



Appalachian Regional Energy Hub Initiative

Notice of Solicitation of Applications

This Notice of Solicitation of Applications (NOSA) for research and planning grants and implementation grants provides an overview of the Appalachian Regional Energy Hub Initiative as well as the specific requirements needed to complete a grant application.

NOSA release date	March 26, 2024
Application period opens	March 26, 2024
Grant proposal due	July 24, 2024

More information about the Appalachian Regional Energy Hub Initiative and submission guidance is available at www.arc.gov/energyhub. Questions can be emailed to energyhub@arc.gov.

Appalachian Regional Commission Overview

The Appalachian Regional Commission (ARC or the Commission) is a regional economic development agency that represents a partnership of federal, state, and local government. Established by an act of Congress in 1965 through the Appalachian Regional Development Act (ARDA), 40 U.S. Code § 14101–14704, ARC is composed of the governors of the 13 Appalachian states and a federal co-chair, who is appointed by the President of the United States. Local participation is also provided through multi-county local development districts (LDDs). ARC serves a 206,000-square-mile region of 26.3 million people that includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia.

ARC Strategic Investment Goals

As described in ARC's strategic plan, *Appalachia Envisioned: A New Era of Opportunity*, the Commission has identified five investment goals to advance its vision and mission and to guide its work through fiscal year (FY) 2026. These goals reflect consensus among local, state, and federal partners on the most critical investment opportunities in the Appalachian Region (the Region). While the investment goals are distinct, they are also interdependent, with progress on one goal often requiring investment in another. All Appalachian Regional Energy Hub Initiative applications must address one or more of these goals:

1. **Building Appalachian Businesses:** Strengthen and diversify the Region's economy through inclusive economic development strategies and investments in entrepreneurship and business development.

2. **Building Appalachia’s Workforce Ecosystem:** Expand and strengthen community systems (education, healthcare, housing, childcare, and others) that help Appalachians obtain a job, stay on the job, and advance along a financially sustaining career pathway.
3. **Building Appalachia’s Infrastructure:** Ensure that the residents and businesses of Appalachia have access to reliable, affordable, resilient, and energy-efficient utilities and infrastructure in order to successfully live and work in the Region.
4. **Building Regional Culture and Tourism:** Strengthen Appalachia’s community and economic development potential by preserving and investing in the Region’s local cultural heritage and natural assets.
5. **Building Community Leaders and Capacity:** Invest in the capacity of local leaders, organizations, and communities to address local challenges by providing technical assistance and support to access resources, engage partners, identify strategies and tactics, and conduct effective planning and project execution.

Background on the Appalachian Regional Energy Hub Initiative

The Infrastructure Investment and Jobs Act (IIJA) of 2021 (the Bipartisan Infrastructure Law) contained a five-year reauthorization of the Appalachian Regional Commission, which included an authorization for an Appalachian Regional Energy Hub Initiative to be funded at \$5 million per year out of the Commission’s annual appropriation for five years.

Section 11506(e) of the IIJA amended the Appalachian Regional Development Act of 1965 by adding Section 14511, the Appalachian Regional Energy Hub Initiative (40 U.S.C. 14511). The statute authorizes ARC to provide technical assistance, make grants, enter into contracts, or otherwise provide amounts to individuals or entities in the Appalachian Region to conduct research and analysis regarding the economic impact of an ethane storage hub in the Region. This storage hub will support more effective energy market performance due to the scale of the project. ARC is further authorized to make funds available for projects and activities with the potential to significantly contribute to the economic resilience of the area in which the project is located. A possible storage hub project would be one with the capacity to store and distribute more than 100,000 barrels per day of hydrocarbon feedstock with a minimum gross heating value of 1700 Btu per standard cubic foot (40 USC 14511[a]). ARC may also provide technical assistance to make grants to, enter into contracts with, or otherwise provide amounts to individuals or entities in the Region for projects and activities that will help establish a regional energy hub in the Region for natural gas and natural gas liquids, including hydrogen produced from the steam-methane reforming of natural gas feedstocks.

