



NREL HPC FY26 Allocation Cycle

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Kestrel: NREL's Third-Generation Supercomputer

Dedicated to energy systems research

2,314 Intel SPR CPU
Nodes

156 NVIDIA H100
GPU Nodes

10 NVIDIA A40 Viz
Nodes

200 GB/s High-Speed
Network

56 PetaFLOPS

**#67 (CPU) and #71
(GPU) on Top500***



682 TB memory

95 PB storage

2,480 nodes

261,664 processors

>700 Users

>370 Projects

>180 HPC Codes

Warm Water Cooling,
Waste Heat Recovery

FY26 NREL HPC Allocation Cycle: Introduction

Allocations will be made on the Kestrel supercomputer for FY26.

Kestrel is designed with both CPU nodes and GPU nodes. Requests for FY26 must pay particular attention to Kestrel's architecture:

- Requests must differentiate between the CPU request and the GPU request.
- Give yourself computing time for transitioning codes and workflows to GPUs and for new projects ramping up on Kestrel.

Get your request in early.

- **If you don't already have a login, request an account now to avoid delays.**
- **You should still submit a proposal even if you are unsure of funding status.**

Please use this guide for submitting your request for computing resources for FY26: pay close attention to the following instruction and eligibility requirements.

Applications are DUE by July 24, 2025—but get your request in as early as possible.

FY26 Request Reminders

- Because **GPUs are ~70% of the computational capacity**, you will be asked for separate request amounts for CPU-node AUs and GPU-node AUs. *(AU defined on next page)*
- CPU and GPU nodes have **distinct AU factors**—calculate and plan accordingly!
 - 1 CPU node hour = 10 AUs
 - 1 GPU node hour = 100 AUs.
- With Kestrel's capacity, the allocation process may be able to consider projects that are not supported by EERE or NREL—for these projects, an **EERE mission impact statement** is required.
- Technical Readiness Reviews (TRRs) will pay particular attention to CPU/GPU needs and supporting computational readiness documentation; be responsive to the TRR team's questions!

Please provide timely responses to Technical Readiness Review team questions.

Available Computing Resources

AUs

- An allocation unit (AU) is a defined amount of compute on the system, which is scaled to be consistent between NREL systems. An “AU” on Eagle is theoretically the same amount of compute as an “AU” on Kestrel.
- On Kestrel: 1 CPU node hour = 10 AUs, and 1 GPU node hour = 100 AUs.

What is available for FY26?

Resources to be allocated on Kestrel include **320** million AUs across both CPU nodes and GPU nodes: 191 M AUs on CPU nodes, 129 M AUs on GPU nodes, and 95 Petabytes of storage.

How are resources allocated?

- 85% allocated by EERE
- 15% allocated by NREL for NREL projects.



Eligibility

What projects are eligible?

- EERE-funded projects at all national laboratories and universities
- EERE-mission impact projects supported by academia or industry, regardless of funding source, including student allocations
- NREL projects, regardless of funding source.

Projects should apply for allocations if:

1. funded,
2. a proposal is under consideration, or
3. a proposal is planned to be submitted with computing needs in FY26.

