U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

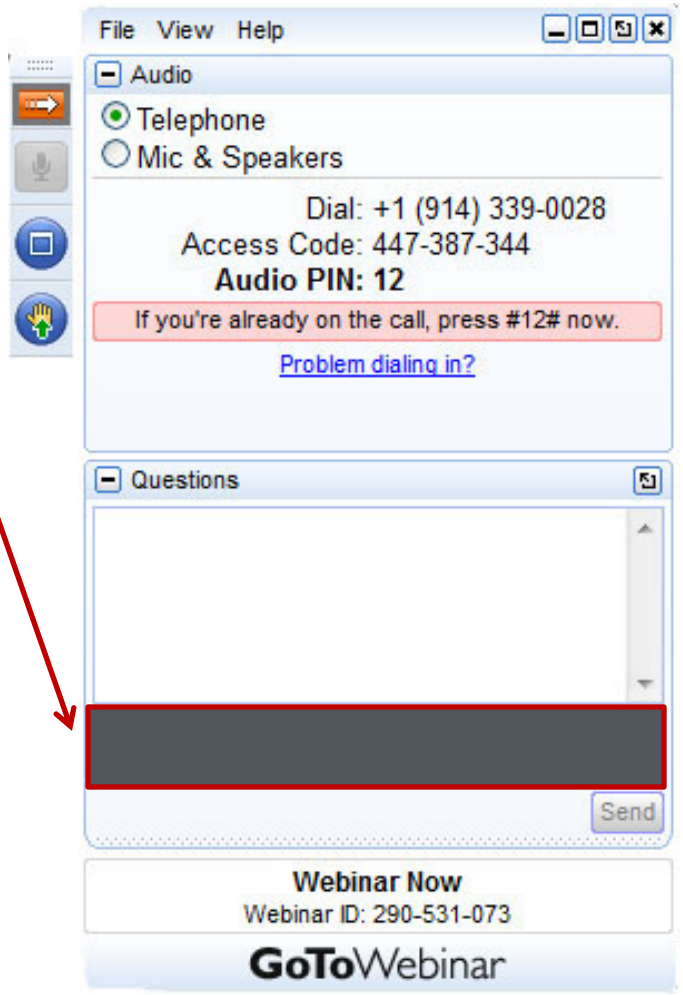
Clean. Reliable. Nuclear.

FY 2021 CINR FOA
DE-FOA-0002361

Informational Webinar
August 10 - 13, 2020

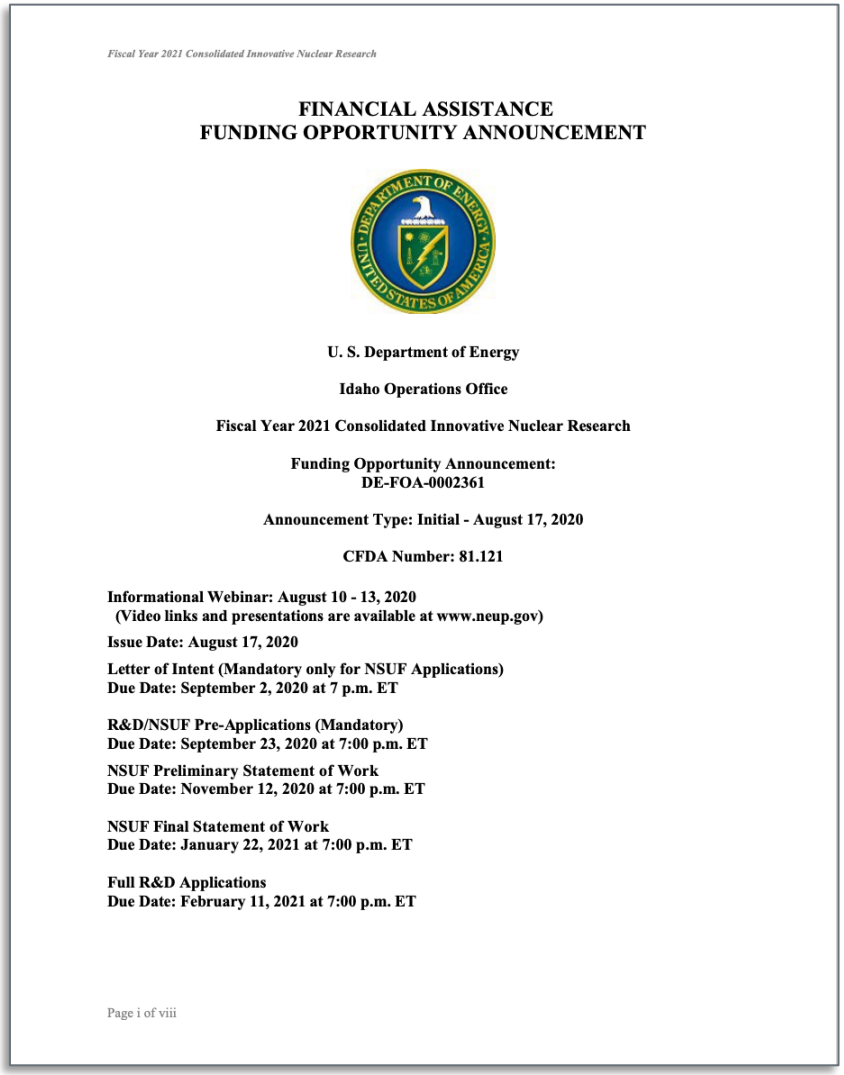
How to Ask Questions During This Webinar

- Submit questions using the GoToWebinar software by typing in the Webinar ID field.
- Questions that do not get answered during the allotted time will be answered and posted on www.NEUP.gov.
- Specific questions on individual eligibility or workscope detail should be addressed offline.



Outline

- FY 2020 Outcomes
- FOA Overview
- Policy Updates and Reminders
- Review Process, Tools, and Submissions



Fiscal Year 2021 Consolidated Innovative Nuclear Research

FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U. S. Department of Energy

Idaho Operations Office

Fiscal Year 2021 Consolidated Innovative Nuclear Research

Funding Opportunity Announcement:
DE-FOA-0002361

Announcement Type: Initial - August 17, 2020

CFDA Number: 81.121

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(Video links and presentations are available at www.neup.gov)

Issue Date: August 17, 2020

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NSUF Preliminary Statement of Work
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NSUF Final Statement of Work
Due Date: January 22, 2021 at 7:00 p.m. ET

Full R&D Applications
Due Date: February 11, 2021 at 7:00 p.m. ET

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FY 2020 Summary Outcome

- In FY 2020, DOE awarded more than $65 million in nuclear energy research, cross-cutting technology development, facility access, and infrastructure awards for 93 advanced nuclear technology projects in 28 states.

