been installed in a residential property. This system installation will complete this residences removal of gas from their energy mix. The heat will be utilised for space heating.

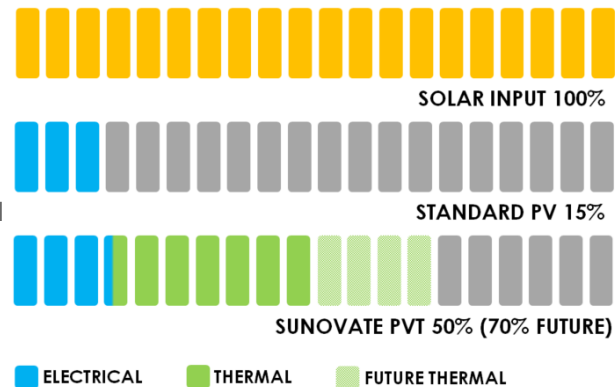
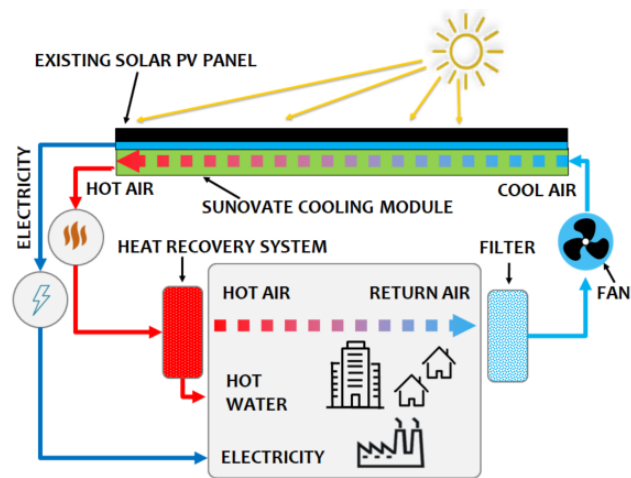


L3 Living Laboratory

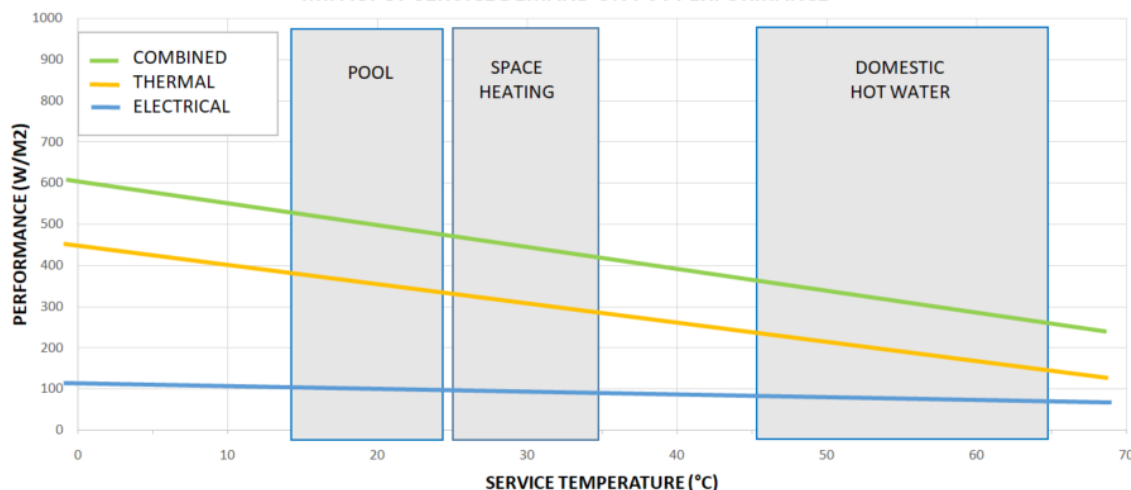
Partnering with Curtin University the Sunovate system has been designed into a new modular commercial building. The system will demonstrate space heating alongside innovative IOT technologies.

HOW SUNOVATE WORKS

Sunovate is cutting edge solar "air-o-voltaic" technology. In simple terms, cool air is blown into the Sunovate module (cooling the PV cells). Cooler cells means more electrical production. The heated air produced is collected and the energy from it can either be used or stored.



IMPACT OF SERVICE DEMAND ON PVT PERFORMANCE



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SUNOVATE APPLICATIONS

SCALABLE PLATFORM TECHNOLOGY

The Sunovate system is a highly scalable platform technology which enables it to be used for small domestic requirements or for large industrial low grade heat applications.

