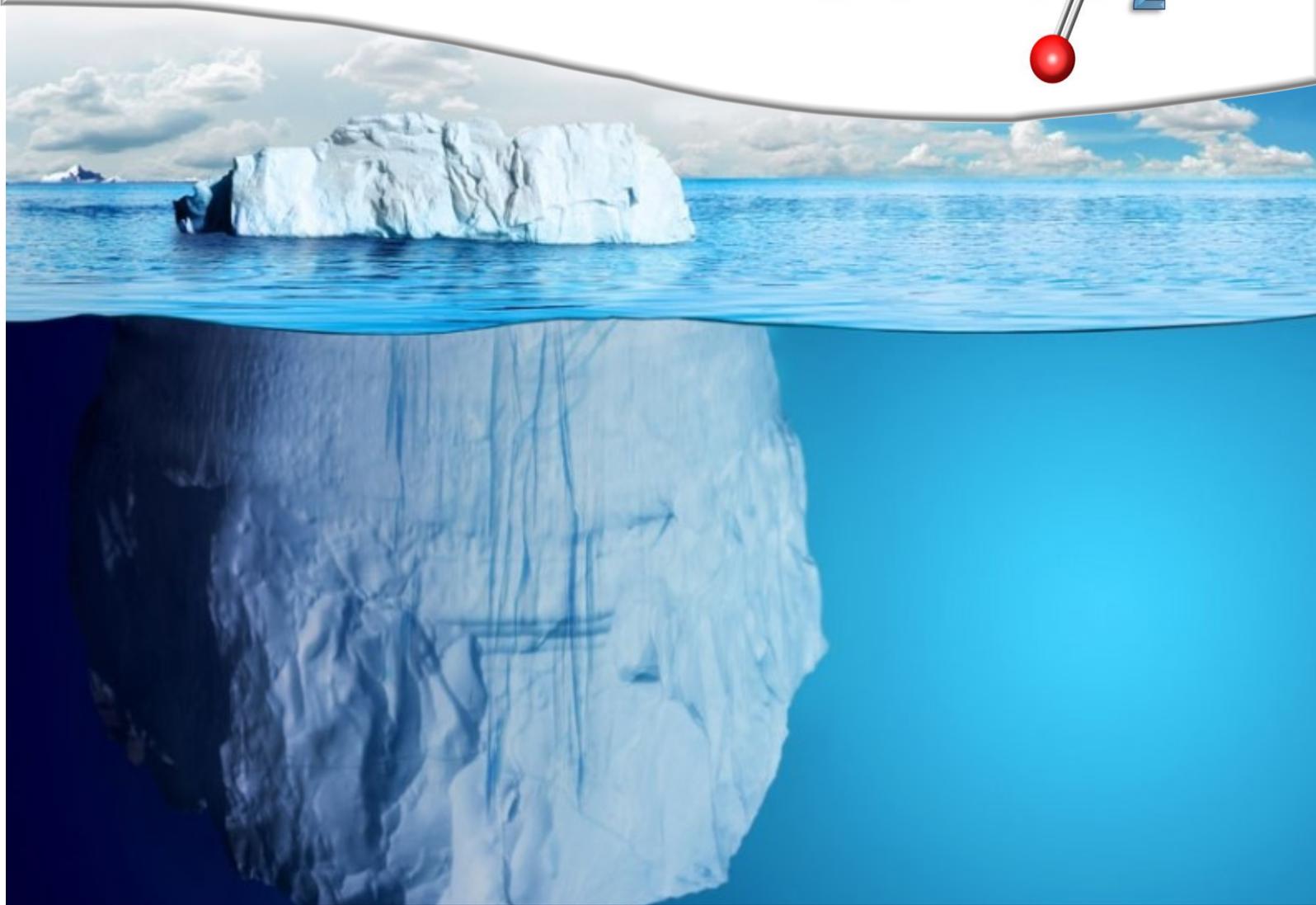
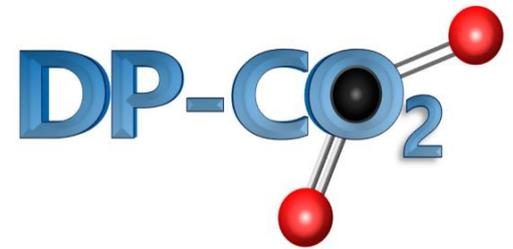