Department of Energy

Department of Energy Invests $65 Million at National Laboratories and American Universities to Advance Nuclear Technology

JUNE 18, 2020

Home » Department of Energy Invests $65 Million at National Laboratories and American Universities to Advance Nuclear Technology

WASHINGTON, D.C. – Today, the U.S. Department of Energy (DOE) announced more than $65 million in nuclear energy research, cross-cutting technology development, facility access, and infrastructure awards for 93 advanced nuclear technology projects in 28 states. The awards fall under DOE's nuclear energy programs called the Nuclear Energy University Program (NEUP), the Nuclear Energy Enabling Technologies (NEET), and the Nuclear Science User Facilities (NSUF).

"Advancing the next generation of nuclear energy is paramount to ensuring reliable, clean electricity for the American people. If we are serious about making substantial progress in reducing greenhouse gas emissions, then emissions-free nuclear energy must be a part of that conversation," said Secretary of Energy Dan Brouillette. "The Trump Administration recognizes the importance of nuclear energy, and through these 93 projects spread across 28 different states, we remain wholly committed to revitalizing our most reliable form of energy."

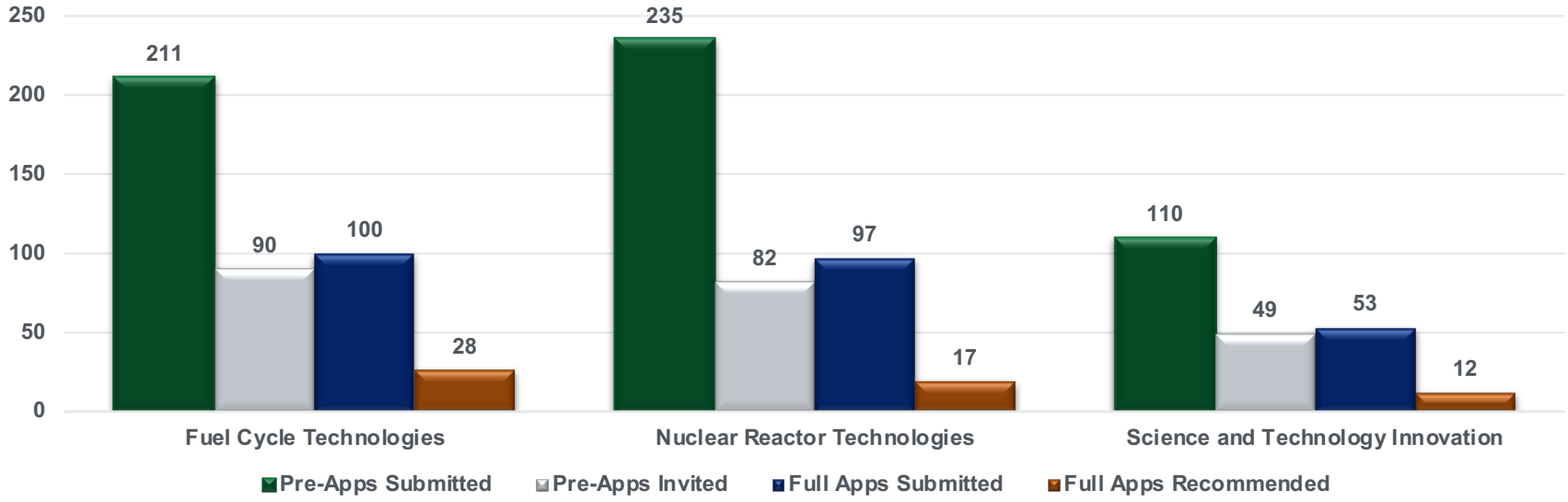
"Investments in programs like these help strengthen American leadership in nuclear innovation by

- These awards provide funding for nuclear energy-related research through the Nuclear Energy University Program (NEUP), Nuclear Science User Facilities (NSUF), and Nuclear Energy Enabling Technology (NEET) programs. With these awards, DOE's Office of Nuclear Energy has now awarded more than $800 million to continue American leadership in clean energy innovation and to train the next generation of nuclear engineers and scientists through its competitive opportunities since 2009.

FY 2020 NEUP Outcomes

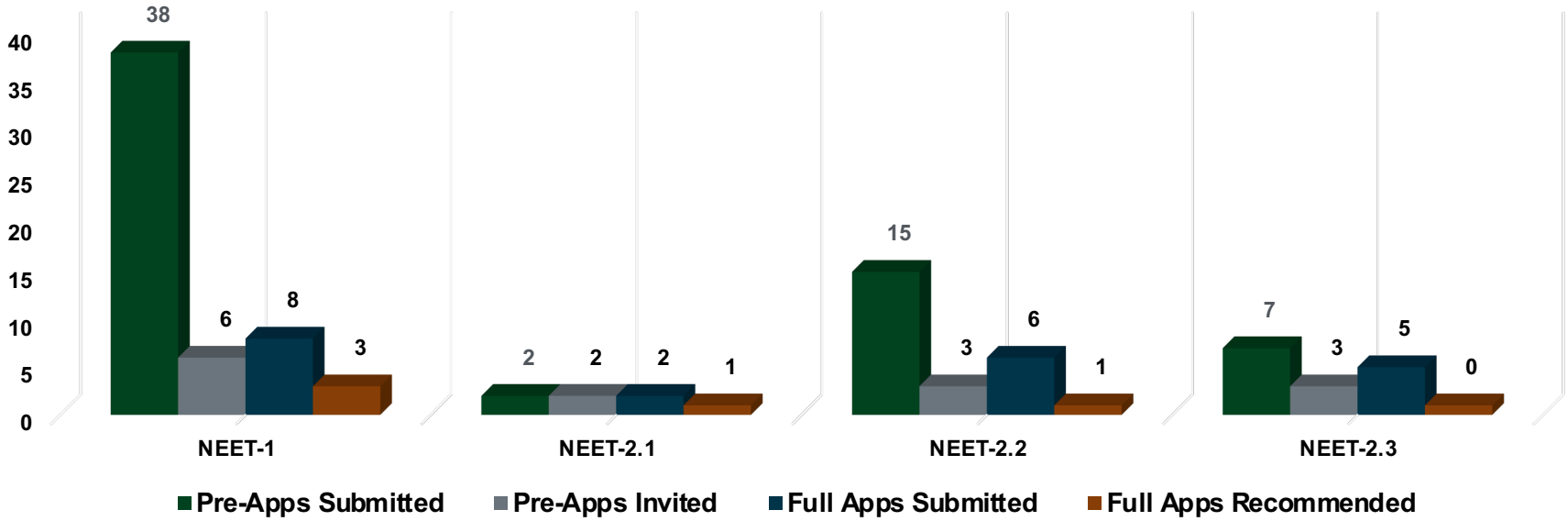
- **560** pre-applications received
- **221** applications invited
- **250** full applications received
  - 6 invited were not submitted
  - 7 submitted were dismissed
  - 35 uninvited submitted
    - 29 fully peer-reviewed
    - 1 dismissed

