



ARENA Information Session

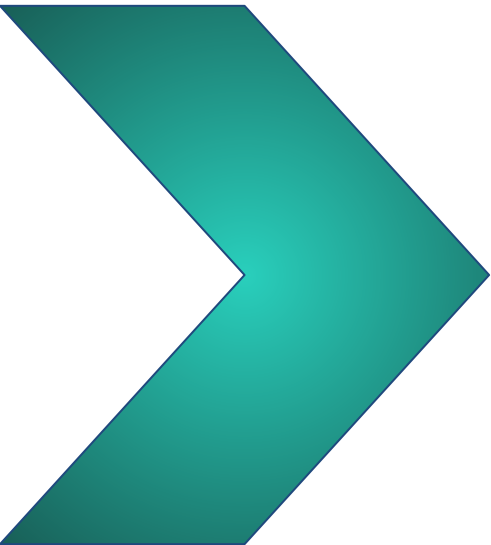
Distributed Energy Resources Funding Announcements A and B
March 2018

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Australian Government
Australian Renewable
Energy Agency

ARENA



Structure

1. Introduction and strategic context
2. Application and assessment process
3. Open Q&A



Australian Renewable Energy Agency

Independent Board works to the ARENA Act 2012
Investment & market orientated Board, CEO and CFO

PURPOSE



Accelerate Australia's
shift to a sustainable,
affordable and reliable
energy future

PORTFOLIO

\$1.14 billion funding
committed to support **over
364 projects**

172 completed projects
+161 active projects
(incl scholarships,
fellowships)

PIPELINE

\$553m funding available
to support innovative
energy technologies

75 active projects in our
pipeline

Knowledge Sharing | Collect, analyse, interpret and disseminate



INVESTMENT PRIORITIES



DELIVERING SECURE AND
RELIABLE ELECTRICITY



ACCELERATING SOLAR
PV INNOVATION



IMPROVING ENERGY
PRODUCTIVITY



EXPORTING
RENEWABLE ENERGY

Delivering Secure and Reliable Electricity

‘Investing in new ways to use, store, manage and share renewable energy to provide secure and reliable electricity’

- Distributed energy resources (DER) integration
- Large scale flexible capacity (e.g. batteries, pumped hydro)
- Grid stability (e.g. FCAS from wind farms)



What do we mean by ‘distributed energy resources’?

- DER can include consumer owned renewable and non-renewable generation, energy storage, electric vehicles and other controllable loads as well as enabling technologies (eg smart meters, inverters, device controllers and data services).
- ARENA’s focus for generators and storage is resources smaller than 5MW.
- Vast majority of DER is provided at present from customer owned rooftop solar PV
- Bloomberg New Energy Finance DER projections:
 - 19GW of small scale solar PV by 2030
 - 10GWh of behind the meter storage by 2030
- EVs future demand - unclear but potential future source of distributed demand and energy management capacity

The amount of DER that can be connected to a distribution network while the network remains within its technical limits is called its ‘hosting capacity’

‘Hosting capacity’ also applies to the power system as a whole



What are the challenges and opportunities for DER?

Challenges

- Networks and market operators have limited visibility of DER and its impacts on the grid. Reverse power flows starting to be experienced, affect networks across NEM during 2020s.
- Market to capture and trade services from DER requires development.
- Limited understanding of how customers engage with DER and incentives needed to encourage participation and optimise value.

Opportunities

- Continued appetite for rooftop PV and interest in battery storage to manage electricity costs.
- Enhanced knowledge on hosting capacity could improve network connection times, reduce costs and allow increased deployment of, and contribution by, DER.
- Ability to coordinate lots of DER - known as orchestration - could allow consumers to supply energy for use by others, help manage the electricity network and maintain the electricity system in a secure operating state.
- Orchestrating DER can help the transition to a secure and reliable grid with a high share of renewable electricity.



What do we want to achieve from these Funding Announcements?

ARENA has identified two gaps within our DER portfolio for development in 2018:



1. Demonstration projects which are focused on increasing network or system level hosting capacity



2. Studies which identify ongoing knowledge gaps for DER - including technical, regulatory, incentive structures, commercial models, retail products, coordination of aggregated DER, systems visibility, predictability or control solutions.