MAJOR APPLICATIONS:

- Heat and electricity production for industry (agriculture, food and beverage, biomass drying, wood, waste and chemical processing)
- Heat, electricity and hot water production for commercial buildings, apartments, leisure centres, hospitals, hotels and retail.
- District heating

Sunovate can be used for:

- Direct air space heating
- Hot water heating (via heat exchanger)
- Pool heating (via heat exchanger)
- Space heating (via heat pump heat exchanger)
- Hot water heating (via heat pump heat exchanger)

Sunovate can be:

- Retrofitted to existing installations or fitted at point of manufacture
- Built into roofing panels or installed onto existing PV hardware
- Ground or roof mounted

CURRENT APPLICATIONS



Electricity



Heat



Cooling



Desalination

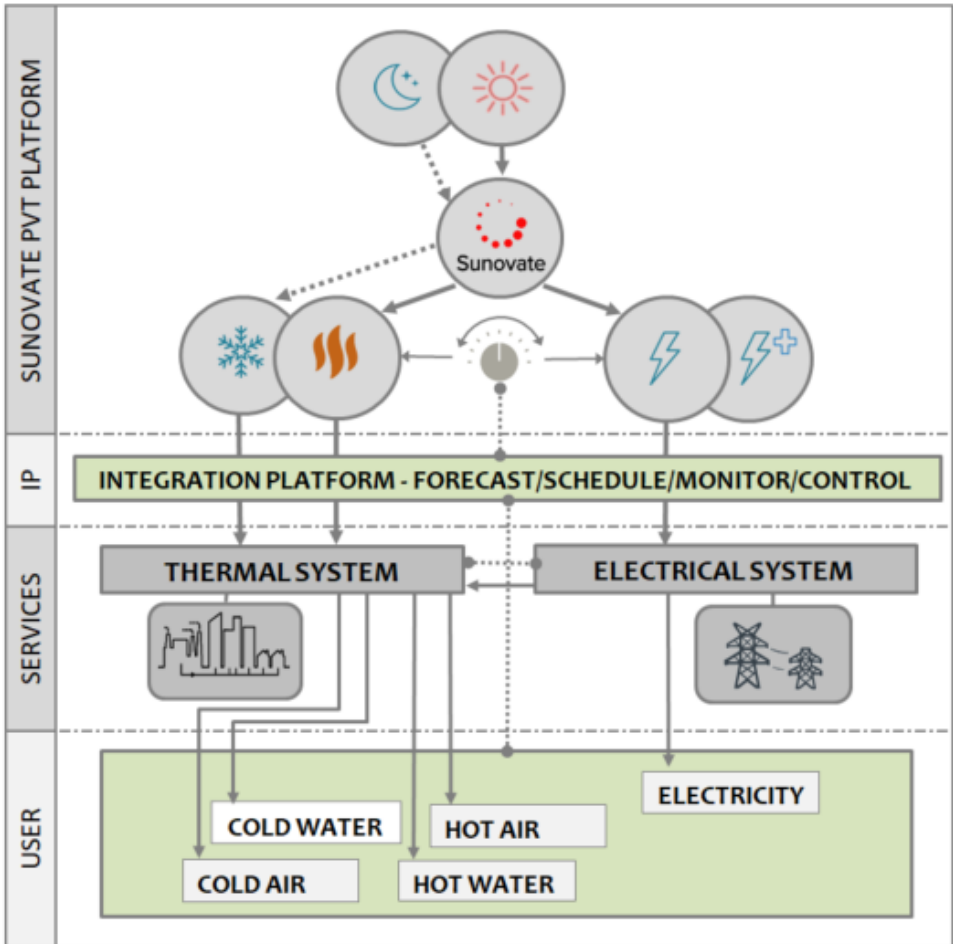


Purification

FUTURE APPLICATIONS



“WE MAY BE RACING DOWN THE PATHWAY TOWARDS A 100% RENEWABLE ELECTRICITY FUTURE, BUT WHEN IT COMES TO HEATING, COOLING AND TRANSPORT, WE ARE COASTING ALONG AS IF WE HAD ALL THE TIME IN THE WORLD. SADLY, WE DON'T.”, RANA ADIB, EXECUTIVE SECRETARY OF REN21.



AWARD WINNING TECHNOLOGY



2018

Western Australian Innovation Voucher recipient
Climate KiC Launchpad - State & National Winner
Climate KiC - selected to attend global finals
Chamber of Minerals & Energy, Western Australia
Energy Innovation of the Year - Finalist
Australian Technologies Competition, New Energy
- Finalist
Curtin Accelerate Graduate

2019

World Energy Council & DENA - #SET100 List
Cappgemini Invent to Pitch - selected to present
Sunovate to a global audience at Vivatechnology
IEA TASK60 PVT - invited to participate in the global
forum on PVT



#SET100
START-UP 2019



VIVA
TECHNOLOGY
MAY 16-18, 2019 / PARIS



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