United States Energy Association
Request for Proposal: System Stability and Reliability Study – Prospective State – Electricity Transmission Networks of Tajikistan

Issue date of RFP:	**July 6, 2022**
Closing date/time for questions:	**July 29, 2022**
Closing date of RFP:	**August 12, 2022**
Implementing Agency:	**United States Energy Association**
Funding Agency:	**United States Agency for International Development**
Program:	**Energy Utility Partnership Program (EUPP)**
Subject:	**Request for Proposal (RFP) No. USEA/EUPP-2022-763-93-01 – United States Energy Association**

Re: Partnership with United States Energy Association for System Stability and Reliability Study - Prospective State – Electricity Transmission Networks of Tajikistan

Components of this RFP as follows:

- Scope of Work (SOW) described under article IV
- Instructions for the preparation of the proposal described under article V
- Evaluation criteria described under article VI
- Budget Template

Dear Offeror,

The United States Energy Association is inviting prospective organizations or individuals through this Request for Proposal (RFP) to submit proposals for implementing a project on System Stability and Reliability Study – Prospective State for the Electricity Transmission Networks (ETN) of Tajikistan.

USEA intends to subaward a sub-agreement and/or consultancy agreement with period of performance for 12 months.

Offerors are requested to submit their most responsive technical proposal addressing the SOW outlined under article IV of this RFP and a competitive offer proposing a reasonable price to accomplish the objectives of the work.

- Questions concerning this request shall be submitted via email to attention of Ms. Marina N. Barnett, Program Manager, at mbarnett@usea.org by **17:00 hours EST on July 29, 2022.** *In compliance with standard procedure, all inquiries and comments will be shared with the rest of the Offerors along with the Project's response. Questions received after the closing date for questions will not be answered.*

- Proposals are due by **17:00 hours EST of the closing date**. Please submit all proposals with a read receipt to Ms. Marina N. Barnett, Program Manager, at mbarnett@usea.org. Proposals must be in digital format (PDF). *Please note that USEA will not accept responsibility for delays with transmission or receipt of proposals. Proposals received after that date and/or time specified will not be considered.*

- **LANGUAGE REQUIREMENTS -** The proposal shall be delivered in English while the deliverables shall be produced in English and Russian.

- **AUTHORIZED GEOGRAPHIC CODE** - The authorized geographic code for procurement of services under this contract is 937.

- **ELIGIBILITY** – This RFP is open to qualified organizations domestically (in the U.S.) and internationally (abroad).

- USEA will evaluate responsive and technically acceptable proposals in accordance with the evaluation criteria stated under article VI, "Evaluation Criteria." USEA will not evaluate nonresponsive or technically unacceptable proposals. Please note that USEA will find proposals technically unacceptable if they fail to comply or fully respond with the material terms of this RFP.

- Issuance of this RFP does not constitute a subaward commitment on the part of USEA, nor does it commit USEA to pay for costs incurred in the preparation and submission of an application. Further USEA reserves the right to reject any or all applications received.

As this is a USAID-funded program, the RFP follows USAID Procurement Regulations and Laws. All applicants' details will be kept confidential.

I. INTRODUCTION

The United States Energy Association is a nonprofit, apolitical, nonlobbying organization founded in 1924. USEA's mission has two pillars of equal importance. USEA serves as a resource, by convening energy stakeholders to share policy, scientific, and technological information to foster the advancement of the entire energy sector. Internationally, USEA promotes energy development by expanding access to safe, affordable, and environmentally acceptable energy in partnership with the U.S. Government.

Through a cooperative agreement with the United States Agency for International Development (USAID) Bureau for Development, Democracy, and Innovation (DDI), USEA implements an Energy Utility Partnership Program (EUPP) available to all USAID-assisted countries and USAID missions. EUPP supports USAID-partner countries in their efforts to increase environmentally sustainable energy production and improve the operational efficiency and financial viability of their utilities and related institutions. The goal of the EUPP is to increase access in USAID-assisted countries to environmentally sound energy services.

In Central Asia, EUPP works to create an enabling environment for the regional transfer to cleaner, more reliable power supply and encourage establishment of an integrated power market.