Hosting Capacity Projects
Funding Announcement A

DER Studies
Funding Announcement B



Scope of Funding Announcement A and B

Hosting Capacity Projects:

Demonstration projects improving hosting capacity of Distributed Energy Resources

DER Studies:

Studies contributing to improved integration of Distributed Energy Resources

Types

- | | |
|---|---|
| <ul style="list-style-type: none">● Demonstration projects● Novel technologies● Commercial models● Can be in front or behind the meter | <ul style="list-style-type: none">● Desktop analysis● Feasibility studies● Modelling techniques |
|---|---|

Purpose

Outcome needs to increase network or system hosting capacity (i.e. a grid side outcome)

Outcomes support more efficient utilisation of DER, increase their value or reduce their costs and risks in the power system

Narrow scope

Broad scope



Hosting Capacity Projects: What are we looking for?

Novel technologies, commercial models or demonstration projects that:

1. Allow distribution networks to host DER at higher levels of penetration
2. Allow market operators to manage the power system with a high share of DER while maintaining reliability and system security
3. Increase the visibility, predictability or coordination of DER for the Australian Energy Market Operator (AEMO), network service providers (NSPs) or other relevant entities to optimise power system operation within secure technical limits
4. Increase the visibility, predictability or control of network characteristics and behavior to improve the efficiency of distribution network connection processes for DER or to optimise investment.

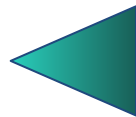
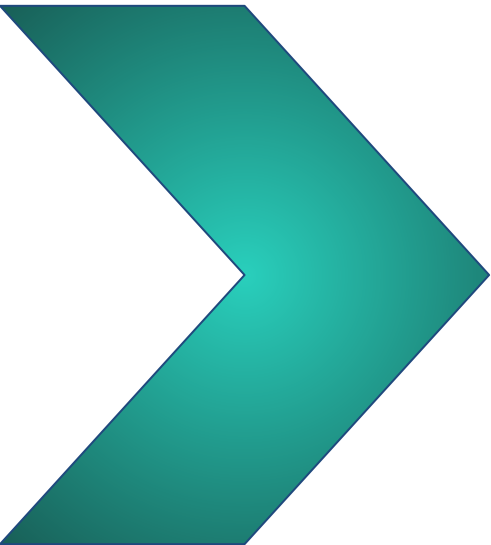


DER Studies: What sort of studies are we looking for?

Desktop analysis, feasibility studies or modelling that includes:

1. Identifies *technical capabilities* that would allow distribution networks to host higher levels of DER
2. Identifies *locational and temporal incentives* that can support higher levels of DER
3. Compares *control or coordination strategies* for DER including in the context of different locational and temporal incentive structures
4. Identifies *factors* that influence the ability to coordinate aggregations of DER, including technical, commercial, regulatory or consumer factors
5. Identifies methods to most *efficiently increase visibility, predictability or control of DER* for AEMO or other relevant entities





Agenda

1. Introduction and strategic context
2. Application and assessment process
3. Open Q&A



Background

- Proposals are funded through the Advancing Renewables Program, requirements and process is outlined in the Guidelines
<https://arena.gov.au/funding/programs/advancing-renewables-program/>
- Funding announcement provides guidance on how to demonstrate merit for each of the merit criteria in the Guidelines
arena.gov.au/der-funding
- Must submit applications via ARENANet:
<https://arenaomnistar.f1solutions.com.au/>
Select the *Distributed Energy Funding Initiative* option



Key funding announcement parameters

- All ARENA funding will be in the form of grants
- Projects are typically expected to match ARENA funding on at least 1:1 basis. Cash and in-kind contributions count towards matched funding.
- Higher cash contribution = higher merit
- Contributions from partners = higher merit
- Demonstrate need for ARENA funding beyond other government or regulatory sources
- For network hosting capacity projects:
 - strongly recommend applicants engage with one or more networks early
 - specifically address cybersecurity risks and the risk of network service performance disruptions



ARENA's assessment process

Two stage process

- Expression of Interest (limited information, less prescriptive/defined)
- Full Application (invitation only)
- Same process for both stages (Full Application more detailed and firm budget).

