



# MARCHMENT HILL

- consulting -

## ARENA: Integrating renewables into the grid stocktake project

### the challenge

The increased penetration of distributed generation technologies does not come without its challenges and risks. Network operators are faced with the challenge of balancing demand and supply across the network whilst: a) maintaining its safety, quality and reliability of supply standards and b) recovering sufficient revenue commensurate of their overall investment. Whilst investors in distributed generation are faced with barriers to entry either through the regulatory process in the development of non-network solutions, network augmentation or through the steps required in ‘testing’ the technical and operational impacts of a technology and displaying its commercial viability.

Taking into account these opportunities and challenges, ARENA wanted to develop a central repository of all projects completed, underway or in planning relating to renewable energy in distribution networks. This repository would provide market participants with the capability to share not only knowledge and experience gained across a project but also assist in the development of future projects and investment opportunities.

### what Marchment Hill did

To develop this central repository, ARENA selected Marchment Hill Consulting to research and assemble the best lessons from Australia and overseas on how network companies, regulators and others can manage increasing levels of renewables and related technologies in Australia’s electricity distribution grids. This stocktake covers the many studies, trials and pilots launched over recent years, and will be published as an open repository of information.

Marchment Hill Consulting, in partnership with VaasaETT (their overseas partner) provided ARENA with:

- A high-level stocktake of 176 projects from around the world completed, underway or planned that relate to integrating renewable energy into the distribution network.
- A criteria for including projects in the stocktake in future.
- A database of project attributes including the background, approach taken, objectives identified, results achieved, limitations experienced and unexpected lessons learnt for each project.
- A high-level summary or ‘story’ of the projects identified for users of the database.

- An assessment of the transferability of identified projects, capturing this information in the stocktake results and documenting the approach for future use in prioritisation and knowledge management.
- A summary of the results of the stocktake exercise to assist with stakeholder communication, planning and prioritisation of future activities.

The results of the stocktake can be found following the link below:

<http://www.ena.asn.au/publications/arena-stocktake-project/>

### the benefit

This stocktake has created an information sharing platform for a range of participants including (not exhaustive): network operators, industry associations, governments, technology proponents, electricity retailers, governments and academic institutions.

There are a number of key benefits derived from the development of a central repository including:

- Industry understanding of market opportunities providing for a better investment allocation
- Knowledge and experience sharing amongst stakeholders providing for collaboration or better response to barriers to entry
- Greater capacity for ARENA to assess future activities and funding opportunities.

The stocktake is now being carried forward by the Energy Networks Association (ENA) for the benefit of its members and the industry.