



NERC Policy on Access to High Performance Computing (HPC)

January 2024

Monsoon2, the Joint NERC/Met Office service

1. [Monsoon2](#) represents 7% of the Met Office Cray XC40. NERC research grant applicants/JWCRP project PIs wishing to use Monsoon2 should follow the procedure below and, following receipt of funding, refer to the Monsoon2 application procedure. You do not need to provide any costs (£) or units of use.

ARCHER2, the National Service

2. NERC scientists currently have access to the research council's national computing facility, [ARCHER2](#), a CRAY machine, housed at Edinburgh, together with a support service. The service is managed on behalf of NERC by EPSRC. NERC is currently allocated just over 20% of the total user capacity of ARCHER2, an annual allocation of **9,350,475 Compute Units (CU)**.

JASMIN, the NERC facility for environmental data analysis

3. Access to the JASMIN facility and associated support is provided free at the point of use for the majority of NERC research projects. JASMIN provides data storage that enables data sharing within projects, CPU and GPU compute clusters, and cloud computing services, with high performance data transfer from both ARCHER2 and Monsoon2. Access charges may apply to projects with particularly large requirements.
4. Supercomputing is an expensive and highly sought after commodity. NERC community access is overseen by the NERC HPC Steering Committee (SC) whose role is to perform a traceable, auditable and evidence-based allocation of NERC's share.

Management of Access

5. NERC ARCHER2 users are allocated to one of three HPC consortia, each led by a member of the academic community:
 - a. Oceanography & Shelf Seas (NOC)
 - b. Atmospheric & Polar (NCAS)
 - c. Mineral & Geophysics (UCL)
6. Consortium leaders are responsible, on an annual basis, for managing allocations awarded to each applicant by the HPC Steering Committee.

How to Apply

Strategic Research, Discovery Science, Studentships, Fellowships, Cross-Council Projects

When applying for NERC research grants which need HPC:

7. Prior to submission of the NERC research grant proposal (Je-S or TFS form) applicants requiring ARCHER2 resource must contact the relevant consortium leader (see above) to discuss their requirement, should funding be approved.



8. In general, applicants requiring JASMIN resource are not required to contact the JASMIN team in advance. However, applicants with particularly large JASMIN storage requirements should raise these at the proposal stage to ensure that requirements can be met in a timely manner, should funding be approved. For requirements that exceed 100TB data storage, applicants should contact the relevant [JASMIN Consortium Manager](#) and the JASMIN team. This is for capacity planning only and is not part of the peer review process.
9. Applicants must state on the application form that access to Research Council Facilities will be required.
 - a. On Je-S: This option is situated within the section 'Summary of Resources Required for Project' where there is an option to select 'Add New Research Facility'. Once selected, choose ARCHER2, Monsoon2, JASMIN as applicable, from the drop down list. An option to describe 'Proposed Usage' will appear. Please state in the free text box at this point if the HPC form is submitted (>500 kCU in any one year). See point 14.
 - b. On TFS: In the "Facilities" section of the submission form, applicants must indicate that access to ARCHER2, Monsoon2 and/or JASMIN will be required. Applicants should state the facility they will require and their proposed usage. Unless the amount requested is over 500kCU (for ARCHER2), agreement from the facility is not required at this stage, although it may be helpful to discuss requirements with your consortium lead (see section 4 and the [webpage](#)).
10. An estimate of the total request in Compute Units (CUs) is required for ARCHER2 only.
11. Units of use are not required for Monsoon2.
12. Costs (£) or notional costs are NOT required for use of any of the above facilities. Costs are paid centrally by NERC and the resource is provided free at the point of use for NERC funded grants.
13. For ARCHER2 only: If your request exceeds 5% of NERC's total allocation, or 500 kCU, in any one year, you should submit an application via the HPC web portal at the same time as your NERC research grant/Je-S/TFS application form, providing very strong justification for the request.

For joint/split awards, the limit of 500 kCU applies to the total for the whole project, in any one year.

Please ensure that you advise hpc@nerc.ukri.org of your >500kCU request, to allow for forwarding to the HPC Steering Committee for comment.
14. If applicants tick the box which says "Research Council Facilities are not relevant to this application" (je-S) or fail to fill in the Facilities section of the TFS form, the proposal will be submitted to NERC with the following statement: "Research Council Facilities are not relevant to this application". In this case, time on ARCHER2 or Monsoon2 or JASMIN cannot be guaranteed.
15. A brief justification for use of HPC should be included within the 'Justification of Resources' section of the research grant application.
16. It is not necessary to submit an HPC application via the web portal together with your Je-S/TFS form, unless your ARCHER2 request for any one year exceeds 500 kCU.