This NOSA, issued in accordance with the IIJA, requests proposals to conduct research and analysis described in the statute regarding the Appalachian Regional Energy Hub Initiative and for projects or activities that will help establish a regional energy hub in Appalachia for hydrogen from natural gas feedstocks.

Regional Opportunities

Appalachia is well positioned to strengthen regional economies by investing in its energy resilience due to the following characteristics:

Resources

The Appalachian Region is home to rich natural gas resources and is the third largest producer of natural gas in the world. Natural gas liquid production is also increasing, opening new opportunities for the Region, including hydrogen production.

Geography

Appalachia is a keystone region, acting as a bridge to other areas and potentially benefiting from its proximity to large population centers east of the Mississippi River to the East Coast. The Region's location, coupled with its natural gas resources, river systems, strong industrial base, and workforce, presents an opportunity for Appalachia to become a national model for natural gas / natural gas liquids energy production and use systems.

Demand

Demand for power grid balancing and flexibility continues to increase. Beyond power sector applications, an ethane storage and distribution hub in the Region has the potential of providing benefits to the broader petrochemical and plastics industries along the lines of supply diversity and cost competitiveness.

Workforce

Appalachia is home to dozens of institutions of higher education poised to train workers for this emerging industry. There are also numerous training partnerships experienced in delivering talent for the industry across state lines. However, additional analysis is needed to completely identify sector-based training opportunities in this emerging area.

ARC participates in the Biden administration's Rural Partners Network and Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization. Both represent collaborative efforts of multiple federal agencies to promote and support economic revitalization in rural communities and communities impacted by coal-specific job losses. ARC uses its membership in these groups to participate in the national conversation and to bring the specific needs and issues of the Region to the immediate attention of partner federal agencies.

Key Elements in the Application

The Appalachian Regional Commission seeks a project that involves research, analysis, and planning regarding the economic impact of an ethane storage hub in the Appalachian Region. This storage hub is intended to support more effective energy market performance due to the scale of the project and to help establish a regional energy hub for natural gas and natural gas liquids, including hydrogen produced from the steam-methane reforming of natural gas feedstocks.

Allowable Activities

ARC's preliminary assessment in anticipation of this NOSA for the Energy Hub Initiative suggests the need for further research that could lead to the development of a strategic regional energy hub plan. The plan would provide a comprehensive understanding of, and planning for, natural gas and natural gas liquids energy sources and the length of their viability and the opportunities from the demand and supply side for natural gas and natural gas liquids, including hydrogen produced from the steam-methane reforming of natural gas feedstocks.

In this phase of ARC's Energy Hub Initiative, ARC envisions awarding a **single research grant (topics are listed in subsection A)** to an awardee with the ability and capacity to perform, contract out, and/or sub-award grant funds to eligible sub-awardees. Eligible research includes but is not limited to the topics in subsection A.

A. NATURAL GAS, NATURAL GAS LIQUIDS, AND ETHANE ENERGY HUB RESEARCH

1. Quantifying the economic and environmental impact of (an) energy hub(s) in Appalachia, including documentation of job creation and tax base expansion in impacted areas.
2. Developing an inventory of the natural gas production assets in the Region, including locations.
3. Surveying the potential for commoditization of natural gas liquids (NGLs) by having an energy hub in the Region.
4. Conducting a comprehensive analysis of the potential benefits to the broader petrochemical and plastics industries with respect to supply diversity and cost competitiveness.
5. Surveying which industries within the Region would benefit from having natural gas, natural gas liquids, and their byproducts, including hydrogen produced from the steam-methane reforming of natural gas feedstocks. ARC may consider proposals that include these technologies with carbon capture applications.
6. Evaluating the current state of existing infrastructure and identifying gaps for making the transition from natural gas/natural gas liquids/hydrogen (i.e., infrastructure gap analysis with cost estimates).
7. Identifying policy and regulatory challenges for the development of an energy hub, including policy proposals.
8. Documenting transportation challenges and transit needs to support an energy hub development.
9. Determining the availability of reliable underground geological storage areas.
10. Assessing the feasibility of and capacity for carbon capture, utilization, and storage in target areas.
11. Identifying potential pilot projects or demonstrations for subsurface storage and other technologies.
12. Conducting an inventory of existing regional educational resources, training programs, and curricula (including training gaps), that would inform the training programs

required to successfully establish an energy hub in the Region.

