

## Power System Services from New Sources and Technologies Funding Announcement

ARENA is seeking applications for projects focussed on the provision of power system services from innovative methods or technologies that are non-traditional sources of those services. Methods and technologies must be applicable to electricity system scenarios with high shares of renewable energy.

All applicants must submit an EOI. ARENA will assess applications for funding under its Advancing Renewables Program (ARP). This Funding Announcement should be read in conjunction with the [ARP Guidelines](#). ARENA invites organisations with projects that fit within the scope described below to lodge an EOI through the [ARENANet Grants Management System](#).

### Key Information

Activity Scope	<p>ARENA is seeking <b>demonstration projects</b> that provide a proof-of-concept of one or more power system services from new sources or technologies in the context of increasing shares of renewable energy.</p> <p>Power system services in scope include:</p> <ul style="list-style-type: none"> <li>● System strength provision or measurement;<sup>1</sup></li> <li>● Frequency Control Ancillary Services (FCAS);<sup>2</sup></li> <li>● Fast frequency response (FFR);<sup>3</sup></li> <li>● Inertia provision or inertia measurement;<sup>4</sup> and/or</li> <li>● Other services that may enhance system security.<sup>5</sup></li> </ul> <p>ARENA is targeting demonstration projects that are able to commence testing of power system services immediately or in the near future to <b>deliver results by no later than 31 December 2019</b>.</p> <p><b>Exclusions:</b> Demonstration projects which use distributed energy resources which are on the consumer side of the meter (i.e. behind-the-meter) are excluded from the scope of this funding announcement. ARENA has already completed funding initiatives for these types of projects.</p>
Funding Announcement Outcomes	<p>Projects will be considered of higher merit where they address some or all of the funding announcement outcomes described below:</p>

<sup>1</sup>System strength: A measure of the robustness of a local system's voltage for a change to the load or generation at a given location. System strength can be measured by the availability of fault current at a given location. High fault levels are generally found in a strong power system while low fault levels are representative of a weak power system.

<sup>2</sup>FCAS: Services that can be utilised to maintain grid frequency within secure operating limits by employing a raise or lower service (delivery or removal of active power from the network).

<sup>3</sup>FFR: The delivery of a rapid active power increase or decrease by generation or load in a timeframe of two seconds or less.

<sup>4</sup>Inertia: A quality of the grid that reduces the rate of change of frequency (RoCoF), traditionally supplied by synchronous generators.

<sup>5</sup>System security: The ability of the power system to be able to operate within defined technical limits ('secure operation'), and the ability to return to secure operating limits if there is an incident or disturbance, such as the loss of a major transmission line or large generator.

	<ul style="list-style-type: none"> <li>● Provide a <b>technical assessment</b> of the provision of system services from innovative methods or technologies;</li> <li>● Provide <b>economic analysis</b> of the viability of providing these system services, or examining the trade-offs for asset or power system operators in providing them vs. wholesale energy or other services;</li> <li>● Inform the design of potential future <b>markets</b> and/or <b>regulations</b> for system services; and/or</li> <li>● Improve the <b>commercial and technical readiness</b> of system services provision from new sources and technologies.</li> </ul> <p>Projects will be considered of higher merit where they address power system security issues which are currently relevant for the NEM, or anticipated to be relevant in the next 10 years:</p> <ul style="list-style-type: none"> <li>● System strength provision or measurement;</li> <li>● Frequency control ancillary services (FCAS); and</li> <li>● Fast frequency response (FFR).</li> </ul>
Timeframes	<p>EOIs will be accepted up until 5pm Australian Eastern Standard Time on <b>Tuesday 31 July 2018</b>.</p> <p>ARENA will notify applicants as to whether they have been invited to submit a Full Application within 3 to 6 weeks of receipt of EOI.</p>
EOI assessment process	<p>ARENA and AEMO representatives will be assessing EOIs. EOIs will be assessed against the Merit Criteria as specified under the ARP Guidelines and with regard to the information contained in this Funding Announcement (note: each Merit Criterion will be weighted equally).</p> <p>Only EOIs that are assessed as satisfying all the merit criteria to a high standard (or can reach a high standard by meeting and conditions imposed by ARENA) will be invited to submit a Full Application.</p> <p>Applicants should note that ARENA takes a portfolio approach to selecting Activities for funding, giving consideration to how an Activity will contribute to the Program Outcomes either uniquely or as part of a suite of complementary ARENA Activities.</p>
Funding Agreement	<p>ARENA proposes to use the template Funding Agreement which is published on the ARENA website and available at <a href="https://arena.gov.au/funding/programs/advancing-renewables-program/">https://arena.gov.au/funding/programs/advancing-renewables-program/</a></p> <p>Please note that the Funding Agreement template is subject to change; the final template version will be confirmed by ARENA.</p>
'Out of scope'	<p>As the Advancing Renewables Program is always open for submissions,</p>

