

Appalachian Regional Commission

Request for Proposals

Energy Workforce Trends and Training Requirements

Proposals due on or before September 8, 2009

Appalachian Regional Commission, Suite 700
1666 Connecticut Ave., NW
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Energy Workforce Trends and Training Requirements

I. Overview: The Appalachian Regional Commission (ARC) invites proposals from qualified researchers and consultants to assess workforce trends and training requirements to meet the needs of an increasingly diversified regional energy industry. The ARC is a federal-state partnership established in 1965 to promote social development and economic competitiveness of the Appalachian region. This project would examine recent trends and occupational forecasts in the energy sector and develop an analysis of training capacity and demand gaps in the region.

The Appalachian region is rich in conventional energy resources, as well as renewable and alternative energy. The region's mines produce about a third of the nation's coal, and its electrical utilities provide 15% of the nation's electrical output. Almost 150,000 jobs are generated by the energy industry, and hundreds of thousands more are involved in the production and distribution of energy products and services. The oil and gas extraction industry is expanding regionally, and job positions require at least two or four-year degrees, including geologist, geophysicist, mechanical or petroleum engineer, and environmental engineering. In the electrical utility sector employers seek entry-level power plant operator, distributor, and dispatcher positions. Expansion and modernization of the electricity grid will require electrical engineers and construction workers. In the coal mining sector, jobs usually require a high school degree, but the increasing sophistication of equipment often requires a higher level of technical skill. Commercial and residential energy efficiency investments and renewable energy technologies will require certified builders, installers, energy auditors and inspectors. Wind power development requires special training for siting, installation, and maintenance.

In 2006 ARC adopted an *Energy Blueprint* which set forth three strategic goals for energy and economic development:

- promote energy efficiency in Appalachia to enhance the Region's economic competitiveness.
- increase the use of renewable energy resources, especially biomass, to produce alternative transportation fuels, electricity, and heat.
- support the development of conventional energy resources, especially advanced clean coal, to produce alternative transportation fuels, electricity, and heat.

The *Energy Blueprint* assessed current state and national energy policies and strategies that will help promote energy efficiency investments and renewable energy technologies, and in the process reduce household, business, and public sector energy bills and stimulate job creation. Proposals for workforce development are incorporated into each of the plan's Strategic Objectives.

The next step in advancing the agenda set out in the *Energy Blueprint* is to identify what types of workers will be in demand as the industry changes shape, and outline a strategy for developing the capacity to provide those workers from within the region. This study will survey existing education and workforce training programs in the region and identify potential shortages of workers with the appropriate skills to meet future needs.

II. Deliverables

The contract will require a draft and a final report with an executive summary that integrates and interprets key findings of the study, a series of thematic chapters, and a conclusion with recommendations for implementation of study findings. The report should be written for a non-technical audience and relate the narrative discussion to descriptive statistics, analyses, graphs and tables where appropriate. Technical details, data tables, and details regarding methodology should be presented in appendices. A printed copy of the final report suitable for reproduction and an electronic file copy must be submitted upon completion of the project (in MS Word and Adobe pdf file formats). These should be accompanied by an Excel workbook of all relevant data compiled during the study.

III. Scope of Work

This research project will examine both the supply and demand side of energy workforce needs and trends. To investigate demand for energy workers, the project will develop long-term regional baseline projections of output and employment in energy-related industries under current policy, summarize pending and proposed federal and Appalachian state energy policies, and forecast alternative workforce requirements based on the implementation of these alternative energy policies. Comparisons should be made between baseline and alternative forecasts, and anticipated gaps between labor supply and demand should be noted. Specifically, the proposal should cover the following topics:

- Describe current energy industry trends by state that prevail in the region, referring to widely accepted forecasts such as the Energy Information Administration *Annual Energy Outlook*. Summarize the implications of these trends for future employment and occupational needs.
- Review and summarize existing literature regarding green energy workforce trends and requirements. Include all reports covering Appalachian states, in addition to the following:
 - *Green For All- Jobs and Workforce Development in the Clean Energy Economy*
<http://www.greenforall.org/resources/>
 - *Pew Center- Clean Energy Economy report and state fact sheets:*
http://www.pewcenteronthestates.org/report_detail.aspx?id=52872
 - *Center for American Progress- green jobs state fact sheets and maps:*
http://www.americanprogress.org/issues/2009/06/clean_energy_factsheets.html
 - *Environmental Defense Fund- green jobs state fact sheets and maps:*
<http://www.edf.org/page.cfm?tagID=43199>
<http://www.edf.org/page.cfm?tagID=34065&state=NC>
 - *Duke University- Manufacturing Climate Solutions:*
<http://www.cggc.duke.edu/environment/climatesolutions/>
 - *Center for Energy Workforce Development:* <http://www.cewd.org/articles.asp>
 - *Association for Career and Technical Education:*
<http://www.acteonline.org/sustainability.aspx#research>
 - *North Carolina green jobs report:* <http://energync.org/>
 - *Center for American Progress- New York green jobs report:*
http://www.americanprogress.org/issues/2009/05/greenjobs_greenhomes.html
 - *Ohio University- Consortium for Energy, Economics and the Environment- green jobs report*
http://www.odod.state.oh.us/cms/uploadedfiles/CDD/OEE/Energy_Summit_Report.pdf
http://ce3.ohio.edu/event%20pages/Energy_Summit.aspx

- Review existing state and federal energy efficiency and alternative energy policies and incentives that may have an impact on current and future workforce needs and trends. Specify the employment and occupational requirements of these alternative policy scenarios, based on implementation of energy efficiency or alternative energy technologies that are supported by a credible policy framework of incentives and programs at the federal and/or state levels.
- Specify a framework for estimating energy-related employment by occupation and industry under baseline and alternative policy scenarios for the Appalachian Region, including both direct and indirect jobs in the energy industry and related suppliers.
- To investigate the supply of energy industry workers, the study will survey existing and planned education and training programs in Appalachian community colleges and universities, and provide case studies of exemplary cutting edge programs. The study will examine current and projected future gaps between the energy workforce demand and supply. The report will conclude with recommendations concerning how these gaps may be closed.

