

Research and Development Program Round 5: FAQs

Addressing solar PV end-of-life issues and lowering the cost of solar PV

Applicants

Can my organisation apply for funding?

To be eligible for funding, your organisation must hold an Australian Business Number (ABN) and be either an eligible Australian research institution or an Australian entity incorporated under the *Corporation Act 2001* (Cth).

The following Australian research institutions are eligible to apply:

- an Australian university (University);
- the Australian Nuclear Science and Technology Organisation (ANSTO);
- the Commonwealth Scientific and Industrial Research Organisation (CSIRO) including Data61;
- the Australian Institute of Marine Science (AIMS);
- the Defence Science and Technology Organisation (DSTO);
- Cooperative Research Centres (CRCs);
- the National Measurement Institute (NMI); or
- Australian Research Council (ARC) Centres of Excellence.

Can an individual submit more than one application or be a member of more than one project team?

Yes, there is no limit to the number of applications that can be submitted by an individual or a research institution. However, if you intend to be part of more than one application you must be able to justify that you will have, or be able to allocate, sufficient time to all of the applications should they be successful.

Does ARENA support collaboration between Australian universities?

ARENA encourages collaboration. This includes collaboration between universities as well as between universities, industry and international partners. ARENA may seek to facilitate collaboration between applicants with similar or complementary applications with their prior consent, but cannot assist in facilitating collaborations prior to application.

Are international research institutions eligible for funding?

International research institutions are not eligible to apply directly for funding as the main applicant. They may be a partner in a Project with Australian research institutions, universities or companies, however, the majority of the Project must take place in Australia. No more than 10% of any ARENA funds awarded to a single Project may be spent overseas - with the exception of the purchase or use of equipment and materials. Any overseas spending above this cap can only take place with prior written approval by ARENA.

Does ARENA require applicants to have an industry partner to be eligible for funding?

It is not essential to have an industry partner. Each application will be assessed on its merit

against all selection criteria. However, proposals that can identify a clear pathway to commercialisation may be considered of higher merit.

Will applications that include industry partners be considered higher merit?

ARENA will assess the capability and capacity of the lead applicant and any project partners under Merit Criterion A.. For example, ARENA will consider whether the partner or applicant has the necessary skills or expertise to contribute meaningfully to the project and whether this is appropriately reflected in cash and/or in-kind contributions (assessed under Merit Criterion D). Applications with industry partners that appear to be contributing little to the project may not be considered high merit.

Can industry partners be from overseas?

Yes. However, consistent with the eligibility criteria, no more than 10 percent of ARENA funds can be spent overseas.

Is there a limit to Ph.D. student involvement in the Project?

No. The capability and capacity of the Team conducting the Project is assessed under Merit Criterion A. Applicants should include team members and skill sets they consider appropriate to deliver the Project. The budget, including salaries, is also assessed under Merit Criterion D and the FTE allocated to each team member must be apportioned to the Project. As the maximum Project length is 2 years, Ph.D. stipends must be apportioned accordingly.

Projects

What are the priority areas of Round 5?

For a Project to be eligible for funding it must address one of the Round's priority areas, which are:

- **End-of-life:** New solutions, including improved upfront solar PV panel designs and end-of-life processing, that increase the cost-effectiveness of sustainable end-of-life management of solar PV panels.

Solutions that are not specifically addressing solar PV panel end-of-life issues are excluded. Collection of solar panels and associated logistics are excluded from ARENA funding.

- **Advanced silicon:** Improvements to the overall cost-effectiveness of silicon-based panels already in mass-market production, and their production processes.

Testing or analysis that is not part of the manufacturing process is excluded.

- **Tandem silicon:** Increasing the cost-effectiveness of silicon-based solar PV through the use of tandem materials.
- **New materials:** Development of new materials with the potential to either reach

breakthrough cost-efficiencies, or the potential for new deployment applications.

What if my Project covers more than one priority area?

Although Projects may contribute to more than priority area, Applicants are required to select only one (the most relevant) priority area to be addressed under Merit criteria B.

Will ARENA consider one priority area more favourably than another?

