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Finding solutions to increase DER within low voltage networks

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced \$2.6 million in funding to Luceo Energy to create a solution to overcoming challenges for distribution network service providers (DNSPs) in managing distributed energy resources (DER) within low voltage networks.

Luceo Energy, a Queensland energy data company, will develop a proof-of-concept data platform that will integrate data from various sources, as well as a network hosting capacity estimator to analyse this data. Data sources will be acquired from networks, project partners and third parties and will include network infrastructure, network connected devices such as NBN hubs, smart meter data, smart DER data such as batteries and inverters.

The project is seeking to overcome a significant visibility challenge faced by DNSPs, where they lack the ability to access and harness non-network owned sources of low voltage data in real time, leading to unreliable data that is incompatible with network management systems. This information data gap is a key barrier to DNSPs' ability to plan and dynamically manage DER within technical limits. As a result, DNSPs are unable to confidently deviate from conservative or static network hosting capacity limits.

This project will assist DNSPs to better assess DER hosting capacity at low voltage network levels and help to optimise how the network supports increasing renewable energy DER penetration in their networks. It will also inform a business case for the benefits of utilising a mix of network data solutions to improve the accuracy of network hosting capacity estimations through greater visibility, instead of costly network augmentation.

The \$5.7 million project, titled SHIELD (Synchronising Heterogeneous Information to Evaluate Limits for DNSPs) will be trialled in Queensland and New South Wales with assistance from project partners the University of Queensland, GridQube Pty Ltd, Essential Energy, Ergon Energy and Energex.

ARENA CEO Darren Miller said the project will aim to address a key issue for DNSPs and develop a proof of concept product ready to test.

"There is growing recognition that the lack of reliable, low voltage network data is limiting DER's true value for both customers and networks. It is, however, incredibly difficult to acquire, sort and integrate multiple data sets into a single source. Tackling this complex and challenging task is what makes Luceo Energy's project so innovative.

"The project could increase the value delivered by renewables by determining a 'sweet spot' between investment in data monitoring and visibility of DER to ensure that the right level of investment is applied, benefiting all key stakeholders including DNSPs, regulators and ultimately customers," he said.