13. Documenting workforce needs in the natural gas/natural gas liquids space and understanding skills gaps and industry training needs for the current workforce.
14. Completing a broader review of energy workforce needs and industry trends to enable the development of the skillful workforce needed for an energy hub in the Region.
15. Assessing the housing and infrastructure needs for an energy hub in the Region.
16. Hiring neutral conveners to assist with collaborative, multi-state planning efforts including community engagement, inventory of policy, and related issues regarding energy transition among impacted states and communities.
17. Engaging communities in comprehensive strategic planning around energy transition to understand local needs and document potential benefits of an energy hub including workforce, education, housing, transportation, jobs, and tax base.
18. Convening networks across the value chain to build regional capacity among industries and corporations, research and educational institutions, entrepreneurs, and innovators in the energy space.

B. HYDROGEN FROM NATURAL GAS FEEDSTOCKS – IMPLEMENTATION

ARC acknowledges the ongoing efforts in the Appalachian Region to establish a hydrogen energy hub from natural gas feedstock¹. ARC will consider grant applications for projects or activities that support the establishment of a regional hydrogen energy hub from natural gas (for purposes of this NOSA, “hydrogen energy hub”). Eligible activities include but are not limited to the following:

1. Facilitating the workforce needs for the establishment of a sustainable hydrogen energy hub from natural gas steam-methane reforming.
2. Facilitating community agreements to ensure local and regional economic benefits for the communities within the hydrogen energy hub footprint.
3. Adopting commercially available technologies capable of being fueled by the hydrogen energy hub outputs.
4. Designing plans for and/or adopting hydrogen-ready building codes and/or community planning for a hydrogen-based economy.
5. Funding demonstrations or pilot projects using technologies that can be fueled by the hydrogen energy hub outputs.
6. Developing innovative application of absorption solvent systems and new carbon dioxide (CO₂) membranes, adsorbents, or combination of technologies.

¹ <https://www.energy.gov/articles/biden-harris-administration-announces-7-billion-americas-first-clean-hydrogen-hubs-driving>.

While hydrogen fuel consumption is not widespread, there has been growing interest in its use as a potential fuel source across the economy. Most of the hydrogen produced in the United States is made by natural gas reforming. Carbon dioxide capture technologies are available and applicable to hydrogen produced from steam-methane reforming processes. Carbon capture and storage technologies mitigate the CO₂ emissions generated from this hydrogen production method and are aligned with the environmental policies of the Biden administration. See the scoring criteria for details.

Grants

Funding Availability for Grants: Up to \$5,000,000

The total funding available under this NOSA is \$5 million. ARC envisions awarding a single grant under the natural gas and natural liquids research (subsection A) and one or more grants under the hydrogen from natural gas feedstocks implementation (subsection B).

ARC will consider only grant applications that do not exceed the maximum amount of funding available for this initiative (\$5 million). ARC reserves the right to allocate the funding at its sole discretion. It is ARC's intent to award only non-construction grants in this first round of funding availability for the Energy Hub Initiative. ARC may consider awarding grants for construction in subsequent funding opportunity announcements under this initiative.

Eligibility

Eligible applicants for ARC's Appalachian Regional Energy Hub Initiative grant program include the following.

Eligible Organizations

- Local development districts (LDDs);
- Indian Tribes or a consortium of Indian Tribes;
- States, counties, cities, or other political subdivision of a state, including a special purpose unit of a state or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions;
- Institutions of higher education or a consortium of institutions of higher education;
- Public or private nonprofit organizations or associations;
- Labor organizations or labor management partnerships.