ARENA will be assessing each of the four Round priority areas separately meaning, for example, that “End-of-life” applications will not be assessed against “Advanced silicon” applications. However, ARENA reserves the right to split funding across the priority areas as it deems appropriate based on its merit assessment. Should ARENA find that no high merit applications are submitted against a particular Round priority, it may choose to award no funding against that priority area.

What does ARENA mean by “New materials”?

New materials refers to materials that are not yet available in mass-market production (i.e. commercial PV panels) including materials that are not silicon or tandem silicon based. New materials might disrupt existing materials by, for example, addressing new efficiency gains or addressing a new sector of the PV market. In order to be considered high merit, applicants must be able to demonstrate that the new material will enable Solar PV cost efficiencies or potential new applications. New applications must be for renewable energy purposes.

What type of Projects are eligible?

This Round is open to Projects that:

- are between Technology Readiness Level (TRL) 2-4 (inclusive) at the time of application;
- meet one of the priority areas of the round;
- involve a renewable energy technology;
- meet the definition of an R&D Project (see below); and
- are no more than 2 years in duration.

R&D includes specialised scientific and technical information services, postgraduate research, and the design, construction and testing of prototypes (pilot plants where new data is evaluated).

R&D does not include basic or blue-sky research (Technology Readiness Level (TRL) 1), the implementation of innovations (including trial production and copying of prototypes), education and training of students (except postgraduate research), maintenance of national and international standards, feasibility studies, business models or marketing and market studies.

What if my Project contains technologies that are at different TRLs?

You should consider the starting TRL of the overall Project or research activity that you are undertaking and apply this to your application rather than the individual technology(s). ARENA recognises that you may be conducting early stage research on commercial

technologies in order to make technology advancements.

Are there any specific exclusions to Projects?

Yes. In addition to the Project eligibility requirements, some priority areas have specific exclusions.

For the End-of-life priority area, solutions that are not specifically addressing solar PV panel end-of-life issues are excluded. The collection of solar panels and associated logistics are excluded from ARENA funding, however this may form part of a larger Project.

For the Advanced silicon priority area, testing or analysis that is not part of the manufacturing process is excluded.

What does cost-effectiveness mean and how can I compare my Project to current mass-market solar PV technologies?

Cost-effectiveness should take into consideration the cost of generation over the lifetime of a solar panel. This might include parameters such as the cost of manufacture, efficiency and stability in a real-world environment.

Applicants should consider how their Project aims to improve on the performance of existing, mass-market technologies by referencing the International Technology Roadmap for Photovoltaic (ITRPV), tenth edition including maturity report, October 2019. A copy of the ITRPV report is available through the ARENA website under the “Prepare your response” tab at <https://itrpv.vdma.org/>.

Should all applications reference the ITRPV Report?

No. Applicants should only reference the ITRPV to demonstrate improvements to the cost-effectiveness of solar PV panels in mass-market production. In such applications, the figures in the ITRPV Report are to be used as a benchmark or comparison. If your application is focused on increasing the uptake of solar PV through cost-effective deployment opportunities, then you do not need to reference the ITRPV Report.

Can all applications include a one-page attachment or is it only for applications referencing the ITRPV report?

Yes. All applications can include a one page attachment that includes any graphical representation, other material which assists in explaining your application. Applications referencing the ITRPV report can use this attachment to support any claims made.

How is “end-of-life” defined? Is PV panel reuse, repair and refurbishment eligible?

Yes, such activities are all eligible. “End-of-life” is defined as the period once the solar PV panel is no longer usable in its intended function and is decommissioned. This may be caused by fault, or the panel having reached its operational expiry or project expiry (i.e. decommissioning of a solar farm). In order to be considered high merit, any “end-of-life” application must demonstrate how the technology will improve the cost effectiveness of solar PV and be specifically related to the PV panel and not generic end-of-life activities.

Are there any restrictions on the start and end dates of Projects?

Yes. The maximum Project length is 2 years, with the earliest possible start date being 1 September 2020 and the latest possible end date being 1 September 2022.

Assessment Process

How do I apply for funding?