- **57** applications recommended
  - Includes 3 uninvited
  - 56 individual lead PIs



FY 2020 NEET Overview

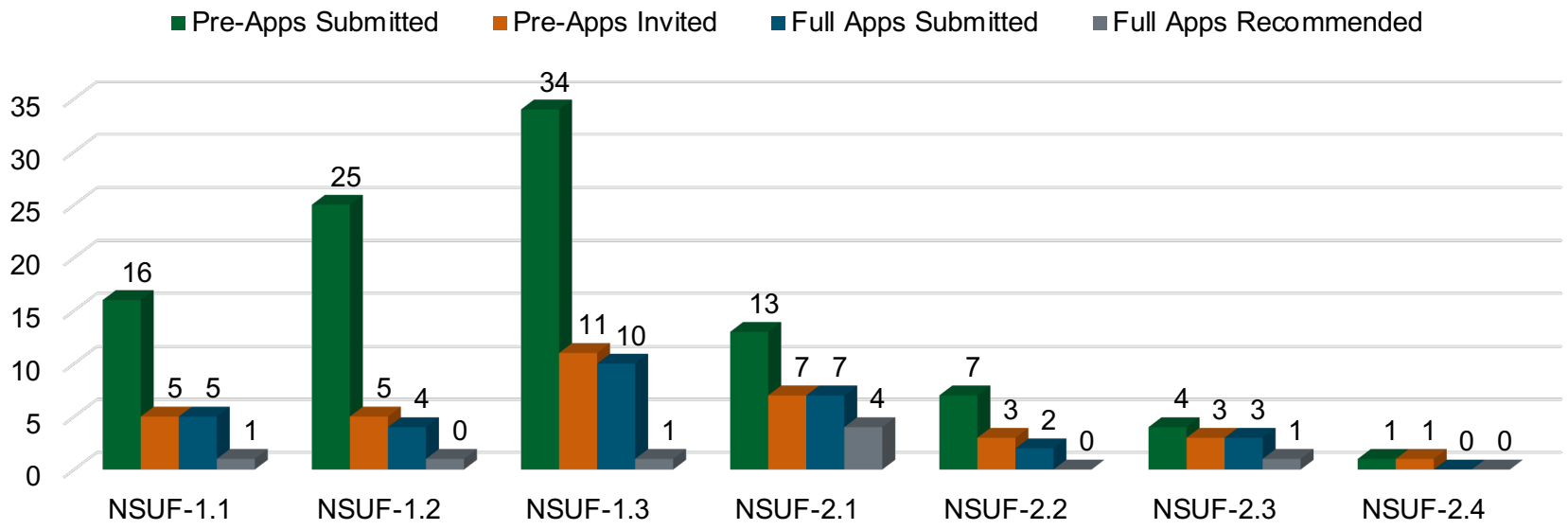
- **71** pre-applications received
- **14** invited applications
- **21** full applications received
  - 7 uninvited submitted
    - 3 fully peer-reviewed
- **5 recommended applications**
  - Includes 1 uninvited application
  - 5 individual lead PIs



NEET-1: Advanced Methods for Manufacturing
NEET-2.1: Advanced Control Systems
NEET-2.2: Big Data, Machine Learning, and Artificial Intelligence
NEET-2.3: Advanced Sensors and Communication

FY 2020 NSUF Overview

- **100** pre-applications received*
- **35** invited applications
- **31** full applications received
  - 2 were dismissed
  - 4 invited were not submitted
- **7** applications recommended
  - No uninvited applications
  - 7 individual lead PIs



NSUF-1: Nuclear Energy-Related R&D Supported By Nuclear Science User Facilities Capabilities
NSUF-2: Nuclear Science User Facilities Access Only

*Includes pre-applications for the late-stage NSUF call.

FY 2021 CINR FOA Objectives and Priorities

- DOE NE mission is to advance U.S. nuclear power in order to meet the nation's energy needs by:

  1) Enhancing the long-term viability and competitiveness of the existing U.S. reactor fleet;
  2) Developing an advanced reactor pipeline, and,
  3) Implementing and maintaining the national strategic fuel cycle and supply chain infrastructure.

- All applications submitted under this FOA will need to demonstrate a strong tie to at least one of these three priorities.

- NE conducts crosscutting nuclear energy research and development (R&D) and associated infrastructure support activities to develop innovative technologies that offer the promise of dramatically improved performance for its mission needs as stated above, while maximizing the impact of DOE resources.

FOA Highlights

- **Funding Mechanism**
  - Universities: Cooperative Agreements issued by DOE
  - National laboratories: Work Authorizations managed by DOE
  - Industry: Cooperative Agreements issued by DOE
  - Nuclear Science User Facilities (NSUF) Access: NSUF User Agreement
- **Collaborative Opportunity**
  - NSUF (requires signed user agreement)
    - applications for CINR R&D support and NSUF access
    - applications for NSUF access only
- **Eligibility Requirements**
  - ensure R&D is delivered on time to support programmatic missions
  - encourage diverse participation
  - based on performance (no-cost extensions) and project load
- **Official FOA (DE-FOA-0002361)** at http://www.grants.gov
- **Apply through** http://www.NEUP.gov