Eligible Geography

Projects must serve and benefit a portion of the Appalachian Region as defined by the Appalachian Regional Development Act (ARDA) of 1965, as amended. The Appalachian Region includes certain counties in Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and all of West Virginia. If projects extend beyond the Appalachian Region as defined by the ARDA of 1965, only that portion that is within the Region is eligible for ARC funding. A map of the Appalachian Region is available online at <https://www.arc.gov/appalachian-counties-served-by-arc/>.

Criteria for and Guidance on Grants

Scoring table with parameters and possible point value:

A.	Executive Summary	5 points
B.	Statement of Need or Opportunity	5 points
C.	Project Description, Scope of Work, and Methodology	35 points
E.	Qualifications and Prior Experience	25 points
F.	Cost Effectiveness, Budget, and Match	10 points
G.	Management Proposal and Staffing	15 points
H.	Carbon Capture	5 points

Executive Summary (up to 5 points)

Include the following components:

- Project title
- Project applicant partners
- Counties and states served
- Purpose (one sentence)
- Funding sources—regional resources leveraged
- Project description (one to two paragraphs)

Statement of Need or Opportunity (up to 5 points)

- Describe the need or opportunity this proposal seeks to address and identify the states and communities involved in and impacted by the proposal.
- Explain how the proposed scope of work and the project's goals align with one or more of the [ARC Strategic Investment Goals](#) and [States Priorities](#).

Project Description, Scope of Work, and Methodology (up to 35 points)

- Clarify how the proposed project will support research, analysis and/or planning (in either subsection A or B above) regarding establishment of a regional energy hub in the Appalachian Region.
- Describe the step-by-step approaches or methods intended to accomplish all the tasks specified in this proposal. The proposal should provide a detailed explanation of the methodologies, datasets, and research methods to be used in all facets of the work.
- Outline and illustrate the phases into which the proposed work will be logically sequenced and performed. A schedule of milestones and deadlines should be specified for the completion of various work elements.
- Identify the points and tasks in this research project that will require participation by ARC staff.
- Identify any difficulties that may be encountered in this project and propose practical and sound solutions to these challenges.
- Please note: It is the responsibility of the contractor to provide line editing of the final report(s) and deliverable(s).

Qualifications and Prior Experience (up to 25 points)

- Describe the qualifications and experience of the organization and the personnel to be assigned to the project, including resumes of key personnel. Information provided should include examples of past experience with the specific subject matter and data sources.
- Provide up to three examples of relevant prior research that relates to the proposed scope of work.
- Provide examples (links and/or attachments) of the three most similar research reports undertaken by the applicant's organization. If appropriate, provide organization names and addresses, names of contact persons, and telephone numbers for reference.

Cost-Effectiveness, Budget, and Match (up to 10 points)

- Submit complete and detailed budget and budget narratives. All items included in the budget and budget narrative must align with each other. All items included in the budget and budget narrative including personnel, fringe benefits, travel, equipment, supplies, construction, and other and indirect charges must align with the project as described. All items in the budget narrative must be detailed and reflected in the budget. Complete the appropriate federal Standard Forms (SF): SF424, SF424A, and SF424B.
- Identify regional resources to be leveraged as match and the status of that match (confirmed, pending, etc.). Resources listed as match should be confirmed or accessible within 60 days of the contract date. Applicants should demonstrate community and regional commitment to the proposed project by combining ARC resources with a diverse array of match types (cash, in-kind, loans, etc.) and sources (public, private, and philanthropic, etc.). Additionally, if real property is being utilized as match, please attach a MAI (Member, Appraisal Institute) appraisal of the property's value. Details about matching or cost-sharing requirements for ARC grants are available at <https://www.arc.gov/match-requirements-for-arc-grants/>.