Eligibility Criteria

- Six eligibility criteria
- All must be met to proceed to merit assessment

Merit Criteria

- Applicants refer to funding announcement for information on how to demonstrate merit
- All 5 merit criteria equally weighted
- ARENA staff may identify obviously low merit projects and stop assessment process
- ARENA Advisory Panel will assess remaining applications against merit criteria.

Portfolio Approach

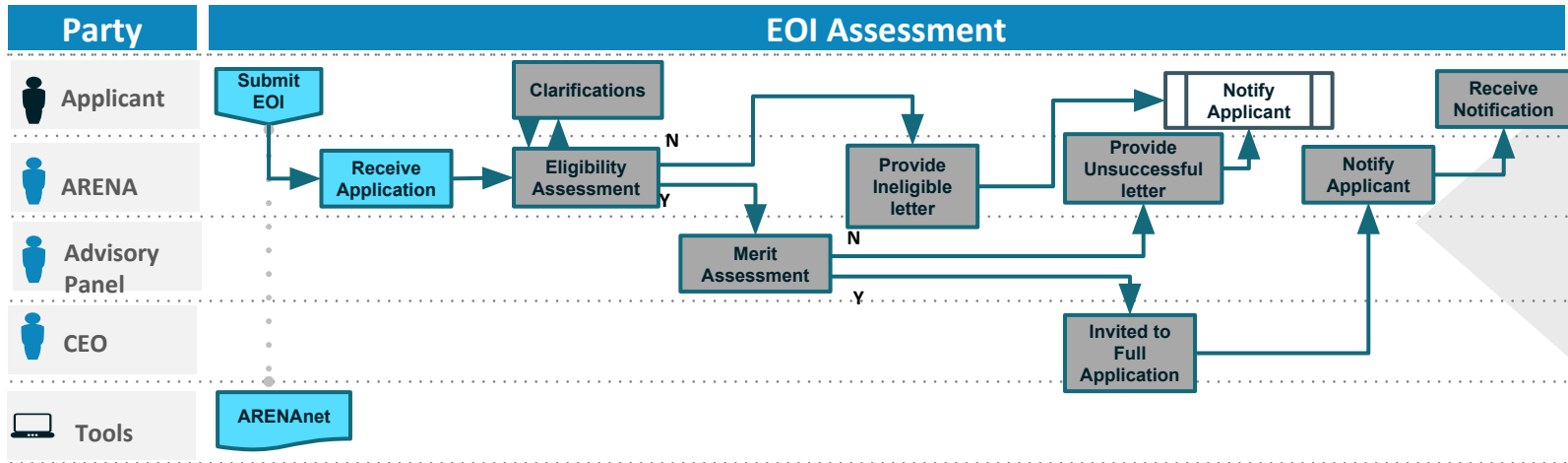
- Considers how a project uniquely contributes to the Program objectives, or as part of a suite of complementary ARENA projects
- May not fund if similar to existing ARENA project or other project under assessment