FY21 Important Due Dates

- FOA release (pending): Aug 2020
- **NSUF LOI's: Sept 9, 2020**
- R&D/NSUF pre-applications: Sept 23, 2020
- NSUF preliminary SOW: Nov 12, 2020
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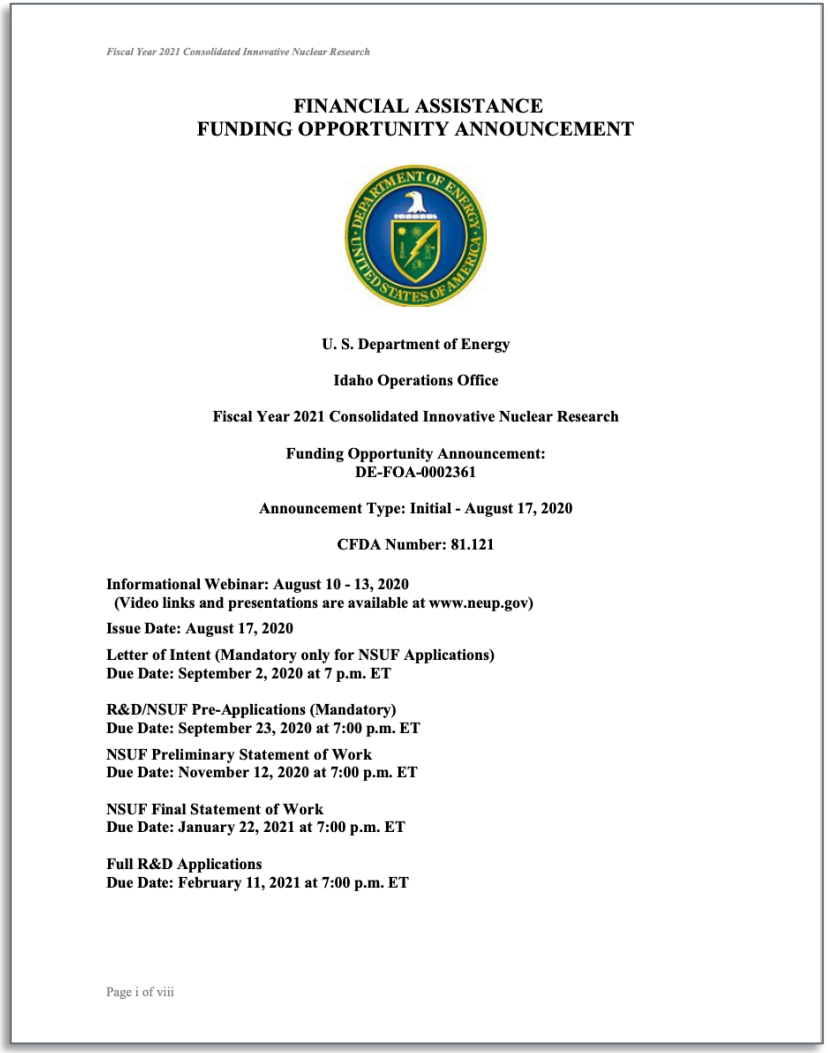

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FOA Organization

University-led R&D (NEUP and NSUF workscopes):

- Appendix A
  - Program Supporting
  - Mission Supporting

University-, National Laboratory-, or Industry-led R&D (NEET, NSUF workscopes):

- Appendix B
  - Program Supporting
  - Industry may only lead on NSUF workscopes

Research Elements

- **Program Supporting**
  - supports NE programs
  - defined by, and focused on, the statement of objectives developed by responsible programs

- **Mission Supporting**
  - must support NE mission
  - includes research in fields or disciplines of nuclear science and engineering that are relevant to NE's mission but may not fully align with the specific initiatives and programs as described in Program Supporting objectives

University-led R&D: Appendix A

- **Award Size**
  - Program Supporting: up to $800,000
  - Mission Supporting: up to $400,000
- **Period of Performance**
  - up to three years
- **Eligibility**
  - only universities are eligible to lead
  - universities, national laboratories, and industry are eligible to collaborate
- **Estimated Funding Level**
  - approximately $40 million, totaling approximately 40 awards

University-, National Laboratory-, or Industry-led: Appendix B

- **Award Size**
  - Program Supporting NEET: up to $1,000,000
  - NSUF workscopes: $500,000 for R&D request, up to $4 M for irradiation/PIE, $1.5 M for irradiation, or $750,000 for beamline or PIE access request
- **Period of Performance**
  - Up to 3 yrs; up to 7 if irradiation and PIE are proposed in NSUF workscopes
- **Eligibility**
  - NSUF-1 and NSUF-2 applications are open to universities, national laboratories, and industry to lead or collaborate except for NSUF-2.1, which can only be led by industry.
- **Estimated number of awards**
  - Approximately $3 million in NEET and NEET supported workscopes, with up to $4 million for NSUF Access (totaling approximately 7 awards)

Lead Institution Participation Summary

- **Appendix A:** U.S. Universities Only

- **Appendix B:** U.S. Universities, National Laboratories, Industry
  - applications may request R&D support
  - applications may request CINR sponsored R&D with NSUF sponsored access in applicable workscopes

    - OR -
  - applicants may request NSUF access only

Technical Narrative Application Page Limits

- **Appendix A and B**
  - two page Letter of Intent (LOI) for applications requesting NSUF access
  - up to three page pre-application
  - up to 10-page full application for applications requesting R&D support
  - up to 15-page full application for applications requesting R&D support and NSUF access

Collaboration Guidance

- To enhance and diversify DOE's research portfolio, additional consideration is given for collaborations with minority-serving institutions (MSIs), underrepresented groups (URGs), industry, and international collaborations (U.S. funding is not provided to international collaborators).
- For university-led applications (except for workscopes under Appendix B), non-university collaborators in composite can account for no more than 20% of the total funds provided by the government.
- Applications with international collaborators should be developed such that they stand on their own, and do not require the collaboration for execution or success.
- Funding is for U.S. institutions only.
  - International organizations are encouraged to collaborate as long as they are neither a denied party nor a party requiring an export license.
  - U.S. funding will not be provided to international collaborators.

MSI, URG, and Diverse Partnerships: Criteria and Contribution

- The degree to which MSIs, international and/or industry partners, and/or URGs, if any, contribute to the applicant's ability to support the relevant program element or overall NE mission
  - MSI is attributed at the institution level and valued by a listing maintained by the Department of Education.
  - URG is attributed at the individual level and based on voluntary self-identification.
  - National laboratories are not considered for the purposes of diverse partnerships.
- Collaborations are evaluated as part of relevancy.
- Collaborations are not required to achieve the highest relevancy score.