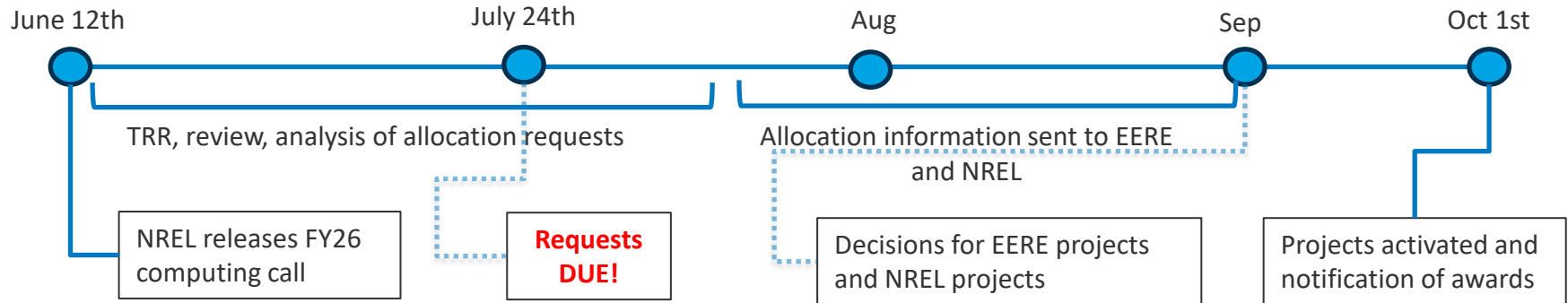
One allocation per funded project.

Do not split projects into multiple allocations, even if the project is scattered across several labs. Do not use large “umbrella allocations” to cover multiple projects.

FY26 Allocation Process Schedule

NREL is not the decision maker for EERE projects; our role is to provide EERE with the information needed to make decisions.

- A separate NREL decision-making process is in place for NREL projects.
- The allocation process is designed to be parallel to the funding process.



Request compute time now if you think you will need it! Updates and mid-year requests are possible, but in-cycle requests are easier to accommodate.

Technical Readiness Review

NREL provides a TRR of each computing request, enabling EERE decisions by providing the best possible information on the technical request. The TRR includes assessment of:

- Is the project suitable for HPC?
 - “Ideal” (uses large-scale parallelization capabilities), “Suitable” (can run effectively), or “Unsuitable” (not ready or able to run on HPC)
 - “Suitable” is an acceptable outcome to pass TRR.
- Is the project ready (if appropriate) to use GPUs?
- Is the size of the compute and storage request justified?
- Which software will be used? Is the software available?
- NREL staff will follow up with submitter if there are issues.

Please provide timely responses to Technical Readiness Review team questions.

Reminders on Submitting Requests Using Lex

Lex is the system you will use to submit your request for computing

- A project should apply for allocations if: (1) it is funded, (2) a proposal is under consideration, or (3) a proposal will be submitted during FY25 with computing needs in FY26.
- If you are updating an FY25 allocation *for which you are the lead*, there is an option to copy the information over as a starting point. You can copy an existing allocation from this year (FY25) to next year (FY26).
- We have implemented a new **pilot form**, which will streamline the allocation process for pilots (pilots are small projects needing up to 150k AUs).
- We have consolidated and simplified the allocation request forms by integrating the software request and AU calculator—making it easier for you to estimate how many AUs you need for your project.

Online Submission: Login

Go to <https://hpcprojects.nrel.gov> to prepare your submission.

NREL HPC username and password (token not required)

Log In

Log In Using Your HPC or NREL credentials

Username*

Password*

Login Admin Login

Login Instructions

i Logging in for HPC Projects

- If you already have an HPC account, please log in using your HPC credentials. If you've forgotten your password, you can [reset it](#). If your account is deactivated, you can [contact us](#) to request assistance.
- If you do not have an HPC account, please complete the [HPC User Account Request](#) form. Once your HPC account has been created, you will be able to log in here.

Links to reset password, request help, or request an account

Online Submission: Landing Page

Once logged in, you can submit an FY26 Allocation Request.

- Use the **FY25** button if you need a pilot allocation to test code right now, otherwise use **FY26**.

The screenshot shows two columns of information. The left column is for FY25 (current year) with a teal button 'Create New FY25 HPC Allocation Request'. The right column is for FY26 (next year) with a teal button 'Create New FY26 HPC Allocation Request'. The FY26 section is circled in red. Below the buttons, a note states: 'Pilot Project and Out-of-Cycle requests may be submitted any time. Pilot allocations are limited to 150,000 allocation units.'

