

Energy and Resources Scheme

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The Pawsey Energy and Resources Scheme is open to the Australian energy and resources research community, providing significant amounts of compute time for meritorious research projects in the domain. The [Australian Government Science Priorities](#) provide guidance as to what qualifies as energy and resources for this scheme. Energy examples include generation, storage and distribution. Resources examples include exploration, minerals extraction and processing, ground water, and waste management. It is up to the applicant to demonstrate that they fit within the research priority areas.

Available Resources

The Energy and Resources Scheme is 20% of the available compute time on Magnus. The Energy and Resources 2020 call has a total of 58,000,000 core hours for allocation to successful projects, over the January to December 2020 period. Of this, 55,500,000 is available to the main call for applications and 2,500,000 will be set aside that can be applied for throughout the year by new project leaders that have recently become eligible for the scheme. The set aside amount reduces pro rata through the year.

Requests for this scheme must be a minimum of 250,000 core hours per project. There is no maximum limit to the amount of time that can be requested. However, partial allocations may be awarded depending on the availability and demand for allocations within the scheme.

Note that 250,000 cores hours in a year is approximately the equivalent of two 16-core workstations. Applications for such small allocations must specify why access to a supercomputer is necessary for the research, and based on the scoring criteria below such uses of the supercomputer are unlikely to be competitive against other applications who demonstrate they need the expensive interconnect. The [Nimbus Documentation](#) is better suited to single-node applications, and has a light-weight application process.

Eligibility

The project leader must be an Australian-based researcher, and hold a substantive position at higher education institute or research institute that is eligible to apply for funding via the Australian Research Council (ARC) or National Health and Medical Research Council (NHMRC), or alternatively an Australian publicly-funded research agency. A researcher undertaking a higher degree by research, or holding only an adjunct position, is not eligible to be a project leader.

There is a limit of one application per project leader for the Energy and Resources call.

The applicant (person who completes the application form) cannot be a student. Ideally, the project leader is the applicant.

Other members of the project team may be staff or students at an academic institutions or research organisation, including those located internationally as well as within Australia. The use of Pawsey Project Infrastructure is conditional on complying with relevant laws and export controls, including the [Australian Defence Trade Controls Act](#), [United National Security Council \(UNSC\) sanctions regimes](#) and the [Australian autonomous sanctions regimes](#), and [U.S. Export Controls](#).

Research projects applying to the Energy and Resources scheme must fall within the Australian Government Energy or Resources priority areas. Applicants must clearly indicate their eligibility in this regard in their application.

Assessment Criteria

Applications are assessed against the following criteria, which are also used for the Pawsey Partner call. To be competitive, particularly for larger requests, it is crucial that applications are of a high standard and address all criteria. The combined research and technical criteria have equal weighting.

Note that the research criteria are broad in scope, and it is up to you as the applicant to address these criteria in the most appropriate way. For many applicants, publications in refereed journals are the primary output and indication of past success, but for others it could be industry funding and its impact on the company, IP commercialisation, or even government funding and social impact.

Project Quality and Innovation (research criteria, 30%)

- Significance of the research
- Originality and innovative nature of the computational framework

- Advancement of knowledge through the goals of the proposed research

Investigators (research criteria, 10%)

- Research record and performance

Benefit and Impact (research criteria, 10%)

- Ability of the project to generate impactful outcomes and produce innovative economic, environmental and social benefits

Suitability (technical criteria, 15%)

- Method of parallelisation, including job packing, OpenMP, MPI
- Footprint of workflow, including wall times, memory, storage, and transfers

Scalability (technical criteria, 10%)

- Scale of workflow in terms of size and number of jobs

Usage (technical criteria, 10%)

- Appropriate track record of HPC systems
- Usage relative to previous allocations
- Current request relative to previous usage

Appropriateness of Request (technical criteria, 15%)

- Justification of size of request
- Capacity to achieve project within request

Partner Top-up Allocations

Applications to the Energy and Resources scheme that are not allocated the full request, **and** have a project leader that is eligible for the Pawsey Partner scheme but has not applied directly to that scheme, will also be considered in the Pawsey Partner scheme for the remaining resource request.

Out of Session Requests

Applications for the Energy and Resources scheme outside of the official call may be considered in exceptional cases. These applications will be subject to the normal review criteria by the Energy and Resources panel. Allocations will terminate with those of the corresponding main call. There is a cap of 1,200,000 core hours per project, reduced pro rata with months remaining of the year.

An example of an exceptional case is a newly recruited Project Leader into an eligible research institution from overseas. The decision whether to accept an out of session application rests with the Chair of the Energy and Resources panel.

Forgetting to apply or not being aware of the call for applications do not constitute exceptional cases.

Appeals Process

To maintain integrity of the independent merit allocation committee, the Pawsey Supercomputing Centre will not make adjustments to allocations made by the committee. This also includes requests for extra time for a project throughout the year.

Appeals can be made against procedural issues, but not against decisions by the reviewers, review panels or the Pawsey Executive Director. Appeals should be emailed to help@pawsey.org.au.

Application Form and Process

Applications for the Energy and Resources scheme must be submitted online via the [Pawsey Allocation Portal](#), after the call commences and before the call closes.

To ensure Pawsey has the information needed to properly assess a proposal, a researcher should ensure they:

- meet the criteria of the call to which they are applying;

- read the call text carefully and aim to address all points of consideration;
- provide clear and complete information.

More specifically, the application form requires the following information:

Merit Allocation submission requirements (Energy and Resources, Partner)

1. Summary
 - a. Title
 - b. Short description
 - c. Field of Research codes ([FOR Codes](#))
 - d. List of participants
2. Project Team
 - a. Research record
 - b. Ten best publications
 - c. Research funding information for last five years
3. Research Proposal
 - a. Research significance
 - b. Computational methodology
 - c. Supporting funding for the research (if applicable)
 - d. Resource request - calculate service units, memory and data requirements
 - e. Applications, tools and libraries required

A project should have the following defined:

- time-frame (specified start and end point);
- scientific goals;
- expected research impact;
- technical approach (including, software, hardware, tools and techniques);
- resources (people effort and expertise);
- cost (compute time and short-term storage requirements).



- When evaluating a proposal, the selection panel considers the proposer's performance in any previous compute-time awards they may have received – in terms of fulfillment of goals and use of allocated resources.
- If a researcher has under-utilised a previous merit allocation, they should include an explanation of the reason for not using the allocated time.
- Allocation of compute time on Pawsey resources remains the discretion of the Pawsey Executive Director: their decision regarding the assessment of a proposal or the allocation of compute time is final.