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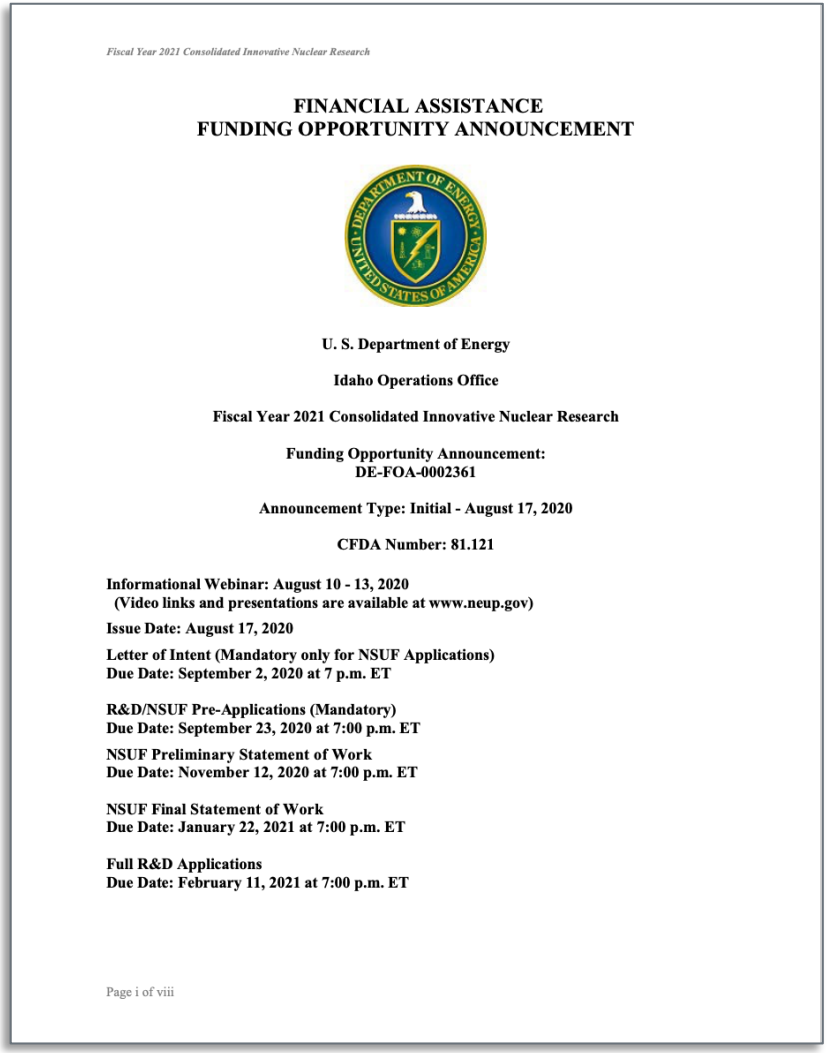

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Policy Updates and Reminders

- Font sizing applies to all pages of the document and includes references and tables. Graphic elements may have axis labels or legends in a lesser (but legible) font.
- Due to the COVID-19 pandemic, FY 2016-FY 2019 active projects will not be counted toward eligibility restrictions.
- For NSUF applications, NSUF Technical Leads and instrument scientists **should be** listed as collaborators.
- Lead applicants must have an account at www.neup.gov
- The application must be submitted by the same institution as the lead applicant

Policy Updates and Reminders

- CINR reviews are no longer performed in a semi-blind format.
- **All CINR** applications must include a list of publications resulting from previous CINR supported projects.
- NSUF-2 applications may be led by university, national laboratory or industry applicants.
- Applicants are required to obtain a DUNS number (http://fedgov.dnb.com/webform), and register with the SAM website (http://www.sam.gov/).
- NSUF applicants are required to affirm their ability to accept the NSUF User Agreement on submission of LOI, pre-app, and full app. Must be signed within 30 days of receipt.
- For NSUF pre-applications a separate section describing readiness is required.
- NSUF SOW's are uploaded to NEUP.gov.
- SOWs are not considered a 'review document'.

Policy Updates and Reminders Continued

- PIs and collaborators are considered final when the pre-application is submitted (extenuating circumstances will be addressed as needed).

- The PI is responsible for selection of appropriate workscope.
  - Full applications must be competed in the workscope to which the pre-applications were submitted.
  - Applications may only be competed in a single workscope area.

- For review purposes, conflict of interest restrictions, if necessary, will be attributed to the individual, not the institution.

- Applicants are responsible for not exceeding submission limits.

Policy Updates and Reminders Continued

- Materials required by the FOA must be submitted by the published deadlines. Any material received after these dates may not be considered.
- Uninvited applications may be submitted as full applications per the stipulations of the FOA.
- Uninvited applications associated with NSUF submissions may not be submitted as full applications due to the expense associated with feasibility assessments.
- U.S. funding may not be provided to international institutions.
- For university-led applications (except for workscopes under Appendix B), non-university collaborators in composite can have no more than 20% of the total funds provided by the government.

Policy Updates and Reminders Continued

- **Pre-Award Costs:** Recipients may charge allowable costs to an award 90 days immediately preceding the effective award date. Recipients must obtain the prior approval of the DOE Contracting Officer for any pre-award costs greater than 90 days. Recipients are responsible for pre-award costs if award negotiations are not successful.

- ***DO NOT LOCK CELLS IN BUDGET SPREADSHEETS***. Applications with locked cells may be disregarded without further review.

Project or PI Transfer

- Applications submitted to this FOA will be awarded to the applicant institution listed and will not be transferred pre-award to another if a lead PI changes institutions. *An application is considered 'submitted' once the pre-application is submitted.*

- PIs that are moving from one institution to another during and/or after the CINR review process are subject to the DOE's PI Move/Change Policy which is explained at www.NEUP.gov.

- Awards in this FOA are made to the applying institution and will remain at that institution for the entirety of the project.

- Any additional changes to partners/collaborators must be approved by the DOE contracting officer.

Collaborators

CINR Definition of a Collaborator:

- Individual making a defined, material contribution critical to the success of the project and/or contributing to joint publications.
- Individual appearing in the project summary, technical narrative, benefit of collaboration, coordination and management plan, or budget documents should be listed directly on the application form.
- Individuals not meeting these criteria should not be listed as collaborators on the application.
- NSUF Technical Leads ***should be listed*** as collaborators to facilitate management of COI

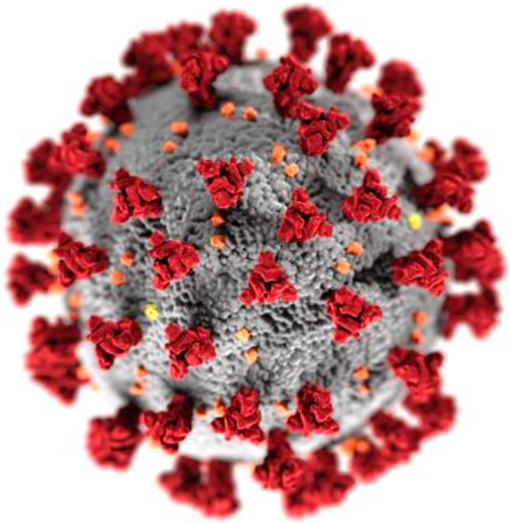
Collaborators Continued

PI must certify that all collaborators are listed on the application form and have agreed to participate on the project.