Management Proposal and Staffing (up to 15 points)

- Furnish a brief narrative description of the organization, including the division or branch planned to perform the proposed effort, and the authority responsible for controlling these resources and personnel.
- Describe the contractor's proposed staffing plan and staff distribution to accomplish this work. The staffing plan should present a chart that assigns the full time equivalent (FTE) commitment of each staff member to the project's tasks and schedule.
- Include a detailed description of activities for key project-related personnel and anticipated deliverables. Finally, the proposal should identify the relationship of key project personnel to the contracting organization, including consultants and subcontractors or sub-awardees.
- Describe the readiness of the project team to begin work once a grant is awarded. Highlight whether significant hiring is required and what additional expertise is needed for implementation of the proposed scope of work.

Carbon Capture (5 points)

- Identify the activities associated with the production of hydrogen from the steam-methane reforming of natural gas feedstocks that incorporate carbon capture applications.
- Describe the role of the carbon capture technology applicable to the project or activity and its role in reducing CO₂ emissions.
- To be eligible for full points under this section, all associated hydrogen activities must involve carbon capture.

Application Documents

- SF-424, Application for Federal Assistance
- Supporting Documents
 - Such documents that the applicant deems adequate to submit with its grant application so that ARC can satisfactorily assess the merits of the application. ARC may request additional documentation during the review process when, at its sole discretion, it is necessary to adequately evaluate the grant application. Applicants must identify and mark all confidential/proprietary documents they deem appropriate to submit with their grant application.

Review Process

A. General. The deadline for submitting grant applications is July 24, 2024.

B. State Program Manager Outreach. Before submitting an application, every applicant is required to contact the state program managers of the states impacted by the project proposal. The state officials will ensure that the proposals are aligned with their state Appalachian economic development plans and strategy statements. If this action is not completed, then the application will not be moved forward in the review process. A list of all ARC program managers is available at https://www.arc.gov/state_partner_role/state-program-manager/.

C. Grant Application Review and Complete Application Requirements.

ARC's Office of the Federal Co-Chair staff, Commission staff, and state program managers will jointly review the complete grant application based on the criteria set out in this document.

A successful grant application will have to be recommended by the ARC Executive Director and approved by the applicable ARC member state alternate and the Federal Co-Chair.

The primary point of contact on record for the given applicant will be notified of the grant award. A grant agreement with the terms and conditions for the grant or grants shall be duly executed by the parties involved.

Application

Applications are limited to 15 pages of narrative responses and 50 pages of file attachments. Only applications that meet the following criteria will be scored:

- Applicants must meet eligibility requirements.
- Applications must meet the ARC cost-share matching requirement for the proposed service area.
- Applicant has contacted ARC state program manager(s). **NOTE: ARC's communication with the state program manager does not satisfy the requirement that applicants must contact state program managers.**
- Applications must be complete and submitted to energyhub@arc.gov.
- Further guidance on submission can be found at www.arc.gov/Energyhub.
- Applications will be considered fully submitted when the authorized representative digitally certifies and signs the Signature and Submission page.

Unique Entity Identifier and System for Award Management (SAM)

As required by the Federal Funding Accountability and Transparency Act of 2006 and 2 CFR §200, Appendix I, applicants are required to meet the following criteria:

- Be registered in the System for Award Management (SAM) before submitting their application (www.sam.gov);
- Provide a valid Unique Entity ID (UEI) in their application; and
- Continue to maintain an active SAM registration with current information at all times during which they have an active federal award or an application or plan under consideration by a federal awarding agency.

Funding Restrictions

Appalachian Regional Energy Hub Initiative grant awards funded in part or in whole with ARC program funds are subject to the same program funding restrictions of other ARC grants.

Indirect Costs

Applicants are encouraged to consider the indirect costs in their budget formulation. Indirect costs are those costs incurred for a common or joint purpose benefiting more than one cost objective, and not readily assignable to the cost objectives specifically benefitted, without effort disproportionate to the results achieved.