or ineligible projects	high merit EOIs deemed ‘out of scope’ under this announcement may be directed to submit under normal ARP conditions. Contact <a href="mailto:proposals@arena.gov.au">proposals@arena.gov.au</a> for more information on this option.
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ARENA reserves the right to have flexibility on the processes outlined above.

## Demonstrating merit in ARENA’s grant application process

The table below provides examples to show how you can demonstrate your project or Activity meets the ARP merit criteria. Applications must clearly address each of these merit criteria. This guidance should be read alongside the [ARENANet application form](#) and [ARP Guidelines](#).

ARP merit criterion	How the criterion applies to this funding announcement
A – Contributes to the Program Outcomes (clauses 1.5, 3.3 and 3.4 of the ARP Program Guidelines)	<p>This criterion assesses how well the proposed project contributes to the ARP Program Outcomes, taking into account the investment priorities in the <a href="#">ARENA Investment Plan</a> and any relevant funding announcement documentation (<i>such as this document including the information on the preceding pages</i>).</p> <p>You can demonstrate merit against this criterion by describing:</p> <ul style="list-style-type: none"> <li>(a) how the proposed activities are a novel or innovative technology, technology application, or market, regulatory or commercial solution in the Australian market; and</li> <li>(b) how the proposed project will help support the growth of renewable energy in Australia, in particular by addressing power system requirements at lower cost or risk than alternatives.</li> </ul>
B - Applicant capability and capacity (clauses 3.5 and 3.6 of the ARP Program Guidelines)	<p>This criterion assesses your capability and capacity, as well as that of any Activity partners to, deliver the Activity. You should refer to the ARP Guidelines for further information.</p> <p>Activities which are NEM-connected, or from which learning can be directly applied to NEM operations, will be considered of higher merit.</p>
C – Activity design, methodology, risk and compliance (clauses 3 .7 and 3.8 of the ARP Program Guidelines)	<p>This criterion assesses the Activity design and implementation approach, as well as risk and compliance matters.</p> <p>Applicants are requested to specifically provide an overview of any cybersecurity risks, and their associated mitigation.</p> <p>You should refer to the ARP Guidelines for further information.</p>

<p>D – Financial viability and co-funding commitment (clauses 3.9 and 3.10 of the ARP Program Guidelines)</p>	<p>This criterion assesses your financial capacity to deliver the Activity and whether the amount of ARENA funding sought and the total cost of the Activity are appropriate. You should refer to the ARP Guidelines for further information.</p> <p>If you have received funding from any other government or regulatory sources you should demonstrate the need for additional funding from ARENA.</p>
<p>E – Knowledge sharing (clauses 3.11 and 3.12 of the ARP Program Guidelines)</p>	<p>This criterion assesses the knowledge generated by the Activity in contributing to the ARP Outcomes.</p> <p>You can demonstrate merit against this criterion by describing:</p> <ul style="list-style-type: none"> <li>(a) the value of the knowledge expected to be generated by the Activity and its contribution to industry understanding of system security services;</li> <li>(b) the types of data, including market participation, generation, accuracy and performance data, that will be made available to AEMO, ARENA and other industry stakeholders as part of the project; and</li> <li>(c) how knowledge and insights generated from your project will be shared with relevant audiences.</li> </ul>