- You MUST list all individuals involved in the project, including those at your own institution on the application form.
- If you do not list all collaborators, your application may be dismissed.
- Policy Drivers
  - Must be able to identify all individuals involved in the project for conflict of interest purposes.
  - Must verify that all individuals listed on the application are aware and agree to obligations outlined in the project proposal.

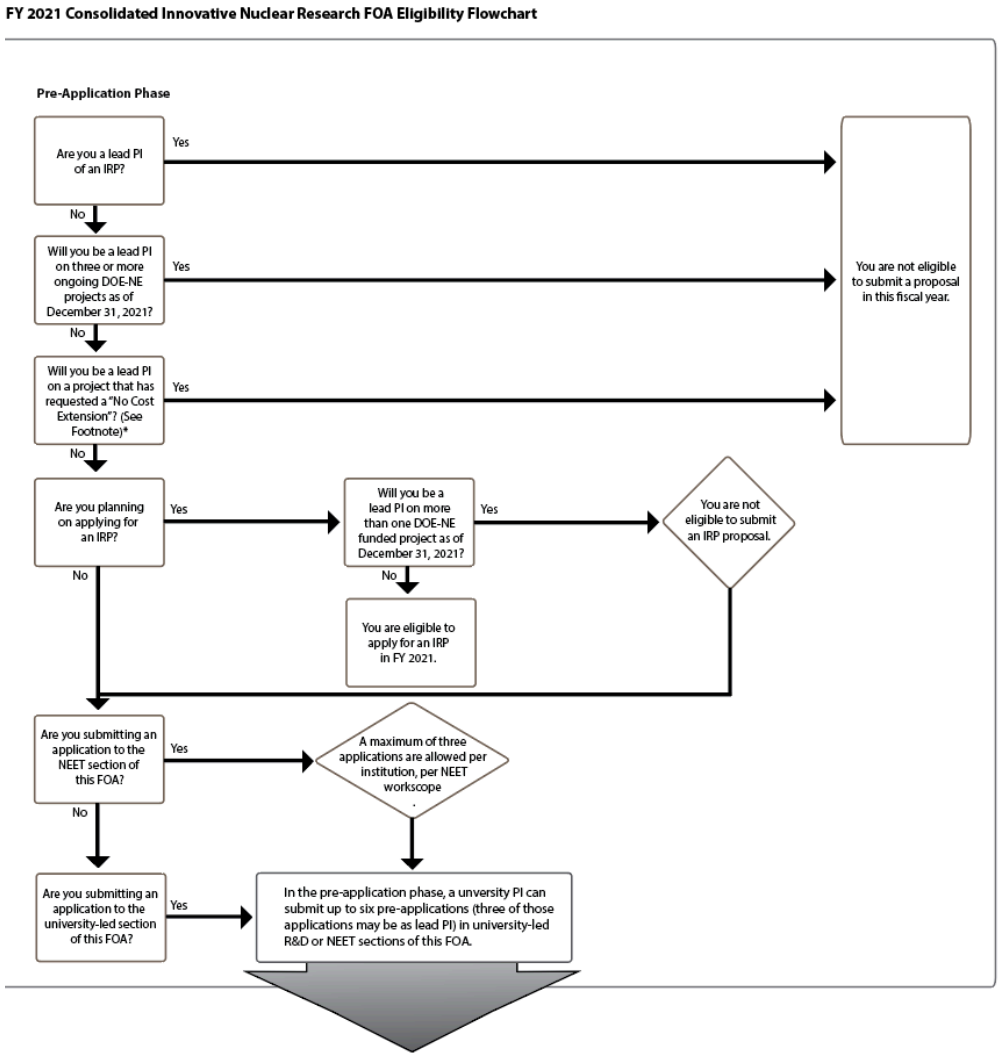
Submittal Guidelines & Eligibility

SPECIAL NOTE



Due to the COVID-19 pandemic, FY 2016-FY 2019 active projects *will not be counted* toward eligibility restrictions.

Submittal Guidelines & Eligibility

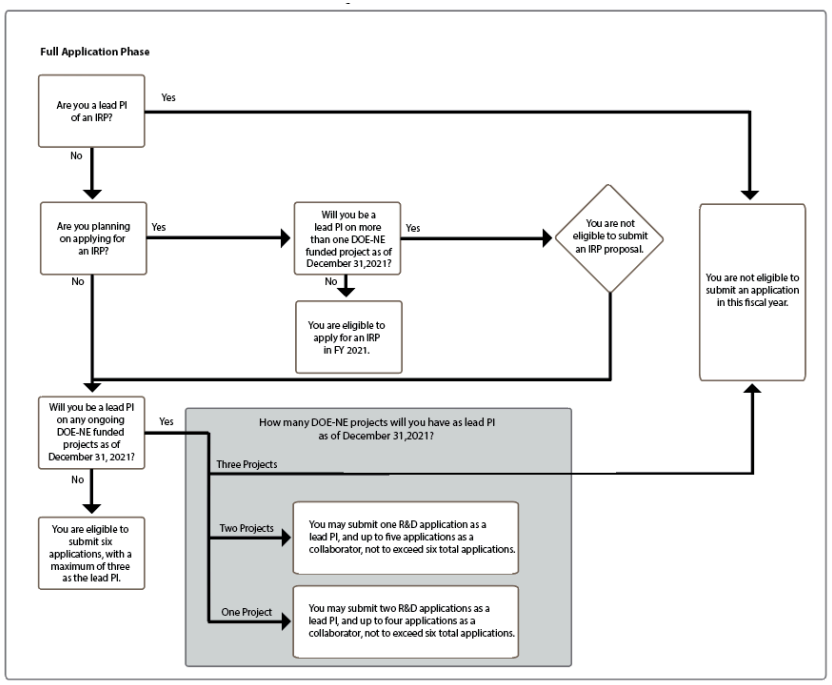


- The following applicants are ineligible to apply to any area of this FOA as a lead PI if:
  - The PI has a currently funded IRP that will be active after December 31, 2021.
  - The PI has three or more R&D projects that will still be active after December 31, 2021 excluding NSUF-2 projects and any NSUF project with a duration greater than 3 years.
  - The PI has a no-cost extension on any DOE-NE funded project (excluding Infrastructure) that will still be active beyond December 31, 2021 excluding extensions caused by NSUF.

