

6<sup>th</sup> Global District Energy Climate Awards  
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Veolia - USC Project Overview

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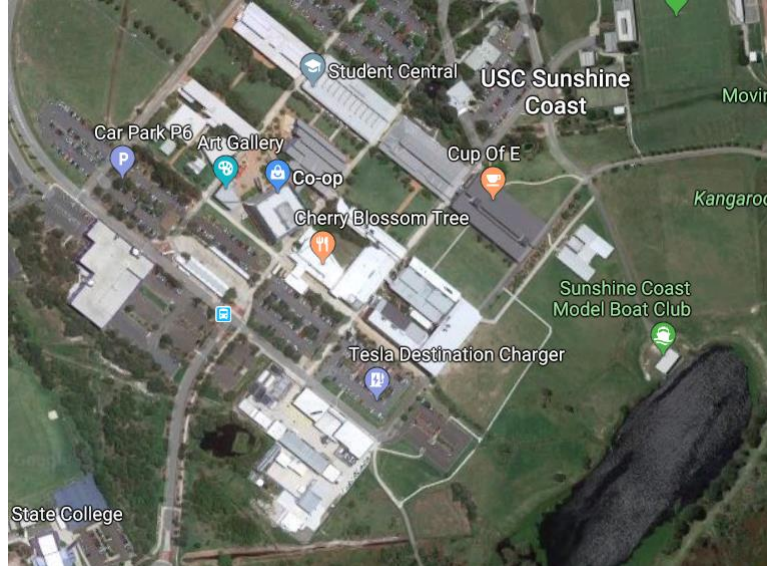




Universities have a large energy footprint



# District cooling network data



- **15 buildings**
- **1,6 km pipes**
- **9,2 MW cooling power installed**
- **10.436 MWh cooling demand**



## Why the program was implemented?

- Veolia has committed to combat climate change with 2020 objectives of:
  - 100 million CO2 equivalent tons of emissions reduced over the period 2015- 2020;
  - 50 million CO2 equivalent tons of emissions avoided over the period 2015- 2020;
  - Capturing more than 60% of methane in the waste disposal facilities the group manages.
- The University of the Sunshine Coast's Carbon Management Plan has set the benchmark to achieve carbon neutrality by 2025.



## Technical Solution

- **4.5 ML thermal storage tank** equivalent to 8MWh of electrical storage
- **~2 MW of PV** solar – 6500 panels
- Plant room with **integrated solar roof** (BIPV)
- **8,2 MW** new environmentally-friendly HFO chillers
- Solar **carpark** shade structures
- **BMS** load shifting critical to self consumption of energy produced
- Ultrafiltration plant utilising **lake water** for cooling towers
- Hubgrade monitoring and performance management

# Technical Solution

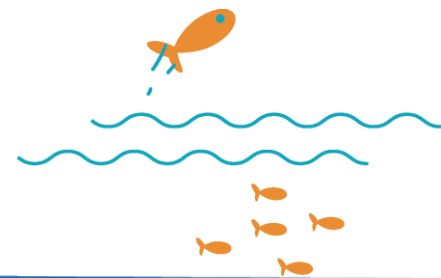




## How the program was implemented?

Contract as a DBOOT model (Design, Build, Operate, Own, Transfer), under which:

- Veolia designed and built the infrastructure
- Veolia owns, operates and maintains the infrastructure for a period of ten years, after which ownership will transfer to USC
- USC purchases electricity and chilled water from Veolia at an agreed price for 10 years.
- Open book partnership



## Achievements

- Reduce emissions of the University's main campus by 37% or 0.41 tonnes CO<sub>2</sub> per full-time student - from an original base of 1.1 tonnes
- Reduce consumption of electricity from the grid for the University's main campus by 42%
- Will decrease the University's CO<sub>2</sub> emissions by 100,634 tonnes over the 25-year project life
- Will result in a reduction by 802,104 Kilo Litres of main water consumption over the 25-year project life
- Will ensure provision for 40 electric-vehicle charging bays within the car-park infrastructure.



Thank you

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