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# Concentrated Solar Thermal & Concentrated Solar Power

Due Diligence, Concept Design and Cost-Benefit Analysis

Client: Confidential

Scope: concept design process engineering, technical specification, due diligence (technical and economic), and cost benefit analysis of Concentrated Solar Thermal & Concentrated Solar Power (CST / CSP) for Australian food businesses requiring high pressure steam and embedded power generation.

Technology and commentary	Installations	Sample Image
Linear Fresnel. From 1 to 125 MW installations. Image source: Ausra.	14	
Parabolic Trough. Range of scales from 2 to 185 MW across a broad range of geographic locations. Image source: trec-uk.org.uk	99	
Power Tower. Suited to utility scale systems (> 50 MW). Largest at 392 MW (US) with Dubai planning a 5000 MW system. Image source: helio.scp.com	35	
Dish. The two largest systems (both 1.5 MW in the US) are listed as being non-operational. Image Source: naturaecoenergy.com	4	

The drivers for this project were to lower thermal and power energy costs, reduce exposure to imported energy commodities, buffer against rising grid power costs and to utilize zero emissions energy. Particular emphasis was placed upon understanding the implications of CST / CSP for off-grid and fringe of grid applications and how to intelligently integrate CST / CSP with existing infrastructure in a technically and economically viable way.

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# CONCENTRATED SOLAR THERMAL PLANT - RENEWABLE ENERGY & EMISSIONS REDUCTION

## Client: **Climate Friendly**

Scope: Creation of a mass and energy balance for an industrial processing facility to determine options for the generation of process steam via a concentrated solar thermal (CST) installation rather than the use of steam raised from a coal fired boiler.

The operating capacity of the CST system and heat storage options were taken into account in order to determine the potential to reduce coal combustion. The greenhouse gas (GHG) abatement potential was estimated in keeping with the Federal Government's Emissions Reduction Fund (ERF) Industrial Electricity and Fuel Efficiency (IEFE) Methodology.