Expressions of Interest (EOIs) and full applications must be submitted using ARENA's Grants Management System (GMS). From 11 December 2019, Applicants can commence an online application by going to ARENA's online GMS, ARENANet.

Each section of the application contains instructions on what information is required and any word limits which may apply. Applicants can save their application at any time before submitting to ARENA before 5.00pm (AEDT) 26 February 2020.

How does ARENA decide which Project will receive funding?

ARENA will score and rank eligible Projects against the four merit criteria. ARENA will engage an expert panel to undertake this process. Each merit criteria will be weighted equally. The merit criteria are:

- A. The capability and capacity of the Applicant, Project partners and key Project personnel to deliver the proposed Project.
- B. The extent to which the Project will contribute to the Round objective and specific priority areas.
- C. The strength of the Project design, in terms of meeting the proposed objectives within the timeframe and budget set out in the Application.
- D. The financial viability of the Project, including the level of co-investment and evidence of commitment, both cash and in-kind, to the Project.

When will the round close for applications?

Application and assessment for the round will involve two stages: an EOI and, for those successful at the EOI stage, a full application. The opening and closing dates for each stage are:

Stage	Opening Date	Closing Date and Time
Expression of Interest (EOI)	Wednesday 11 December 2019	5.00 pm Australian Eastern Daylight Time, Wednesday 26 February 2020
Full Application	6 April 2020. ARENA will notify all Applicants in writing as to whether their EOI has been successful. The expected timeframe for preparation of a full application will be 6 weeks from the date of notification from ARENA.	

<p>Application outcome</p>	<p>Notification to Applicants as to whether their full application has been successful is expected to take place in July 2020. ARENA will advise all Applicants in writing as to the outcome of their Application.</p>
<p>Negotiation and finalisation of Funding Agreement</p>	<p>July - August 2020</p>

How long will the entire process take?

Applications will be assessed once the EOI submission period has closed. It is expected Applicants will be notified of the outcome of their assessment within 4 weeks from the closure of the EOI submission period. ARENA anticipates Applicants invited to submit a full application will then have 6 weeks to prepare their application. It is expected Applicants will be notified of the outcome of this assessment by the end of July 2020.

What is a portfolio approach?

When selecting Projects for funding ARENA may consider how a Project will contribute to the program objectives and round priority areas, or as part of a suite of complementary ARENA Projects. ARENA may elect not to fund an otherwise meritorious Project if the aims or outcomes of that Project are the same as, or similar to, the aims and outcomes of a Project that has previously been funded or is currently under assessment. ARENA’s current portfolio of Projects is listed on its website <https://arena.gov.au>.

Portfolio fit may also be a consideration in allocating funding across Round priorities. While ARENA expects to allocate funding to successful Projects in each Round priority, should Projects not be considered of sufficient merit, ARENA will allocate funding as appropriate. This may result in no funding being awarded to Projects in one or more Round priorities.

What feedback can I get on my application?

ARENA will provide feedback to Applicants who are unsuccessful at the full application stage only. Feedback on merit will not be provided at the EOI stage for unsuccessful applications.

Can ARENA provide examples of previous successful applications from past rounds?

No, ARENA does not provide sample answers or applications for any of its programs. ARENA does not have standard expectations on how questions should be answered. ARENA expects all answers to be honest, succinct, well justified and complete.

Finances

How much funding can ARENA provide to my Project?

Up to \$15 million will be invested in research Projects through this round. This amount may be varied up or down at the discretion of the ARENA Board. The following funding parameters apply:

- The expected minimum ARENA grant to a Project is \$400,000.
- The expected maximum ARENA grant to a Project is \$4 million.
- Projects seeking above \$4 million from ARENA must demonstrate exceptional merit.
- No grant greater than \$5 million will be awarded.

Where is the ARENA budget template?

The ARENA budget template can be found in the online ARENANet application form, under 'merit criterion D'.

The budget is split by Milestone payments, where the first Milestone is expected to be paid upon execution of the Funding Agreement, the second Milestone is at the midpoint of the Project, and the third Milestone is at the end of the Project.