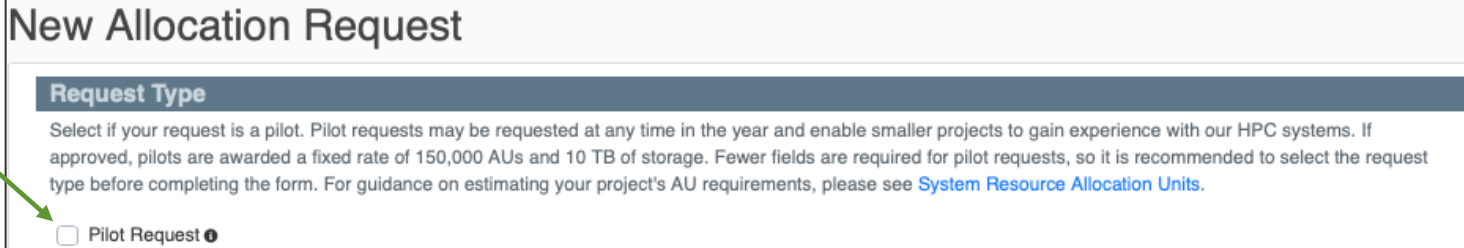
- If you are updating an **FY25** allocation *for which you are the lead*, there is an option to copy the information over as a starting point.

David is a leader of these projects:

Fiscal Year	Project Handle	Request Status	Total AUs Assigned	Total AUs Charged	Action
FY25	temporary	Active	150,000	0	View Manage Users Copy to FY25 Copy to FY26

Online Submission: Request Type

Pilot Request
(simplified form)



New Allocation Request

Request Type

Select if your request is a pilot. Pilot requests may be requested at any time in the year and enable smaller projects to gain experience with our HPC systems. If approved, pilots are awarded a fixed rate of 150,000 AUs and 10 TB of storage. Fewer fields are required for pilot requests, so it is recommended to select the request type before completing the form. For guidance on estimating your project's AU requirements, please see [System Resource Allocation Units](#).

Pilot Request

Pilot Request Option

- Smaller projects can request a pilot that is less than or equal to 150k AUs.
- Pilot-sized projects can be granted at anytime throughout the year.
- New pilot form simplifies and streamlines the allocation request form.
- Resources default to 150k AU and 10 TB storage for requested resources.

If your project is a pilot sized (less than 150k AU), use the "Pilot Request" option to streamline the process.

Online Submission: Project Information

Replace default. Avoid using the year, your name, or "HPC."

Without this title, EERE will not be able to match your request to a funded project

These are EERE focus areas for categorizing HPC use

Awards are for FY26, but do you expect this project to continue in future fiscal years?

Request Information

There is strong demand for HPC resources. All requests will be subject to technical review and prioritization based on alignment to mission priorities and technical merit. Allocations are not guaranteed.

Handle Fiscal Year

Title Word count: 5

Short Abstract Word count: 14

Abstract Word count: 7

Primary Project Focus

- Materials Science
- Integrated Energy Systems
- Fluid Dynamics
- Forecasting
- Manufacturing
- Other

 Project Focus Explanation

New/Continuing Project New/Existing Workflow

Expected Duration of Project

Keywords

Use info buttons for more information

Do you have this code and workflow up and running on Kestrel?




Use keywords similar to what you would use for a journal

Online Submission: Contact Information

HPC Lead, HPC Alternate, and PI are required.

HPC Lead and Alternate will require an NREL HPC account.