Value for money

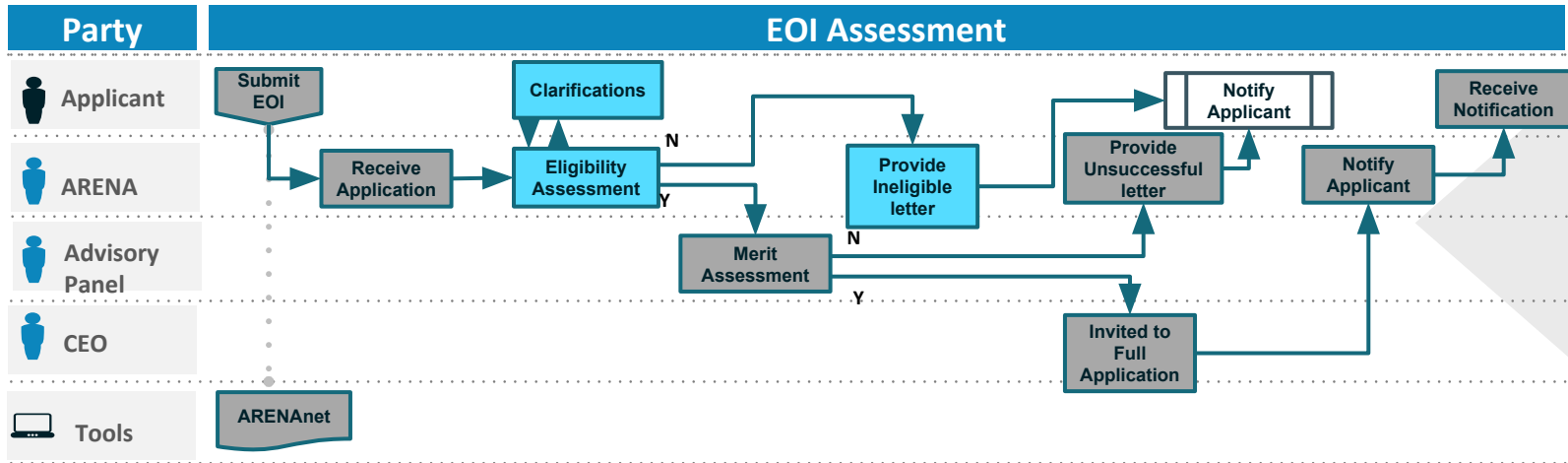
- Applications assessed for overall value for money and risk against the merit criteria