II. UTILITY/COUNTRY BACKGROUND

Energy independence by 2030 is one of the highest political and economic priorities for the Government of Tajikistan, as reflected in the National Development Strategy. Tajikistan's total installed generation capacity is 6,100 MW, comprising of several large and a few small hydropower plants (HPPs) and three fossil-fueled combined heat and power plants. HPPs generate 98% of the country's electricity, and Tajikistan's hydropower potential is estimated at 527 billion kWh per year. However, the high reliance on hydropower generation results in a power surplus in summer and severe deficits in winter.

Tajikistan's power system was disconnected from the Central Asia Power System (CAPS) in 2009, although Tajikistan retains formal participation in the parallel operations agreement and is scheduled to reconnect and resume synchronous operations with the power systems of Kazakhstan, Uzbekistan, and the Kyrgyz Republic in 2024.

The Electricity Transmission Networks (ETN) of Tajikistan was established in 2021 as a result of the unbundling of Barqi Tojik, the vertically integrated electric power utility, into three separate companies responsible for power generation, transmission and distribution. ETN now serves as Tajikistan's transmission network operator.

ETN utilizes DIgSILENT's PowerFactory software tool for transmission network analysis, modeling, and planning. In 2021, USEA provided ETN with a national dynamic model of Tajikistan's network for the existing network topology and with planning models – static and dynamic – for 5- and 10 -year horizons (2025 – 2030). In addition, ETN personnel were provided with comprehensive training on developing and improving national models using the DIgSILENT PowerFactory software.

III. IMPLEMENTATION AND APPROACH

The purpose of this RFP is to solicit proposals from interested organizations or individuals (private/government/nongovernmental/institutes/not-for-profit/civil societies) deemed most suitable to undertake the project. The applicant can propose an association/consortium/partnership of maximum two organizations, however, one organization must be identified as the lead organization.

Subaward Agreement Management and Oversight

An agreement between USEA and the potential selected applicant shall be subject to all USEA/USAID Special Terms and Conditions, including all mandatory standard provisions (RAAs and ADS) Flow-Down clauses, where applicable, and the provisions included in 2CFR200 and 2CFR700. All bidders are strongly encouraged to review these provisions prior to submitting a proposal.

- Standard Provisions for U.S. Nongovernmental Organizations: https://www.usaid.gov/sites/default/files/documents/1868/303maa.pdf
- Standard Provisions for Non-U.S. Nongovernmental Organizations: https://www.usaid.gov/sites/default/files/documents/303mab.pdf
- 2CFR200: https://www.gpo.gov/fdsys/pkg/CFR-2014-title2-vol1/pdf/CFR-2014-title2-vol1-part200.pdf
- 2CFR700: https://www.gpo.gov/fdsys/pkg/CFR-2015-title2-vol1/pdf/CFR-2015-title2-vol1-part700.pdf
- USAID Mandatory Standard Provisions that are mentioned in USEA's cooperative agreement (Annexure-E).

Subaward agreement management, oversight of contractual obligations, and payment will be carried out by USEA. USEA will be responsible for any communication with USAID regarding the subaward. Subawardees and contractors have no relationship with USAID under the terms of this subaward. All required USAID approvals must be directed and processed through USEA.

USEA Involvement and Responsibilities

USEA will be involved in all the activities under a subaward agreement between USEA and the Subawardee and/or Consultant in the following ways:

- Review and approval of proposed activities
- Review and approval of deliverables
- Approval of invoices for payment

USEA will also be responsible for all logistical arrangements for the participants and consultants for the activities conducted in the country. This includes arrangements and associated costs of a data collection trip, a 3-day workshop and a 3-day training:

- Economy-class roundtrip airfare to Dushanbe, Tajikistan for up to 2 consultants
- Per diem (meals and lodging) for up to 2 consultants to include all travel and training days and maximum of 1 full day of rest prior to start of activity (Lodging to be provided according to U.S. government regulations)
- Reimbursement of visa fees
- Reimbursement of vaccinations (if needed), travel medication costs and COVID-19 tests
- International health insurance for the duration of the travel to Tajikistan
- Ground transportation to/from the airport
- Local transportation to sites (if needed)
- Meeting space and audio-visual equipment

USEA will follow the U.S. Department of State and the Centers for Disease Control and Prevention (CDC) guidelines when making travel and in-person programming decisions and arrangements.

