Australian Government
Australian Renewable Energy Agency

ARENA

Media Release

11 FEBRUARY 2019

Strictly Embargoed

Distributed energy projects awarded nearly $10 million

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today awarded $9.6 million in funding to 12 projects and studies to further integrate distributed energy resources (DER) into the electricity system.

ARENA is providing $7.21 million to five pilot projects led by Zeppelin Bend, Jemena, SA Power Networks, Solar Analytics and RACV. Each project will trial novel approaches to increasing network hosting capacity with the objective of allowing the system to operate securely whilst maximising the ability of distributed energy, such as solar PV, to provide energy to the grid.

A further $2.38 million has also been allocated to seven studies led by CitiPower & Powercor, Dynamic Limits, University of Tasmania, CSIRO, Oakley Greenwood, the Australian National University and the University of Melbourne. The studies will investigate how to successfully integrate high penetrations of DER into the grid and into the energy market.

DER encompasses behind-the-meter technologies such as rooftop solar, home batteries, inverters, controllable loads both in homes and commercial and industrial facilities, electric vehicle charging points, smart appliances and systems (such as fridges, air conditioning systems, hot water heaters and pool pumps) as well as relevant enablers such as smart meters and data services.

Among the five projects funded is the Evolve project led by Zeppelin Bend, funded with the NSW Government, which will see software trialled on the NSW grid that will act as a traffic controller able to send signals to DER assets to increase or decrease their energy output to manage grid congestion.

The seven studies include an ANU study on community energy models and a CSIRO study to prepare a model of the low voltage grid for public use.

ARENA CEO Darren Miller said these 12 projects and studies will help to maximise the potential benefits of DER technologies owned by households and businesses.

ARENA media contacts:
0410 724 227
media@arena.gov.au

For more information
arena.gov.au

"Rooftop solar, batteries and other customer-related energy technologies are set to play a key role in shaping the future energy system. It is projected that up to half of all electricity could be generated by consumers within the next few decades, up from around 4% today. This is a huge change and will require innovations in software, hardware and thinking to achieve the best outcome for consumers," he said.

"ARENA is extremely excited to be funding some of the best experts in the energy sector to build network hosting capacity technology and further understand the impacts of DER and to identify, and ultimately solve, the technical limits of our electricity grid," Mr Miller said.

The funding initiative complements work that ARENA is already undertaking in the DER space, including the announcement last year of the Distributed Energy Integration Program (DEIP); an initiative that has the energy industry working together to enhance the potential of consumer owned energy resources. DEIP is a collaboration of energy peak bodies, market authorities, industry associations and consumer associations.

"We are looking at how we can make the most of of the growth in distributed energy resources as consumer choice expands and changes the way we generate and use energy," Mr Miller said.

FULL LIST OF DISTRIBUTED ENERGY RESOURCES PROJECTS AND STUDIES FUNDING RECIPIENTS

PROJECTS			
Organisation	**ARENA funding ($AUD)**	**Project Details**	**Location**
Zeppelin Bend Pty Ltd	$4.29 million	The project includes the augmentation and extension of multiple software systems in order to calculate and publish the operating envelopes and constraints that apply to individual or aggregated DER operating within the network. The project will be delivered across network businesses (Ausgrid, Essential and Endeavour Energy) integrating with multiple Virtual Power Plant operators.	NSW

ARENA media contacts:
0410 724 227
media@arena.gov.au

For more information
arena.gov.au

Jemena Electricity Networks (Vic) Ltd	$1.12 million	The project will demonstrate the use of dynamic phase switching, dynamic power compensation and grid-side battery storage technologies at two sites on Jemena and AusNet Services distribution networks, to increase DER hosting capacity.	VIC
SA Power Networks	$1.03 million	The project will co-design and implement an Application Programming Interface (API) to exchange real-time and locational data on distribution network constraints between SA Power Networks and the Virtual Power Plant being rolled out in SA by Tesla. The interface aims to allow the raising of the static 5 kW export limit applied to solar households by SA Power Networks.	SA
Solar Analytics	$491,725	Solar Analytics will work with the Australian Energy Market Operator (AEMO) and Wattwatchers to develop automated data acquisition and delivery of solar PV generation and load data when a system disturbance event occurs. The outcome is focused on voltage disturbance monitoring and simulations.	NEM wide
RACV	$272,998	The project is developing a smart electric Hot Water System prototype which allows real-time variable control of energy stored. The system integrates into a Home Energy Management System which can manage excess solar PV generation.	VIC
TOTAL $7.21 million			

ARENA media contacts:
0410 724 227
media@arena.gov.au

For more information
arena.gov.au

STUDIES			
Organisation/University	**ARENA funding ($AUD)**	**Study Details**	**Location**
CitiPower and Powercor	$164,402	The study will develop a replicable methodology for modelling options for increasing DER hosting capacity on distribution networks and assessing the costs and benefits of these, with a particular focus on the Powercor distribution network.	VIC
Dynamic Limits Pty Ltd	$292,213	A detailed feasibility study for a project to demonstrate the application of dynamic DER export and import limits at two sites on Essential Energy's distribution network, with the potential to increase the capacity of distribution networks to host DER.	NSW, SA
University of Tasmania	$527,582	The study will develop software technology for optimal scheduling of DER for provision of power system frequency stability services at least cost, within the constraints of distribution networks.	TAS
CSIRO	$485,025	Working with 10 network providers to identify a concise set (taxonomy) of low voltage network feeder types and associated models, with the aim of facilitating consistent and effective DER hosting capacity analysis by networks, researchers and other stakeholders. This study will produce low voltage power system models for public use.	National
Oakley Greenwood Pty	$207,000	The study will analyse the regulatory and economic environment for DER in	NEM wide

ARENA media contacts:
0410 724 227
media@arena.gov.au

For more information
arena.gov.au

Ltd		the NEM and internationally, with the aim of determining the optimal way to value and provide price signals for the services that DER can provide within the network and at customer sites. The study will develop an approach to facilitating the implementation of the most efficient pricing signals and market integration approaches	
ANU	$498,650	The study comprises of an analysis of community energy models, where distributed generation, storage and load are not co-located behind a single meter. It will build upon existing work and explore technical, economic, social and regulatory issues of community energy models in order to demonstrate how they can aid issues of energy quality, support DER penetration and simplify DER implementation.	ACT
University of Melbourne	$203,867	The study will develop network models from AusNet's distribution network, identifying PV hosting capacity limits using network and smart metering data. It will also produce planning recommendations and develop analytical techniques to assess network hosting capacity of solar PV on alternative feeder types.	VIC
TOTAL $2.38 million			

ARENA media contacts:
0410 724 227
media@arena.gov.au

For more information
arena.gov.au