

The Emerging Role of Thermal Energy Storage in Industrial Process Heat

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Brought to you by the Heliostat Consortium Resource, Training, and Education (RTE) topic area

BIO

Joe Coventry is a Professor in the School of Engineering at the Australian National University. He is a researcher and engineer with expertise in the field of concentrating solar power (CSP) and thermal energy storage (TES).

Prior to ANU, he was the Principal Engineer at Wizard Power, and led the engineering team and development of the Big Dish CSP technology. Professor Coventry holds a BE/BSc from the University of Melbourne (1997), and a PhD from the Australian National University (2004).

ABSTRACT

This seminar will discuss how thermal energy storage (TES) technologies can be integrated with industrial processes, with an overview of key technologies and some high-level guidance for selecting appropriate TES technology to match a process. Examples of existing TES systems will be presented.

The seminar will then explore in more detail a case study based around integration of TES into an alumina refinery, in particular in a retrofit scenario providing 1000°C hot air into a circulating fluidized bed calciner. This TES technology is based on the concept of a 'modified hot blast stove' and is under development in the Heavy Industry Low-Carbon Transition Cooperative Research Centre (HILT CRC), an Australian research program. A brief overview of the broader HILT program will be presented. Finally, some thoughts about the role of CST compared to electrified TES will be given.



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