- Pre-application submittal limits: University PIs can be included on no more than six pre-applications total, with no more than three of those submissions as the PI.

Submittal Guidelines & Eligibility Continued

- Full application submittal limit: A university PI may have no more than one IRP, or 3 active R&D projects at any time and may not submit more full applications than allowed should the applications be selected for funding. *NSUF access only and NSUF projects that last more than three years are excluded.*
- Appendix B applicants are limited to 3 applications per institution per workscope area.
- Existing NCE's that will end before December 31, 2021 are not subject to this restriction. NCE requests for projects ending in FY 2021 must be submitted by April 15, 2021.



* Due to the COVID-19 pandemic, FY 2016-2019 active projects do not count toward the totals outlined in these eligibility restrictions.

Submittal Guidelines & Eligibility Cont.

- **NEET-CTD funded research:**
  - Universities, National Laboratories, and industry are limited to three pre-applications per institution per workscope area.
  - For university PIs, these submissions count toward the pre-application limits.
- **NSUF access only applications are exempt from eligibility restrictions.**

Cost Sharing

- For applications led by universities, cost sharing is permitted but not required.
- For applications led by entities other than universities or FFRDCs, a cost share of at least 20% of total allowable costs is required.
  - The sum of the government share, including FFRDC contractor costs (if applicable), and the recipient share of allowable costs equals the total allowable costs of the project. These must come from non-federal sources unless otherwise allowed by law.
- Cost sharing requirements do not apply to the value of NSUF access.
- ***Cost sharing is not an evaluated criteria.***

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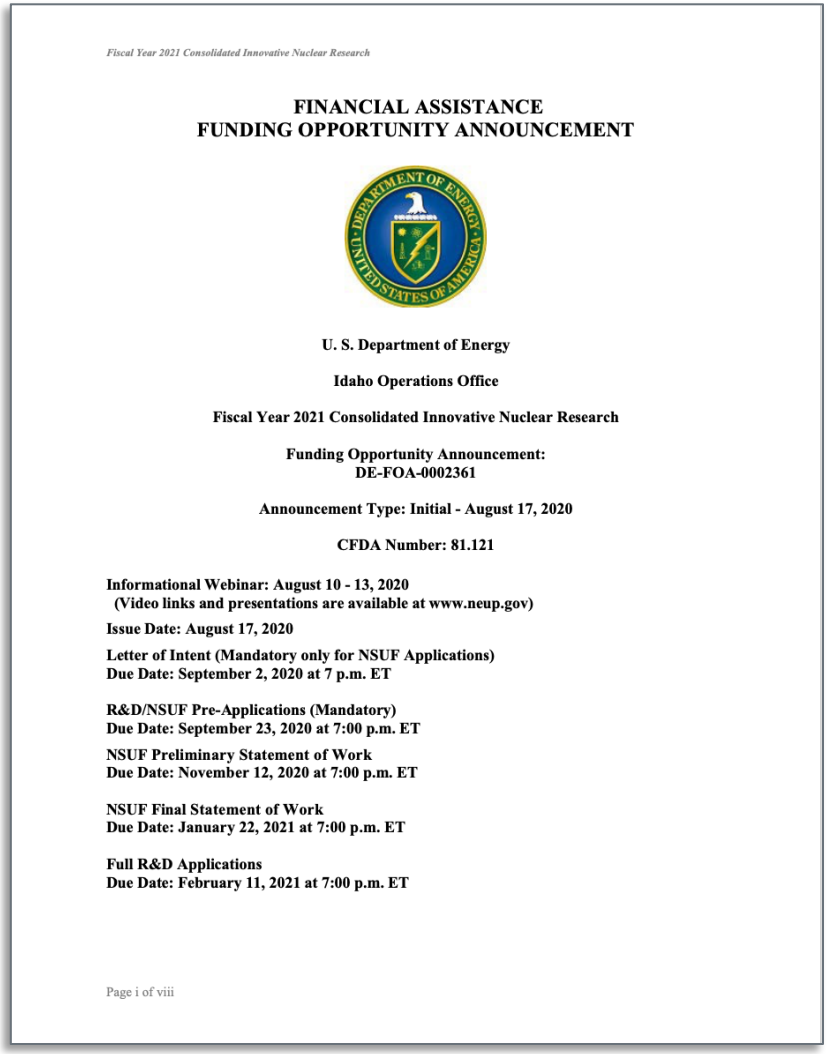

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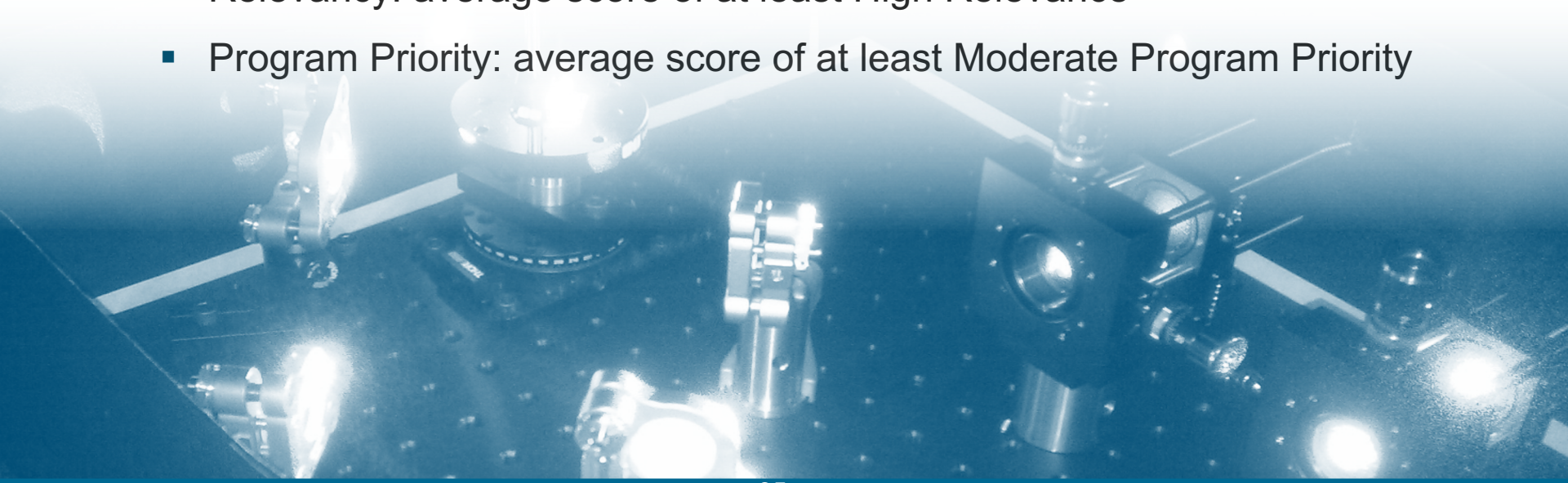
Uninvited Pre-Applications