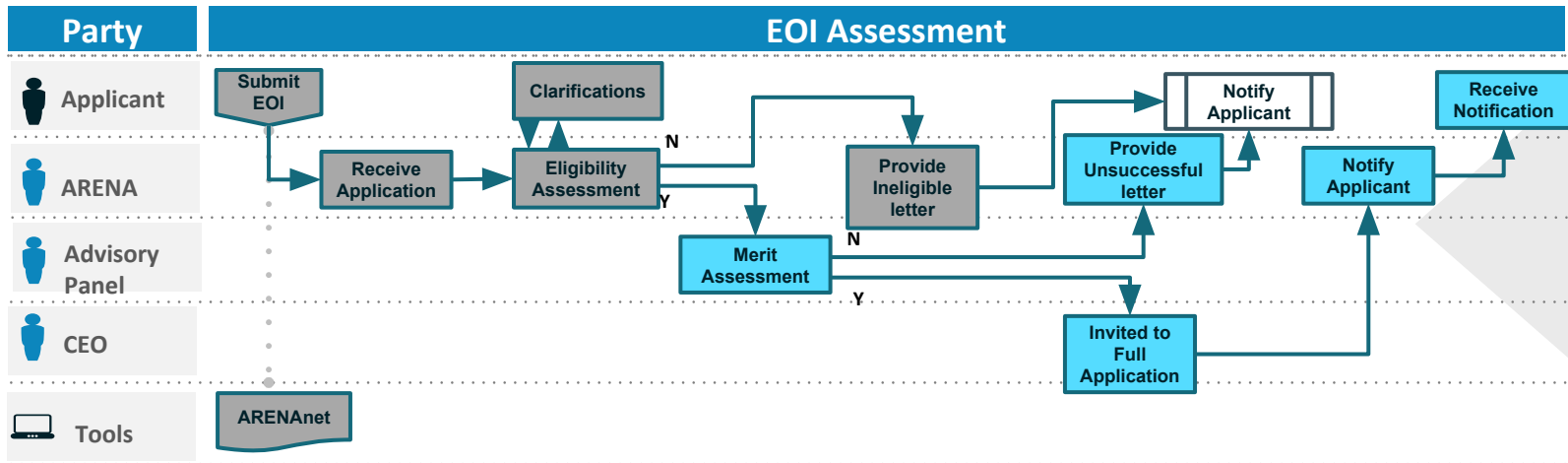
Application and Assessment Process



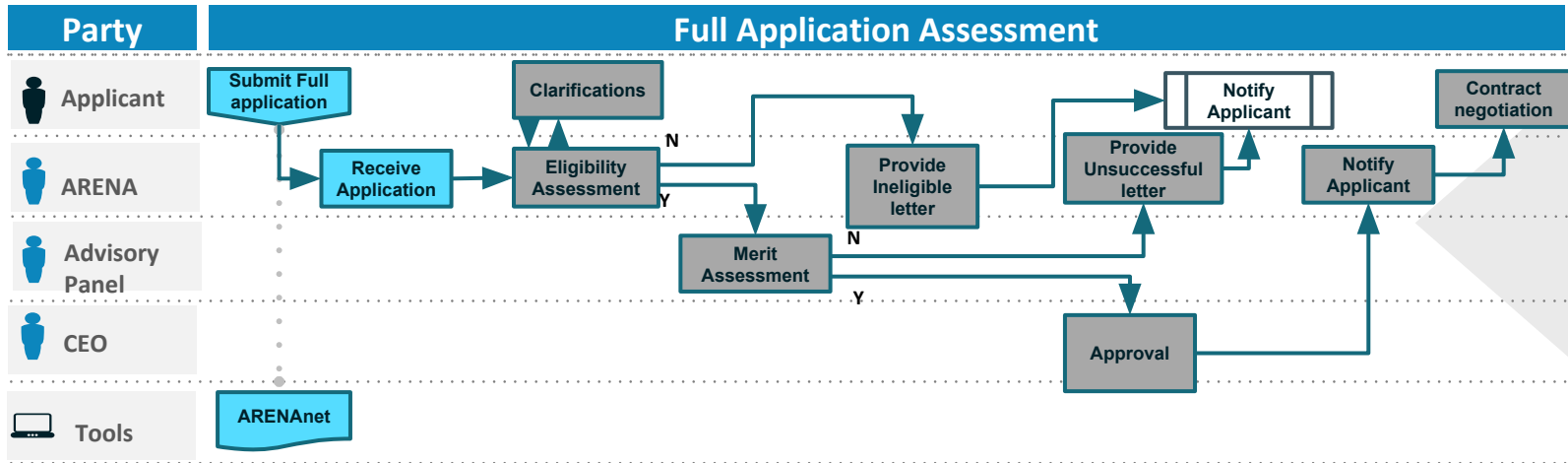
Application and Assessment Process



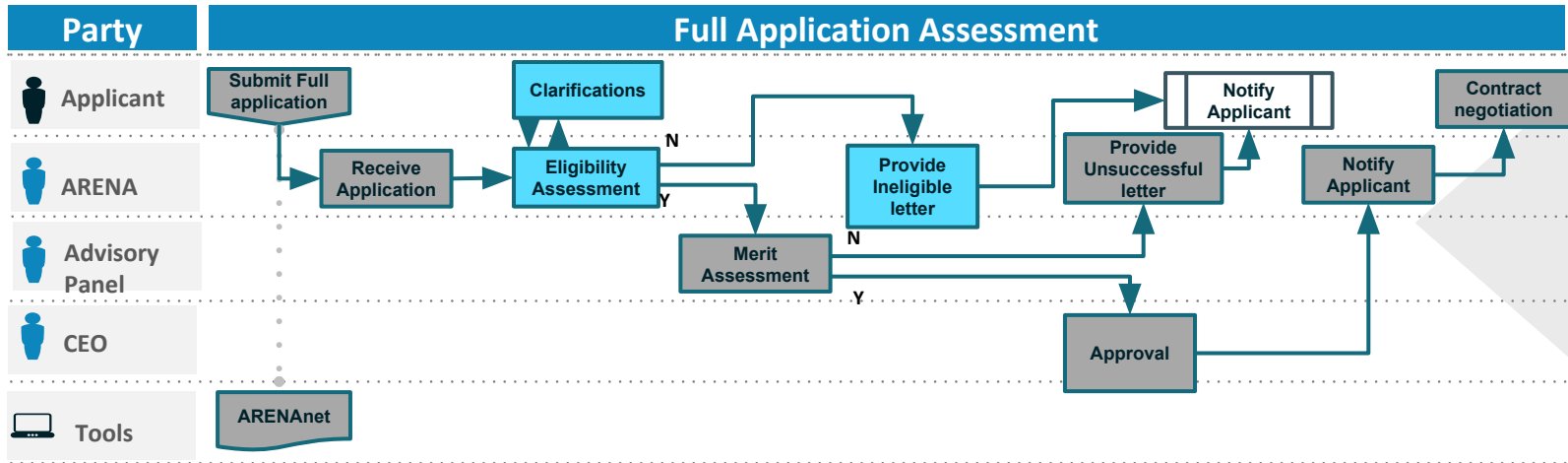
Application and Assessment Process



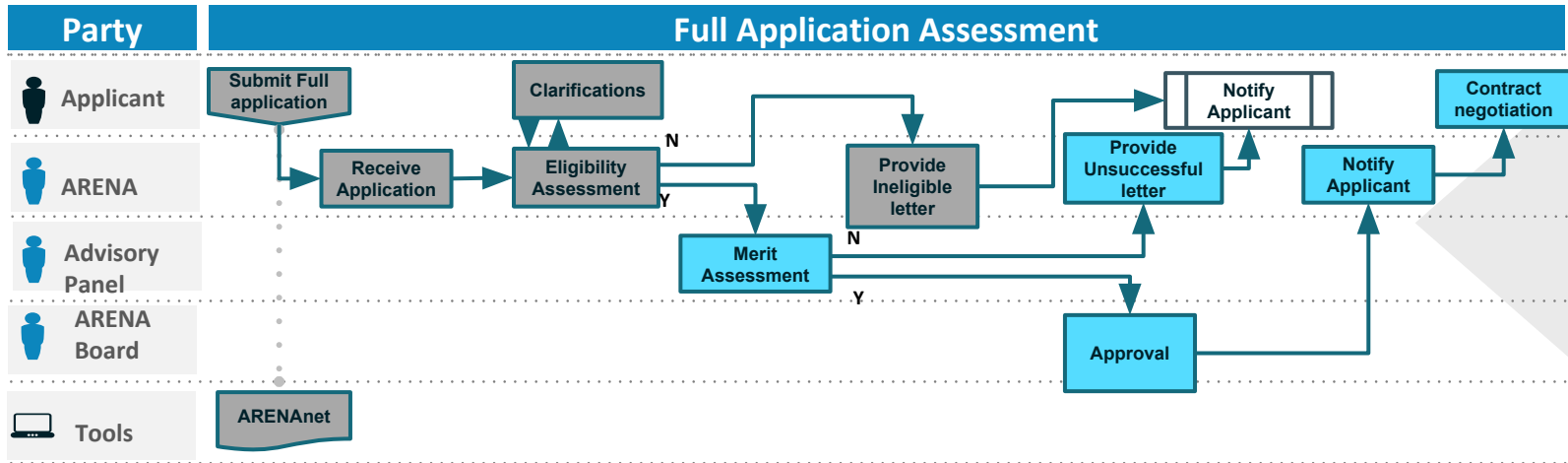
Application and Assessment Process



Application and Assessment Process



Application and Assessment Process



Eligibility Criteria

A - eligible applicant	<p>Must be an Australian entity incorporated under the Corporations Act 2001 (Cth) <u>OR</u> be a Commonwealth entity such as a Australian local government or council or Australian State or Territory owned corporation or subsidiary.</p> <p>For DER Studies: Australian research institutions are also eligible</p>
B - eligible Activity	<p>Must involve a “Renewable Energy Technology” as defined in the Guidelines and/or has potential to contribute to the Program Outcomes. Does not include research at TRL 1-3 or the training or education of students unless part of a larger activity focused on a later stage TRL.</p>
C - take place in Australia	<p>Majority of activities must take place in Australia No more that 10% of ARENA funds may be spent overseas, with exception of purchase or use of equipment and materials. ARENA will consider requests in increase this cap at EOI stage.</p>
D - knowledge sharing	<p>Must agree to publicly share knowledge about, and resulting from, the project</p>
E - intellectual property	<p>Must have ownership or access to any IP necessary to complete the project, and provide evidence to that effect at full application as necessary.</p>
F - compliance with other requirements	<p>Completeness and comprehensiveness of application against merit criteria Disclose any legal proceedings Applicant must not be named as being non-compliant with the Workplace Gender Equality Act 2012 (Cth) Accept all requirements in Part 6 of the Guidelines</p>



Merit criterion A - Contributes to Program objectives and Round priorities (EOI)