These are the people
we will contact about
HPC issues

Contacts		
HPC Lead Email 	HPC Lead First Name	HPC Lead Last Name
<input type="text"/>	<input type="text"/>	<input type="text"/>
HPC Alternate Lead Email 	HPC Alternate Lead First Name	HPC Alternate Lead Last Name
<input type="text"/>	<input type="text"/>	<input type="text"/>
PI Email 	PI First Name	PI Last Name
<input type="text"/>	<input type="text"/>	<input type="text"/>

PI may be contacted by
EERE for program
reasons

Funding Information and Project Goals

Choose Technology Area that best aligns with your research

If the funding proposal has not yet been submitted or funded, choose "Requested"

All projects must include an impact statement to show alignment with the EERE mission

Tell us where HPC fits into the overall program

Funding Information and HPC Goals

This section should provide the information needed to link the allocation to a project that is funded, under consideration, or expected to be submitted for funding. The descriptions given in "Program or Project Tasks" and "Program or Project Milestones" should provide a clear case for the use of HPC resources to complete this project.

Technology Area	Funding Source	Project Type	Funding Source Details
VTO	EERE	FOA	Needed if DOE-Other/Other used for Funding Source or Project Type

Funding Status	Funding End Date	AOP WBS/Contract #
Funded	2026-04-28	

AOP or Project Title: Allocation Tracking Word count: 2

DOE/Federal Contact:

EERE Mission Impact

Describe how this project impacts the EERE mission. Character count: 51

Program or Project Tasks

Describe in as much as detail as possible how you will use HPC resources for specific project tasks. Character count: 100

Program or Project Milestones

Describe which project milestones are explicitly linked to HPC use. Character count: 67

Most Critical Milestone

Choose Funding Source and Project Type for Allocation; use Details field if necessary

DOE/Federal Contact is required for all non-NREL projects

Online Submission: Computational Resources (Part 1)

Computational Resources & Software Requested

Requestors should take all possible care to provide an accurate estimate of the size and timing of their resource request. The size of the allocation request is estimated based on the number and length of runs given in the *Software Resources* section below. Requests for more than 1 million AUs, in particular, will need a strong *Computational Approach* and explanation of the value of the work in the *Funding Information and HPC Goals* sections. Awarded AUs will not be restricted to the software or proportions in the estimate as we understand these can vary throughout the duration of the project. Requestors should, however, provide the best possible estimate of the timing of their use of resources throughout the year (the Use Pattern), since saving unused resources for future quarters may not be possible.

Kestrel CPU Nodes: Non-integer numbers represent fractional usage of node (e.g., using 52 cores on a single node run would be represented as 0.5)

2048 Dual Socket Intel Xeon Sapphire Rapids (104 cores) and 256 GB RAM,
256 Dual Socket Intel Xeon Sapphire Rapids (104 cores), 256 GB RAM, and 1.7TB local disk
10 Dual Socket Intel Xeon Sapphire Rapids (104 cores), 2TB RAM, and 5.8TB local disk

Kestrel GPU Nodes: Non-integer numbers represent fractional usage of node (e.g., using 6 GPUs would be represented as 1.5)

132 Dual Socket AMD EPYC 9554 (128 cores), 360GB RAM, and 4x NVIDIA H100 80GB HBM3 per node

Name	Code Source	MPI	OpenMP
VASP x	Proprietary/commercial code	Yes	Yes

CPU Nodes	Run Time (hours)	# of runs	CPU Node Hours	CPU AUs
0.5	4	1000	2000.0	20000

GPU Nodes	Run Time (hours)	# of runs	GPU Node Hours	GPU AUs
.25	1	1000	250.00	25000

GPU Readiness	GPU Effort	GPU Improvement
Yes	Zero/Low	4x

Reminders and instructions for allocation process, as well as brief details regarding Kestrel node architecture

NEW: Software request used to calculate node hours and AU request

Key Points:

- Non-integers allowed for nodes and run time to represent fractional node usage (node hours and AUs auto-calculated)
- Can assign both GPU and CPU hours to software (or only one)
- Name and additional information required (additional details on later pages)
- Total for all software automatically used to populate resource request.