- With the exception of NSUF applications, pre-applications that are not invited may still be submitted as full applications.

- Uninvited pre-applications that are received as full applications must meet the following criteria in a re-review to be considered for a full technical review.
  - Relevancy: average score of at least High Relevance
  - Program Priority: average score of at least Moderate Program Priority



Weighting of Scores

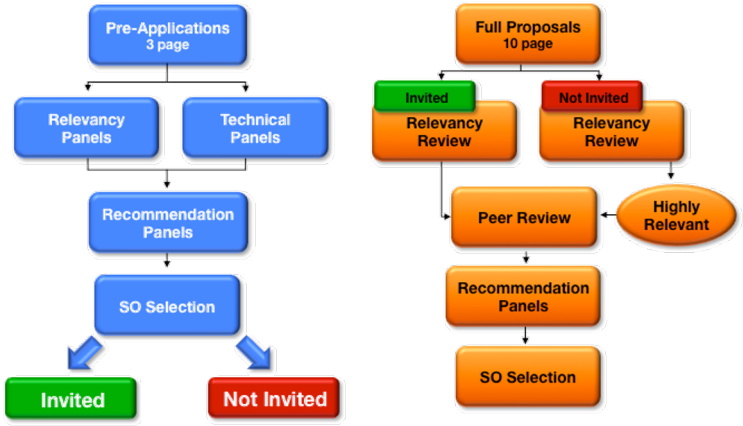
- Technical merit and relevancy are weighted according to program involvement:
  - Mission Supporting — 80% Technical; 20% Relevancy
  - Program Supporting — 65% Technical; 35% Relevancy
  - NSUF Access Only: — 65% Technical; 35% Relevancy
- The FOA details criteria for all sections and application types.
- Additional relevancy consideration is given for effective partnerships including MSI, URG, industry, and foreign collaborations.
- Program priority is a separate criteria that is scored by relevancy reviewers.

Semi Blind Reviews

- CINR policy is to r[illegible] and MS ap[illegible]s in a semi blind process. Techn[illegible]arrative is evaluated wit[illegible]e knowledge of individuals c[illegible]s to assess the merit of the [illegible] **Do not include th[illegible]ow[illegible]nformation in the narrati[illegible]**
  - Cost a[illegible]ricing infor[illegible]n
  - Ident[illegible]ion, by individu[illegible]e or name of institution, [illegible]y teaming partn[illegible]r lead institution (e[illegible]es of acceptable ways [illegible]eferring to partn[illegible]are posted on the NE[illegible]bsite).
  - Offic[illegible]me or title of facilities us[illegible]execute scope. [illegible] describe the fa[illegible]by function and/or technic[illegible]butes such a[illegible] accelerator, a test [illegible]or, etc.
- **Note:** Fo[illegible]lications requesting NSUF [illegible]e NSUF facilities ma[illegible]amed.

Review Processes and Criteria

- Review criteria and processes used for PS and MS evaluation is consistent with traditional peer review.
  - PS and MS applications are reviewed in a process that includes pre-applications.
    - pre-applications: two relevancy, one peer
      - results in Invited and Not Invited status
    - full applications: typically two relevancy, three peer



Tools for Understanding the FOA

- Eligibility Restriction Workflow
  - https://neup.inl.gov/SiteAssets/General%20Documents/Full_App_Documents/FOA%20Eligibility%20Flowchart%202021.pdf
- R&D Federal/Technical Points of Contact
  - https://neup.inl.gov/SitePages/FY21_RD_Technical%20_Program_Contacts.aspx

Contact Information

- Federal/Technical Points of Contact – Technical Questions
  - List of TPOCs found at www.NEUP.gov
- DOE-ID – Procurement Questions
  - Andrew Ford
  - fordaj@id.doe.gov
- NE Integration Office – General Application Submittal Questions
  - (208) 526-1602 / (208) 526-8178
  - neup@inl.gov

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- NSUF preliminary SOW: Nov 12, 2020
- Full application invitations: Dec 2020
- NSUF final SOW: Jan 22, 2021
- Full R&D applications: Feb 11, 2021

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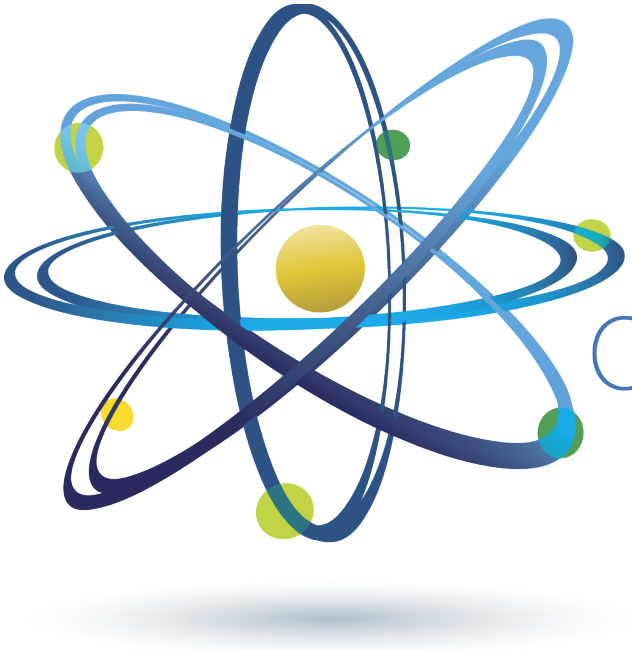
Questions?



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