Novelty	<ul style="list-style-type: none"> How your Activity is a novel or innovative technology, technology application, commercial solution or first-of-a-kind in the Australian market 	
Potential Impact	<p><i>Hosting Capacity Projects</i></p> <ul style="list-style-type: none"> What is the potential to enable higher network hosting capacity What the potential of your proposed approach to increase the visibility of DER to AEMO or other relevant entities 	<p><i>DER Studies</i></p> <ul style="list-style-type: none"> What the potential to support more efficient utilisation of DER, increase their value or reduce their costs and risks in the power system
Path to Market	<ul style="list-style-type: none"> Outline a credible path to commercialisation or adoption of your proposed approach. Evidence of credibility could include interest from, or involvement of, one or more network companies 	<ul style="list-style-type: none"> How your proposed study supports a credible path to implementation of increased amounts of DER (through changes in practices, investment, or regulatory settings)



Merit criterion B - Applicant capability and capacity (EOI)

Capability

- Project team's (applicant and partners) track record of research excellence and/or implementation skills as relevant to the proposed Project

Capacity

- Demonstrate the applicant organisation and any partner organisations and key personnel have the resources, skill, expertise and infrastructure (or that these will be accessible or made available) to achieve the Project outcomes.
- ***For Hosting Capacity Projects:*** Applications which include collaboration with a network company may be considered higher merit.



Merit criterion B

CVs can be submitted at the Full Application stage

Merit Criterion A - Key Personnel



Please provide details for the key personnel involved with your Project, including key contacts in partner organisations that will be providing personnel, physical resources or facilities towards the Project.

Personal Details

Title	Given Name	Family Name	Position	Organisation
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Main Applicant <input type="checkbox"/> Yes <input type="text"/>

Contact Details

Phone Number	Email	Gender
<input type="text"/>	<input type="text"/>	<input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Unspecified

Qualifications and Experience

Enter qualifications and experience (100 word limit) *

100 words remaining.

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Merit criterion C - Activity design and methodology

Project design

- Technical design or methodology that will be employed to achieve the Project outcomes.
- Timeline for the Project, including milestones, stage-gates, dependencies and deliverables associated with the Project.
- Main risks to achieving the outcomes of the Project and how these risks will be mitigated (eg. risk in - technological, project planning, infrastructure and equipment access, personnel and WHS).
- ***For Hosting Capacity Projects:** Applicants should specifically address cybersecurity risks and the risk of network service performance disruptions in the Activity risks.*



Merit criterion D - Financial viability and co-funding commitment

Budget Table

- Simple budget table in ARENANet

Written Justification

- Written justification for the requested funding
- If you have received funding from any other government or regulatory sources (including under the Demand Management Incentive Scheme or Demand Management Innovation Allowance), you should demonstrate the need for additional funding from ARENA.

Check against eligible expenditure guidelines in Appendix B of the ARP Guidelines



Merit criterion E - Knowledge sharing

Knowledge sharing

- What is the value of the knowledge expected to be generated by the Activity and its contribution to industry understanding of approaches to increase hosting capacity or enable DER integration
- How well that knowledge is targeted to specific audiences
- The extent to which knowledge or data obtained through the Activity will be shared publicly (for example through the [AREMI platform](#) or [renewables integration stocktake database](#))



Other important sections of ARP Guidelines

- Part 5 - Funding Agreements
- Part 6 - Further Program Information
- Appendix B - Eligible expenditure



Timeline for application and assessment process

Key Dates	Hosting Capacity Projects	DER Studies
1 EOI open date	Thursday 15 March 2018	Thursday 15 March 2018
2 Webinar	Wednesday 21 March 2018	Wednesday 21 March 2018
3 EOI close date	Monday 7 May 2018 at 5:00pm AEST	Monday 16 April 2018 at 5:00pm AEST
4 Shortlist notified	Monday 11 June 2018	Monday 21 May 2018



Key links

Advancing Renewables Program

<https://arena.gov.au/funding/programs/advancing-renewables-program/>

ARENANet

<https://arenaomnistar.f1solutions.com.au/>

DER Network Hosting Capacity Funding Announcement

<https://arena.gov.au/der-funding>

FAQs

<https://arena.gov.au/assets/2018/03/der-faqs.pdf>



Open Q&A



Australian Government
Australian Renewable
Energy Agency

ARENA