Online Submission: Computational Resources (Part 2)

Name	Code Source	MPI	OpenMP		
VASP	Proprietary/commercial code	Yes	Yes		
CPU Nodes	Run Time (hours)	# of runs	CPU Node Hours	CPU AUs	
0.5	4	10000	20000.0	200000	
GPU Nodes	Run Time (hours)	# of runs	GPU Node Hours	GPU AUs	
.25	1	10000	2500.00	250000	
GPU Readiness	GPU Effort	GPU Improvement			
No	Zero/Low	4x			
delete					
add					
FY	Total AUs	CPU AUs	GPU AUs	Data Storage (TB)	Use Pattern
FY26	450000	200000	250000	100	Distribute equally across 4 quart
Minimum Total AUs	Implication of Minimum AUs				
100000	This should be the minimum number of AUs the project needs to accomplish its milestones with little margin for error.				
Maximum Total AUs	Implication of Maximum AUs				
750000	This should be the ammount of AUs that will enable the project to do the best possible science, through large simulation datasets or higher fidelity results.				

Total AUs, CPU AUs, and GPU AUs are auto-calculated from ALL software entries

Min/Max total and implication are required and are used if we are unable to grant full request (or able to grant additional AUs)

Use pattern describes how you will work throughout the year (details next page)

Storage requested; justification is required if greater than 10 TB

Your Project's Usage Pattern

Avoid losing AUs!

Computing time is a resource that must be scheduled. An AU is a unit of time—as time passes, fewer AUs are available on the machine overall. We need to have some idea of how you plan to use your AUs. Here are examples:

- **Distribute equally across 4 quarters:** 25% each quarter, for ongoing projects.
- **Development in Q1, production in Q2 or later:** 10% in Q1, 30% each in Q2–Q4, designed for projects that are starting off and need time to develop their code.
- **Start in Q2:** 33% each in Q2–Q4, designed for projects with late starts.
- **Use in first half of FY:** 45% each in Q1 and Q2, 5% each in Q3 and Q4, designed for projects with mid-year end dates or early milestones.
- **Use in second half of FY:** 5% each in Q1 and Q2, 45% each in Q3 and Q4, designed for projects with mid-year start dates or late milestones.

The closer your use matches the plan, the better priority you will have and the less likely you are to lose unused AUs. Planned but unused AUs do not carry forward.

Online Submission: Computational Resources (Part 3)

Where and how will your codes run?

- **Code Source:** Is this Internal/Proprietary/Open-Source code? NREL, DOE, or Commercial?
- **MPI/OpenMP:** Does this code utilize MPI or OpenMP for parallelization?
- **GPU Readiness:** Can the code currently run on GPUs?
- **GPU Effort:** If the user has some control over the code, how hard is it to move it over to GPUs? If it is a commercial code over which you have no control, choose “impossible.”
- **GPU Improvement:** If this code can run on GPUs, what is the expected performance improvement?

Name	Code Source	MPI	OpenMP	
VASP x	Proprietary/commercial code	Yes	Yes	
CPU Nodes	Run Time (hours)	# of runs	CPU Node Hours	CPU AUs
0.5	4	1000	2000.0	20000
GPU Nodes	Run Time (hours)	# of runs	GPU Node Hours	GPU AUs
.25	1	1000	250.00	25000
GPU Readiness	GPU Effort	GPU Improvement		
Yes	Zero/Low	4x		

Computational Readiness (Part 1)

Let us know if your project supports ML/AI and how?

Required if project is using/supporting AI/ML. Be as descriptive as possible to describe your complete AI/ML workflow.

Let us know if you are using DAV nodes, and provide explanation if so

Computational Readiness

Is this project using/supporting ML/AI? (Check all that apply)

- Project uses Machine Learning/Artificial Intelligence
- Project generates data sets to be used for ML/AI
- Project involves generative AI or large language models (LLMs)
- Project develops new ML/AI methods or algorithms

ML/AI Workflow Description

Summary of your ML/AI workflow. Required if project is using/supporting ML/AI.

Character count: 79

Will this project use DAV nodes?

Yes

DAV Node Use Explanation

If you expect to use the specialized DAV (Data Analysis and Visualization) nodes please explain why and what for.