GLACIEM

Cooling Technologies



Carbon Dioxide Refrigeration

DP-CO₂ provides highly efficient cooling for hot climates

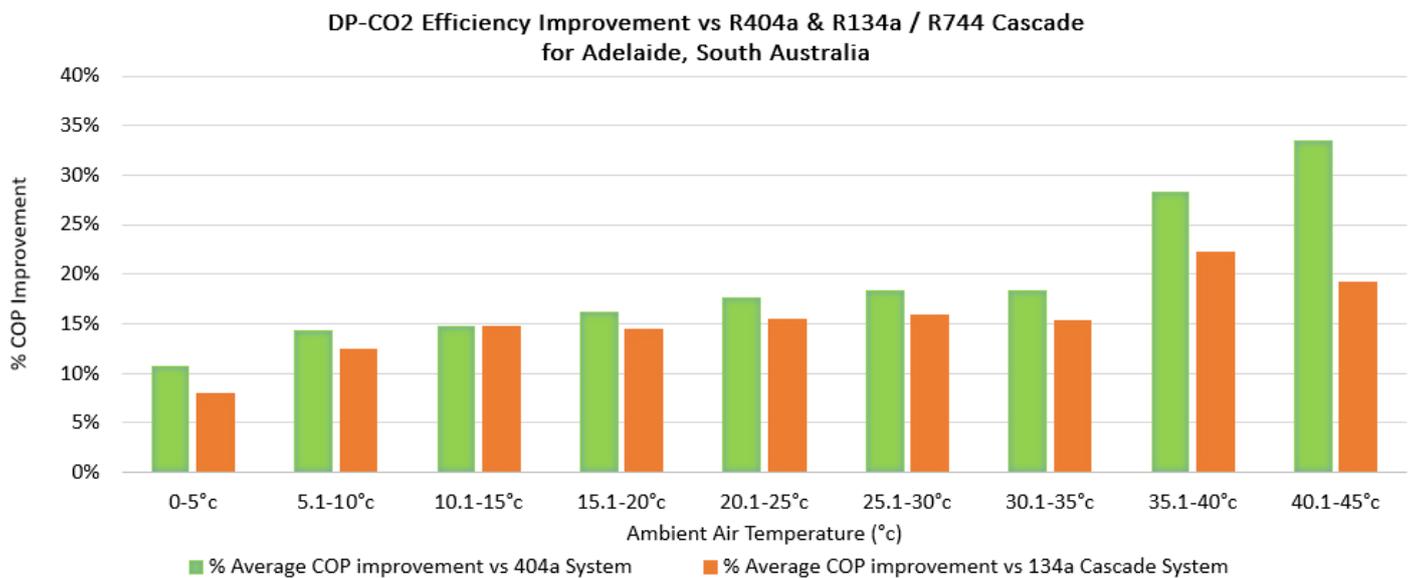
(Patent Pending)

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Performance

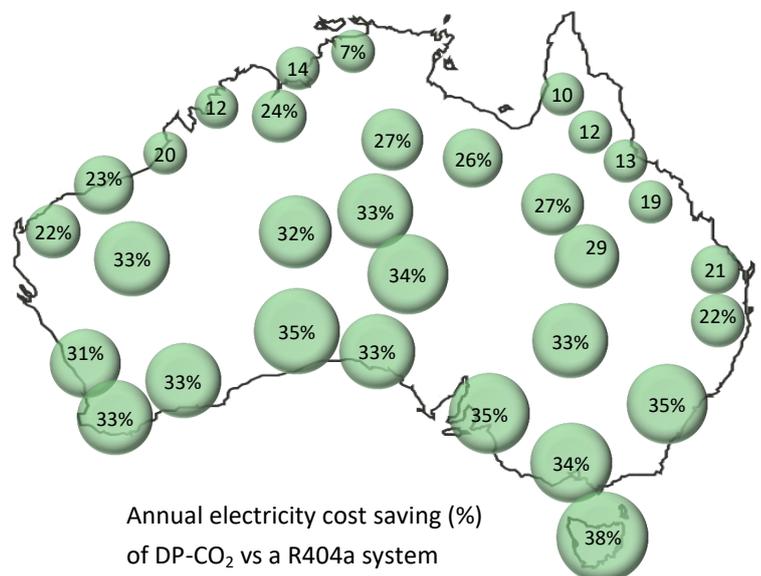
Glaciem's DP-CO₂ is one of the most efficient cooling systems in the world. It is more efficient than current HFC/CO₂ cascade and CO₂ only systems, across a wide range of climatic conditions. The figure below shows DP-CO₂ performance against annual temperature brackets. For the range of temperatures normally experienced in this location, it is evident that the system provides significant efficiency improvements over the entire year. The Coefficient of Performance (COP) in particular increases significantly during periods of elevated ambient temperatures.