Non-Disclosure Agreement

Depending on data requirements, the Subawardee and/or Consultant might be requested to sign a Non-Discloser Agreement (NDA) with ETN.

IV. SCOPE OF WORK

Purpose

The purpose of this program is to enhance ETN's capacity for integration of renewable generation while maintaining stability and reliability of the national grid. The ultimate outcome will be the creation of an enabling environment for expanded integration of renewable generation and for the establishment of a unified power system in Central Asia.

Objectives

The objective of this program is two-fold:

- To analyze the future system behavior and develop possible technical and engineering solutions to avoid network instability that might be caused by the integration of new renewable generation facilities (System Stability and Reliability Study – Prospective State)
- To enhance ETN engineers' capacity for power system modeling and analyses in the DIgSILENT PowerFactory software.

Tasks

The tasks to be performed by the Consultant under this Scope of Work shall include the following:

Task 1: Conduct a webinar on project methodology and data collection to prepare ETN to collect and provide all data necessary to conduct the System Stability and Reliability Study – Prospective State.

Task 2: Conduct a data collection trip to Tajikistan's largest power plants to obtain all additional data (such as technical documentation, parameters of generators and corresponding control systems, etc.) needed to improve the accuracy of the DigSilent models. These sites shall include:

Nurek HPP (3000 MW)
Sangtuda HPP 1/2 (895 MW)
Baypazin HPP (600 MW)
Dushanbe CHPP-2 (400 MW)
Rogun HPP (260 MW)
Golovnaya HPP (250 MW)

Task 3: Update the previously developed current state and prospective state dynamic models of the Tajikistan's power system with the additional data collected from Tajikistan's largest power plants as described in Task 2.

Task 4: Conduct comprehensive system studies for the prospective grid and future planned facilities for the 2025-2030 prospective scenario (System Stability and Reliability Study – Prospective State). These studies shall analyze the future system behavior and develop possible technical and engineering solutions to avoid network instability that might be caused by the integration of new renewable generation facilities, and shall include the following:

- Long-term load flow/steady state stability
- Long-term contingency (N-1 and N-2) analyses
- Transient and small signal stability
- Fault critical clearing time (CCT) calculation and analysis
- Short circuit calculations
- Voltage and frequency control analyses
- Network transfer capacity calculations

The analyses shall be conducted for six working scenarios: three hydrology scenarios (wet, average, and dry) for each of the two characteristic regimes (peak and off-peak).

Task 5: Conduct a 3-day workshop to present the System Stability and Reliability Study – Prospective State and to train ETN engineers to model stability and reliability issues using the DIgSILENT PowerFactory software. The workshop training agenda must include the following topics:

- Steady state analyses (for peak and off-peak prospective regimes)
- Stability analyses
- Voltage profile assessment
- Reactive power compensation

Task 6: Conduct a 3-day training on Frequency and Stability Modeling using the DIgSILENT PowerFactory software.

Task 7: Present project results and recommendations to ETN management.

The webinar, workshop, training and the project results presentations shall be delivered in the Russian language.

The workshop and the training shall include pre-training and post-training surveys administered to all participants. A pre-training survey shall be designed to assess participants' baseline knowledge and competencies and to identify knowledge gaps and weak areas. The planned training course shall be modified to address the identified gaps. A post-training/skill assessment survey shall be designed to measure participating trainees' progress.

Deliverables

Task 1: Deliverable 1. Digital copies – in English and in Russian – of a presentation outlining project methodology and data questionnaires to be provided to ETN for collecting all data necessary to conduct the System Stability and Reliability Study – Prospective State submitted to USEA at least 2 weeks prior to conducting the webinar.

Task 2: Deliverable 2. Digital copies – in English – of a brief report on a data collection trip, including any encountered challenges, achieved results and recommendations for improving ETN's policies and procedures for data management.

Task 3: Deliverable 3. Current state and prospective state dynamic models of the Tajikistan's network updated with additional data collected from the largest power plants during a data collection trip.

Deliverable 4. Digital copies – in English – of a brief report describing the updates introduced to the models.

Task 4: Deliverable 5. Digital copies – in English and in Russian – of a draft report on the System Stability and Reliability Study – Prospective State submitted to USEA and ETN for their review.

Deliverable 6. Digital copies – in English and in Russian – of a final report on the System Stability and Reliability Study – Prospective State. The report shall incorporate updates and responses to USEA and ETN's comments.