Character count: 113

Computational Readiness (Part 2)

Describe what you are doing with Kestrel and how you will use the computational resources.

Computational Approach ⓘ

Give an overall explanation (HPC centric abstract) of what you are trying to do.

EXAMPLE: In this project, we will perform a large number of simulations of various battery chemistries using the LAMPSS molecular dynamics code to build a training dataset. We will then use Tensorflow-based machine learning to model the data and attempt to predict additional chemistries that may improve durability. We will re-run processing chemistries using molecular dynamics codes.

Character count: 469

I/O Requirements ⓘ

This will be important if you expect to move large amounts of data in and out of Kestrel in a short time.

Character count: 106

Storage Request Explanation (only required if over 10 TB) ⓘ

If you need more than 10TB, explain the size of your request. Include a detailed breakout describing file(s) and sizes, and justification for storage.

Character count: 151

Other Computational Resources ⓘ

List other HPC or cloud resources that you will have access to in FY26. No need to list desktop computing.

Do you have large datasets or output files that you need to keep?

Are you applying for, or do you have access to, other resources, such as other DOE computing facilities or cloud computing?

Submitting Your Request

Before submission:

- You can save as many times as you want, so please check and recheck. **Submit only once.**
- If your project is a pilot, please check the pilot request form.

After submission:

- Your project will undergo an initial review to make sure it is complete and then a *Technical Readiness Review* to ensure it is appropriate for NREL HPC. If you are asked questions, **please respond as quickly as possible** so that NREL can submit to EERE on time.
- VTO users may be asked for follow-up to determine if the project can run on VTO's Swift cluster.
- If your project changes after you submit, email hpc-requests@nrel.gov, and we will do our best to update the request. If appropriate, we will notify EERE that the request has changed.

Allocation Decisions

Decisions on allocations will be communicated by October 1, 2025:

- Your decision may occur very close to the start of FY26, so please be patient.
- Projects that do not receive an allocation can receive a Kestrel pilot allocation of up to 150,000 AUs.
- There is ***very little room for adding AUs to projects mid-year***. If you do not believe you can complete project milestones, etc., within your allocation, talk to your project sponsor ***immediately***. If the scope of your project changes, you should ensure you have the AUs to accommodate the changes.

Mid-year Changes

New projects after allocations are decided:

- These can receive Kestrel pilot allocations of 150,000 AUs—put in a request anytime throughout the year.
- Larger requests will be considered for AUs on a “space-available” basis on the quarter boundaries.

Changes to projects during the year—email hpc-requests@nrel.gov ASAP if:

- Your project does not get funded and you no longer need the AUs.
- Your project has changed and you need fewer or more AUs.

We will do our best to accommodate mid-year requests and changes.

Closing Comments

- Get an account now if you don't already have one.
- Get your request in early; ask questions if you need help.
- Provide the best possible information concerning your request.
- Take the time to provide the best possible estimate of your computing needs, particularly your CPU and GPU needs.
- **Providing the best possible data, including how the use of HPC fits into your milestones, helps NREL and EERE plan the most effective use of the machine and makes it more likely your request will be filled.**

Please take the time to give the most accurate information possible.

More Information

- Enter your request and to get a new account: <https://hpcprojects.nrel.gov/>
- Latest version of the call: <https://www.nrel.gov/hpc/resource-allocation-requests.html>
- Learn more about the Office of Energy Efficiency and Renewable Energy: <https://www.energy.gov/eere/office-energy-efficiency-renewable-energy>
- Additional information about Kestrel: <https://www.nrel.gov/hpc/kestrel-system-configuration.html>
- Additional information about allocation units: <https://www.nrel.gov/hpc/system-resource-allocation-unit.html>
- HPC documentation: <https://nrel.github.io/HPC/>.

Thank you

www.nrel.gov

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HPC FY26 Allocation Cycle Guide

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy.