The figure below shows the relative annual energy cost savings across Australia of DP-CO₂ versus a conventional R404A refrigeration system.

DP-CO₂ delivers significant annual savings in areas of elevated ambient temperatures and low humidity. Even in areas with elevated humidity, such as Northern Australia, DP-CO₂ returns meaningful savings.

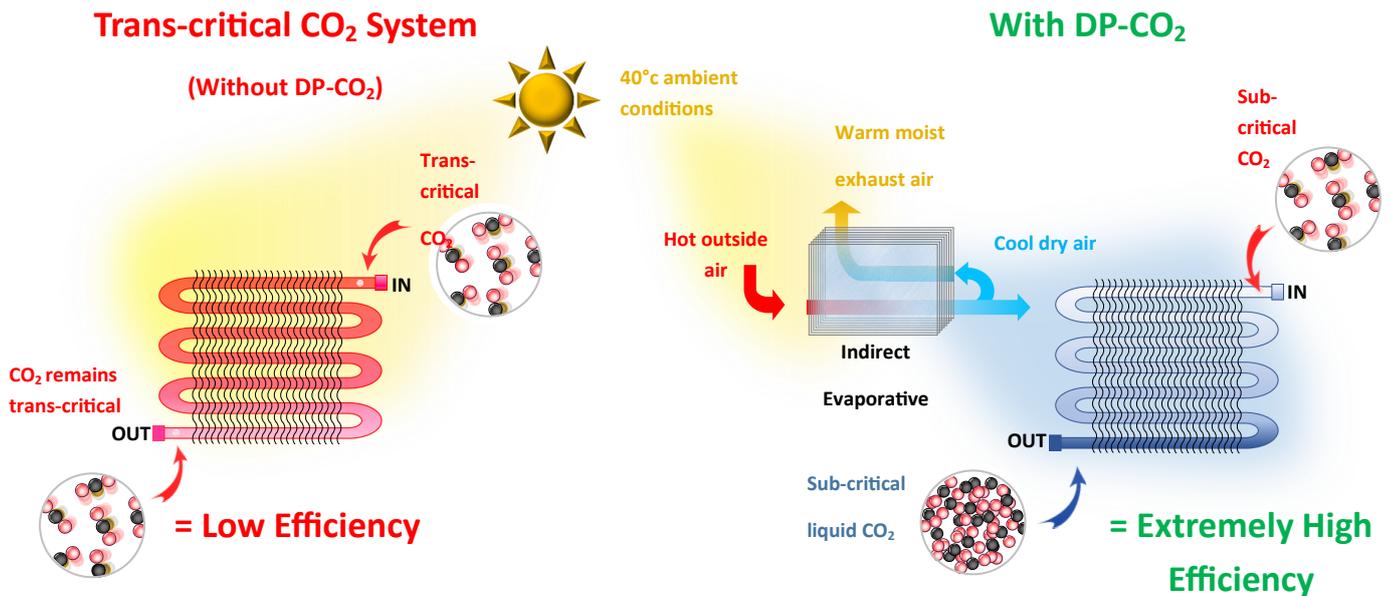
System modelling carried out by the University of South Australia also shows a significant reduction in peak demand. The significance in reduction of energy demand during hot conditions corresponding to peak grid electrical cannot be understated. During the transition to renewable energy, the price of energy during peak demand times will rise.