Following notification of receipt of an award:

17. Please apply for ARCHER2 HPC resources via the [web portal](#) (ARCHER2), and ensure you include the NERC grant reference number. The form will be presented at the next HPC SC meeting for approval of the CUs/kCUs requested in the first year of the grant, and an allocation made for year one.
18. Please request JASMIN resources via the JASMIN Projects Portal (<https://projects.jasmin.ac.uk>). This requires a JASMIN account, which can be requested via the JASMIN Accounts Portal (<https://accounts.jasmin.ac.uk/>). Further details on JASMIN access can be found at <https://jasmin.ac.uk/users/access/>.

National Capability

19. National Capability requests for ARCHER2 in excess of 500 kCU, which have not yet been through a formal NERC review process, are now subject to a review by the appropriate body, before being considered by the committee. The committee will not engage in the peer review of these applications, but will schedule the resource needs in context of the wider NERC HPC user-demand (a capacity- planning role).

All Applicants:

20. Please also refer to the Research Grants Handbook for full details of requirements.
21. Note: No funds are awarded for use of ARCHER2, Monsoon2 or JASMIN because the facilities are paid centrally by NERC and are free at the point of use.

Assessment of HPC Requests – ARCHER2 only

22. Completed new applications will be peer reviewed by the NERC HPC SC at the next of their bi-annual meetings. Resources are approved for the first year only.
23. In order to maximise use, over allocations may be made. Therefore, CU approved for the first year, or estimated for future years cannot be guaranteed.
24. For each subsequent year of usage (April-March) users must update their request by submitting a continuation request via the [web portal](#) for each grant utilising HPC by the closing date on the HPC website. These are reviewed at the annual spring meeting of the HPC SC. Users will be contacted about this via the NERC listserver.
25. The committee requires a separate continuation request for each grant, because it is important for resource allocation purposes and to help monitor outputs associated with HPC investment.
26. Please note that the HPC SC may make adjustments to the amount requested/approved or request further information/justification for the request.

Jointly Funded Awards

27. For awards funded by two or more Research Councils, the HPC allocation will be discussed by the relevant councils. In general, the HPC provision will be split in the same proportions as the funds. Assessment and allocation procedure will follow that of the major funder. If the council is not buying a share of ARCHER2, use will be charged, at partner rate, in the proportion of funding from that council in April each year.



Interruptions

28. NERC recognises that it is sometimes inevitable that research may be delayed due to unforeseen circumstances e.g. due to maternity or sick leave. The HPC SC would like to be informed of any delays to the work and/or use of HPC, in order to enable effective use of the annual allocation.

Access to ARCHER2 by Non NERC Funded Grants

29. Scientists in the NERC remit with other funding may access ARCHER2 through the NERC consortia if there is sufficient available resource. Access via international projects (eg PRACE) is managed by EPCC/EP SRC, depending on the circumstances.
30. Please see NERC Policy on Non NERC funded or International Grants for advice on other funding or EU schemes, eg ERC/Framework Programmes.
31. To reduce risk of disappointment, potential HPC users not directly funded by NERC, particularly those applying for European Union funds, should note that NERC does not expect to fund the costs of their HPC. For applications within the NERC remit, where resource is available and access is through one of the NERC consortia, partner rate can be applied (£0.20/CU, plus VAT).
32. In the case of non NERC funded awards with large and critical HPC requirements, the NERC HPC SC welcomes early discussion of HPC options.

Acknowledgement

33. NERC expects users of HPC to formally acknowledge use of ARCHER2, its predecessor ARCHER, NEXCS, Monsoon2, MONSooN, eCSE and JASMIN on all publications resulting from such use, including after a lapse of time. Please see Paragraph 271 of the Research grants and fellowships handbook and refer to the approved [HPC acknowledgement form of words](#).

Further Queries

34. Please address your more general queries to hpc@nerc.ukri.org



Change Log:

April 2010	New document
Amendments	
October 2011	
January 2012	
June 2012	Update EU advice; Clarify form requirement; Limit pa over the whole project for joint awards
August 2012	Add note re notification of interruptions
May 2014	Replace HECToR with ARCHER; general updates
June 2014	Add Monsoon2 acknowledgement
July 2014	Update for new Je-S release (Costs/units)
Sept 2014	Update for new funding schemes/procedure
Feb2015	Update costs(P2) and limit for NC review
April 2015	Update total allocation and form limit
Sept 2015	Notes about justification and overallocations
Dec 2015	Add 'state HPC form attached to JeS'; Amend NC review 17: '..not been through a formal review...'
August 2017	Update for NEXCS; Note 11 Remove RDF (units of use).
June 2018	Update paragraphs 32 - 34
August 2021	Update for ARCHER2; Remove mention of 'ARCHER' and 'NEXCS' and resource units updated from 'MAU' to 'CU'
January 2024	Updated whole policy to match new process with web portal