The ARENA grant funding request should be a 50%, 30% 20% split across these Milestones. Milestone 1 will be paid upfront at the commencement of the Project. Milestones 2 and 3 will be paid in arrears and should align with those described in the Project design in Merit Criterion C. The milestone payments should generally reflect the work undertaken to complete the milestones deliverables (i.e. the work undertaken on the Project since the last milestone) and recipient and partner co-contributions should be commensurate with the allocation of ARENA funds across Milestone 2 and 3 (i.e. 100% of co-contributions should not be allocated in Milestone 3).

Is there a required level of co-investment that must be provided?

It is expected that Projects will at least match, with a combination of cash and in-kind contributions, the ARENA grant. Projects which include a commitment of funding from sources other than ARENA may be considered of higher merit. ARENA expects that proposals closer to commercialisation will provide a higher proportion of total funds.

Applicants may wish to review the funding contributions of existing ARENA R&D projects funded through previous R&D rounds for guidance, however all applications are assessed on their own merits. Project examples can be found at <https://arena.gov.au/projects> and by searching "Solar PV R&D".

Why does ARENA require co-investment?

ARENA funds Projects in order to support commercialisation outcomes over the short-, medium- and long-term. ARENA therefore expects that Project proponents should bear some of the cost and risk associated with the Project.

ARENA is seeking to fund Projects that offer high value for its contribution to the total Project cost. Projects that seek a lower proportion of ARENA funding as a share of the total

Project cost may be considered to be of higher merit. Please refer to Merit Criteria D in the R&D Program Round 5 Guidelines.

Letters of support are not required at the EOI stage but will be needed at Full Application.

Should salaries be counted as in-kind or cash contributions?

Where personnel are already engaged by the recipient prior to the commencement of the Project and have not been engaged specifically to work on the Project, this cost should be classified as an In-kind Contribution, as opposed to Cash Contributions. In addition, where an existing member of personnel is transferred to work on the Project (for all or part of the time), then the proportion of time that is spent on the Project should be classed as an In-kind Contribution.

Where personnel are (or will be) specifically hired to work on the Project, this can be classed as a Cash Contribution. The hire of personnel to work on the Project may also include the hire of existing personnel, where the duration of their existing engagement does not cover their proposed involvement in the Project. The appropriate FTE must be apportioned to the Project and must not overlap with any pre-existing role or work on other projects.

The applicant can elect to assign cash salaries from either a Cash Contribution or the ARENA grant funding request under the budget. This budget and its justification will be assessed for merit under Merit Criterion D.

Can salary on-costs be counted as contributions?

Yes. Salary on-costs can be calculated as an additional 25 percent of the salary and should be included as eligible expenditure, within the salary budget line. More information is available in the Program Guidelines under Appendix B.

Will university overheads be accepted as a contribution?

Where overheads are directly related to the Project, e.g. contract negotiation or administration costs incurred as part of the Project management, expenses should be included as eligible expenditure.

Where overheads are related to costs incurred in the normal course of business and do not relate directly to the Project, e.g. general administration costs for school or university services, these should be considered ineligible expenditure. More information is available in the Program Guidelines under Appendix B.

How will payments be made if my application is successful?

In general, a payment will be made at the start of the Project (50% of the grant value), at the midpoint of the Project (30% of the grant value) and at the end of the Project (20% of the grant value). Payment of the last two instalments will depend on the Applicant achieving their milestone activities for that period. These activities will be agreed upon during negotiation of the Funding Agreement.

Knowledge Sharing

What are ARENA's requirements for knowledge sharing?

Knowledge sharing does not include any commercially valuable information or intellectual property (IP).

For any successful applicants, ARENA support must be acknowledged in all communications material distributed by grant recipients in relation to the ARENA-funded Project. Knowledge sharing refers to lessons learnt throughout the Project, the sharing of successful stories, and creating opportunities for collaboration with the wider renewable energy sector. In some cases this may be made publically available, in others it may be restricted to a relevant audience within the specific sector.

For this Round, Knowledge Sharing is not a merit criterion. Instead, Applicants are required to agree to a Knowledge Sharing Plan which can be found on the R&D Program webpage on ARENA's website <https://arena.gov.au/funding/solar-pv-end-of-life-costs>, as an eligibility requirement.