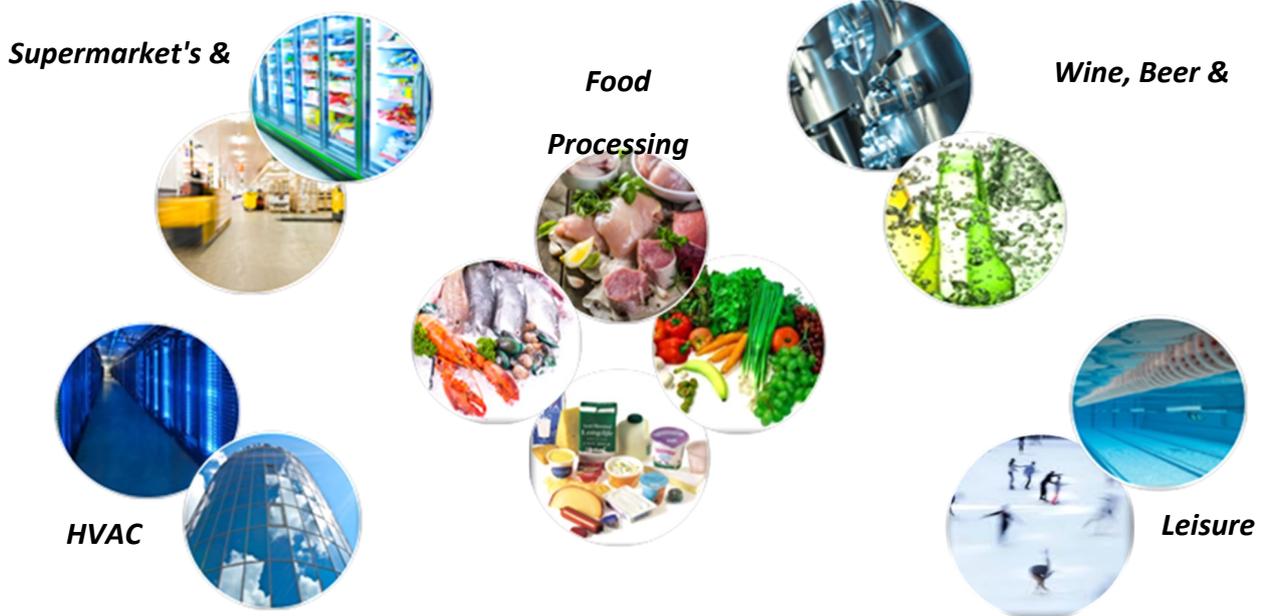
DP-CO₂ Technology



Without DP-CO₂ technology, CO₂ only systems operate in a trans-critical state under hot ambient conditions. This results in low efficiency refrigeration under ambient temperatures above 22°C. With integrated indirect cooling technology however, CO₂ is easily able to condense due to the cool dry air flowing over the condenser. This results in high refrigeration efficiencies, even under hot ambient conditions.



DP-CO₂ is designed and built to provide refrigeration for a wide range of Commercial and Industrial cooling applications, ideal cooling solutions for the following industries and sectors:



Glaciem Cooling Technologies take great pride in working closely with end users to deliver cooling systems that are finely tuned to their requirements. Systems will always be configured to ensure highly efficient cooling tailored to production / storage requirements.

Project Spotlight

Making history at The Bend!



On the 17th April 2018 the Glaciem team were delighted to commission a world first integrated refrigeration system at 'The Bend' Motorsport Park at Tailem Bend. The system incorporates three cutting edge technologies;

- Glaciem's DP-CO₂ — Refrigeration System
- ThermCOLD Thermal Energy Storage System
- Proprietary Software to run Integrated Controls

The Glaciem team were joined on the day by 55 people made up of individuals from the Industrial and Commercial refrigeration sector, consultants and academics, and state and local government representatives.

Glaciem acknowledges the critical support of; The Peregrine Group, The University of South Australia, TechInSA, Carbon Neutral Adelaide and many others in making this project a reality.



L to R: Dr Sam Shahin, Professor Frank Bruno & Dr Stuart McNab at 'The Bend' opening



Julian Hudson, Managing Director of Glaciem Cooling, showcasing the technology



About Glaciem Cooling Technologies

Glaciem Cooling Technologies provide cutting edge refrigeration technologies to the commercial and industrial sectors.

Glaciem specialize in the design and manufacture of CO₂ only refrigeration systems ideally suited to the harsh Australian climate, and Thermcold thermal storage solutions, incorporating award winning phase change materials.

As a Senior Industry Partner to the Barbara Hardy Institute, Glaciem are participants in the Low Carbon Living CRC, an organisation working towards lowering carbon emissions in the built environment.

Glaciem are proud Founding Members of Carbon Neutral Adelaide and the recipients of the 2017 Award for Applied Innovation.



Founding Partner
**CARBON
NEUTRAL
ADELAIDE**



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