

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
 Industry and Science Portfolio
 2015-16 Budget Estimates
 3 and 4 June 2015

AGENCY/DEPARTMENT: DEPARTMENT OF INDUSTRY AND SCIENCE

TOPIC: Scale concentrated solar thermal plants

REFERENCE: Question on Notice (Hansard, 4 June 2015, page 17)

QUESTION No.: BI-32

Senator WATERS: Thank you. Does ARENA have a program, or have you considered a program, to have demonstration scale concentrated solar thermal plants connected to the NEM?

Mr Frischknecht: Yes, we actually do have a number of projects in the pipeline to do exactly that.

Senator WATERS: Perhaps on notice, given the time, could you provide me with as much detail as you can about those plans and projects and their time frames and any effective recent policy decisions on your ability to continue that work. That would be great.

ANSWER

ARENA supports a diverse range of renewable energy technologies across the innovation chain, including concentrated solar thermal. ARENA has committed over \$150 million in funding to 50 solar thermal projects. The total value of these projects exceeds \$350 million.

The majority of these projects (42), with a total value of \$204 million (\$78 million in ARENA funding) are targeted at research and development, or at the early stages of commercial viability. These projects are being undertaken by numerous research institutions including CSIRO (17); University of South Australia (7); ANU (3); UNSW (3); Murdoch University (2); RMIT (2); The University of Adelaide (1); University of Sydney (1) Swinburne University (1); and University of Queensland (1).

A small number of projects, with a total value of \$117.5 million (\$44 million in ARENA funding) have involved 'demonstration scale' concentrated solar thermal activities. These projects are detailed below:

<u>Project Description</u>	<u>Lead Organisation</u>	<u>Timeframe for completion</u>	<u>ARENA funding</u>
Validation of performance modelling for 1.2MW solar array with high temperature receiver and integrated thermal storage.	Vast Solar	Completed	\$437,243
6MW (thermal) concentrated solar thermal system in a fully functioning pilot power generation facility, in readiness for the demonstration of full commercial scale (grid connected). Project is near Forbes, NSW.	Vast Solar	Undergoing commissioning	\$4,966,960
Kogan Creek (Qld) - installation of a 44MW concentrated solar thermal boost plant to CS Energy's existing 750MW coal-fired power station (grid connected).	CS Energy Ltd	TBD	\$34,900,000

Study into network benefits of concentrated solar thermal at constrained locations in the NEM	Austela	Completed	\$179,965
Perenjori (WA) Dispatchable Solar Thermal Power Project (feasibility study)	Abengoa	2 nd half 2015	\$449,718
Feasibility study for converting the Collinsville power station in Queensland to a 30MW hybrid solar thermal/gas power station.	Ratch Australia Corporation Ltd	Completed	\$2,150,000
Feasibility study to assess the viability of a concentrated solar thermal plant with molten-salt storage at Port Augusta SA.	Alinta Energy	April 2016	\$1,000,000
TOTAL			\$44,083,886

ARENA also has a funding agreement in place with Vast Solar for a 30MW (electrical), grid connected concentrated solar thermal system, near Forbes, NSW. The lessons learnt and experiences from the 6MW pilot project will inform the total grant amount, total cost and timeframe for this project. The project will also need to reach financial close in order to proceed.

While ARENA does not have a specific program for demonstration scale concentrated solar thermal plants connected to the National Electricity Market, applicants can apply under existing open programmes for funding to support such projects.

Solar Thermal technology and its application and integration within electricity networks is still at the research, development and demonstration phase in Australia – with the aim to significantly bring down the cost and improve utility – potentially as peaking plant or on fringe of constrained grid locations. Ongoing efforts to commercialise solar thermal technologies will require significant investment and this will inevitably be shaped by both energy policy and overall demand on the NEM.