Entities with a Negotiated Indirect Cost Rate Agreement (NICRA) must provide an explanation of how the indirect costs are calculated in the grant application. Organizations that do not have a current negotiated indirect cost rate as provided in the Uniform Guidance, 2 CFR §200, may elect to charge a de minimis rate of 10% based on the modified total direct cost. Applicants are encouraged to review the cost principles set forth in 2 CFR §200, Subpart E, available at <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-E?toc=1>

Award Administration

General

Administration of ARC awards is subject to the same regulations, restrictions, and requirements as other federal awards. These include but are not limited to “Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards” at [2 CFR §200](#), as currently updated; past performance and non-compliance; restrictions on making awards to corporations convicted of felony criminal violations and unpaid federal tax liabilities; environmental and historic preservation; and national policy requirements, including but not limited to those protecting free speech, religious liberty, public welfare, the environment, and prohibiting discrimination, e.g., Equal Employment Opportunity and the Americans with Disabilities Act (ADA). ARC grants are also subject to ARC’s open records policy.

Funds made available under Appalachian Regional Energy Hub Initiative are subject to the domestic content procurement (Buy America) preference requirements set forth in the Build America, Buy America Act. This Buy America preference will apply to the infrastructure portion of all grants involving infrastructure regardless of whether the primary purpose of the award is an infrastructure project. The Buy America preference means that, for infrastructure projects, (1) all of the iron and steel in the project is produced in the United States; (2) the manufactured products used in the project are produced in the United States; and (3) the construction materials used in the project are produced in the United States. Details about this domestic content procurement preference are available at <http://www.arc.gov/BuyAmericaGuidelines>.

ARC reserves the right to change the reporting time periods and, depending on the nature of the project, may request additional relevant data. In addition, ARC requires grantees to cooperate with post-award evaluations, which require maintaining records for at least three years after project closeout. All ARC awards are subject to audit. If your organization has been subject to a federal audit within the past five years, please note within your application the recommendations made and your subsequent responses to those recommendations.

Non-Construction

General management and administration requirements for non-construction projects are contained in the [ARC Grant Administration Manual for Non-Construction Grant Agreements](#).

ARC Contact Information

Prior to submission of the application, every applicant is required to contact the state program managers of the states impacted by the project proposal. The state officials will ensure that the proposals are in alignment with their state Appalachian economic development priorities. State program managers also serve as a resource regarding any questions that applicants have about the Appalachian Regional Energy Hub Initiative in general or about the use of agency funds to support projects in their communities and regions. Applicants with additional questions may submit them to Energyhub@arc.gov.

General Legal Disclosures

The Appalachian Regional Energy Hub Initiative awards will be made only to the extent that funds are available. Publication of this NOSA does not obligate ARC to award any specific grant or cooperative agreement or to obligate all or any part of available funds. Applicants intending to contract with a specific individual, consulting group, or organization with ARC funding must have and use a competitive procurement policy that conforms to procurement standards at [2 CFR §200.317–327](#).

This NOSA does not commit ARC to make any specific award. Notwithstanding any other provisions of the NOSA, ARC reserves the right to award grants, cooperative agreements, or contracts to communities or regions that best meet the requirements of the NOSA. ARC solely reserves the right to accept or reject any or all responses received as a result of this request; to negotiate with all qualified sources; or to cancel in part or in its entirety this NOSA if it is in the interests of ARC to do so.

Please note that ARC will not reimburse any costs associated with the preparation of a response to this NOSA. Consultants and consultant teams that are legally barred from receiving federal contracts or contract payments will not be considered for work with communities or regions under this NOSA.

Grants awarded under this initiative are subject to the provisions of the Appalachian Regional Development Act of 1965, as amended; 40 USC Sec. 14101 et seq.; the Appalachian Regional Commission Code; and other terms and conditions set forth in the grant agreement.

Records of the Commission's doings and transactions are made available for public inspection pursuant to the Appalachian Regional Development Act of 1965, as amended; 40 USC 14308; and Commission disclosure practices.