IV. Methodology

The successful applicant will develop a complete methodology to conduct the analysis specified in the scope of work.

- Preliminary description of the research method(s) and statistical techniques for conducting the proposed analyses, and the advantages and limitations of the selected approach given budget constraints.
- Specification of data sets and methods to be used for each of the proposed analyses, including consideration of appropriate time-series and geographical or spatial relationships to be considered.
- Specification of the data sets for an analysis of workforce needs by sector, with public or proprietary data sources identified.
- Protocols for selecting and conducting case studies of representative policies and education and training programs.
- Preliminary design concept for developing an analytical framework and tools that communities can use to assess workforce trends, needs, and potential gaps.
- A review of current energy policies, codes, and energy efficiency standards in the Appalachian region that have implications for workforce development.
- Discussion of the limitations of specific data sources and methods to address these issues, and issues related to geographic coverage and/or aggregating geographical sub-regions to provide adequate coverage.
- Discussion of methods for specifying a business-as-usual scenario and alternative energy scenario(s) that would be technically and economically feasible, given a credible policy framework of incentives and public programs.

Proposals can recommend other methodological approaches as needed. In keeping with the overall budget constraint for this project, proposals may present trade-offs among tasks as long as the research design can ensure the accomplishment of the main research objectives of the project.

V. Proposal Submission, Evaluation, Cost and Timing

The Commission anticipates that the level of effort required for this project will be medium scale (\$75k to \$149k). The contract will be a FIRM FIXED-PRICE CONTRACT. The Commission anticipates that the work will take 12 months to complete all phases of the project.

An original and three copies of the proposal must be submitted to the Regional Planning and Research Division, Appalachian Regional Commission, 1666 Connecticut Avenue, NW, Suite 700, Washington, D.C., 20009-1068, on or before **September 8, 2009**. Questions about this proposal should be directed to David Carrier, Senior Economist, dcarrier@arc.gov.

All proposals will be evaluated based on the following criteria:

- Complete, clearly articulated, logical study design and technically competent methodology;
- Demonstrated knowledge of energy workforce issues, evaluation, and forecasting;
- Qualifications, relevant prior experience, command of existing research on regional economic development, and demonstrated ability to synthesize and interpret research findings in a credible and useful manner;
- A credible management proposal for staffing and completing the project in a timely fashion;
- Cost effectiveness of the proposed project design.

VI. Outline of Technical Proposal Contents

A. Technical Proposal Narrative should not exceed 10 pages, not including the accompanying resumes and organizational background materials.

Project Work Plan and Milestones: Please provide a brief abstract the proposal by summarizing the background, objectives, proposed methodology, and expected outputs and results of the research. The proposal should describe the phases into which the proposed work can be logically divided and performed. A schedule of milestones and deadlines should be specified for the completion of various work elements, including information collection, interviews, surveys, analyses, quarterly progress reports, preliminary drafts for review, and final draft reports.

The proposal should identify the points and tasks in this research project that will require participation by the Commission and ARC staff. Further, the statement should identify specific information needs according to sources, procedures, and individual tasks of the research that may need to be supplied by the Commission. Finally, the proposal should identify any difficulties that may be encountered in this project and propose practical and sound solutions to these problems.

Personnel performing the work must be described in this section in terms of numbers of people and their professional classification (e.g., project director, web-designer, analyst, program designer, etc.). Brief resumes of the education and relevant experience of the principal investigator, co-investigator, and other key personnel are required. The selected contractor will be required to furnish the services of those identified in the proposal as key personnel. Any change in key personnel is subject to approval by ARC.

B. Management Proposal

The resource capability and program management for planning and performing the work will be considered in the proposal selection process.

- *Business Management Organization and Personnel:* Furnish a brief narrative description of the organization that will perform the proposed work effort, and the authority responsible for controlling resources and personnel.
- *Staffing Plan* A staffing plan is required that describes the contractor's proposed staff distribution to accomplish this work. The staffing plan should present a chart that partitions the time commitment of each professional staff member to the project's tasks and schedule. In addition, the proposal should 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.
- *Relevant Prior Experience* The proposal must describe the qualifications and experience of the organization and the personnel to be assigned to the project. Information should include direct experience with the specific subject-matter area and organizations, addresses, contact persons, and telephone numbers for such references.
- *Contract Agreement Requirements* This section of the proposal should contain any special requirements that the contractor wants to have included in the contract.

C. Cost Proposal

Each proposal submitted must contain all cost information, including direct labor costs consistent with the staffing plan, labor overhead costs, travel, estimated cost of any subcontracts, other direct costs (such as those for creating or maintaining databases), university overhead, total costs, overhead, and contract fees or profit. ARC policy on allowable indirect overhead costs for university-based research is to permit universities to charge the same rates charged to their own state agencies. The contractor should include estimated expenses for presenting study findings at a one-day meeting at the ARC offices in Washington, D.C. This activity will be over and above routine meetings with ARC staff during the course of the project.

The contract awarded for this research project will be a FIRM FIXED-PRICE CONTRACT, with payments on a quarterly schedule. The contract terms shall remain firm during the project and shall include all charges that may be incurred in fulfilling the terms of the contract.