Task 5: Deliverable 7. Digital copies – in English and in Russian – of a draft presentation of the System Stability and Reliability Study – Prospective State report and training workshop curriculum, and pre-training and post-training surveys submitted to USEA at least 2 weeks prior to conducting the training.

Deliverable 8. Digital copies – in English and in Russian – of the final presentation of the System Stability and Reliability Study – Prospective State report and full training curriculum, including manuals, presentations and all other training materials developed for ETN and distributed to the participants.

Deliverable 9. Digital copy – in English – of a Training Report on workshop approach, accomplishments, and recommendations for additional capacity building (if any).

Task 6: Deliverable 10. Digital copies – in English and in Russian – of a draft training curriculum, and pre-training and post-training surveys submitted to USEA at least 2 weeks prior to conducting the training.

Deliverable 11. Digital copies – in English and in Russian – of the full final training curriculum, including manuals, presentations and all other training materials developed for ETN and distributed to the participants.

Deliverable 12. Digital copy – in English – of a Training Report on workshop approach, accomplishments, and recommendations for additional capacity building (if any).

Task 7: Deliverable 13. Digital copies – in English and in Russian – of a draft presentation for ETN management outlining project results and recommendations submitted to USEA at least 1 week prior to conducting the presentation.

Deliverable 14. Digital copies – in English and in Russian – of the final presentation for ETN management outlining project results and recommendations. The final presentation shall incorporate updates and responses to USEA's comments.

Deliverable 15. Digital copy – in English – of a final Project Report to include the following:

- An overview of the consultancy (background and the Scope of Work)
- Statement of consultant's background and key qualifications
- Recommendations for improving ETN's capacity to integrate renewable generation, to improve stability and reliability of the national grid, and to facilitate successful re-connection with the power systems of Kazakhstan, Uzbekistan and the Kyrgyz Republic
- Recommendations for further technical assistance
- A Russian-language translation of the recommendations for improving ETN's capacity and for further technical assistance.

Reporting:

The Subawardee and/or consultant will report to USEA.

Schedule:

The project is expected to begin in May 2022 and take approximately 12 months to complete. These tentative assignment dates are provided solely for information purposes and the benefit of bidders. Modification of these assignment dates will not constitute a change in scope.

V. PROPOSAL CONTENT

The proposal must follow the structure outlined below, contain the following components, and be within page limitations. Failure to follow the outline and page limits prescribed or exclusion of any of the required items will impact the proposal's scoring. Maximum proposal limit 50 pages (inclusive of cover page and annexes).

Cover Letter			
	Description	**Notes**	**Maximum Page Limit**
	Must include bidder's current Data Universal Numbering System (D-U-N-S) number Provide status of System of Award Management (SAM) registration	Proposals without a DUNS number will not be considered and need not be submitted.	2 pages
Technical Proposal			
Subject heading	**Description**	**Notes**	**Maximum Page Limit**
Understanding of the issues	Demonstration of an understanding of the issues outlined in the SoW		1 page
Technical approach	Approach to implementing the SoW		4 pages
Schedule of tasks	Proposed schedule of tasks and deliverables per the SoW		2 pages
Team assignments & Bio sketches	For each member of the team: 1st: Summary of work to be performed by/assignment of each individual proposed 2nd: (Immediately following the assignment) Short bio sketch that highlights the individual's direct experience with the subject matter	The bidder can propose a consortium of multiple organizations and/or individuals; however, one organization must be identified as the lead organization who will enter into contract with USEA and be in compliance with the SAM and DUN registration noted in this RFP.	1 page per person total ½ page for assignment per person, followed by ½ page for bio sketch

Financial proposal			
Subject heading	**Description**	**Notes**	**Maximum Page Limit**
Summary of costs	Line-item budget excluding labor with detailed justification of all costs associated with the project, including direct and indirect costs (printing, administrative supplies, etc.).	Must be in USD Must be inclusive of taxes (if applicable) USEA reserves the right to request a budget narrative after a proposal has been submitted	2 pages
Labor fees	Anticipated labor costs, broken down by the number of man-hours and fully loaded daily rate for each individual proposed for this project.	Must include names and titles of the individuals Must be in USD Must be inclusive of taxes & fees (if applicable) All salary information will be kept confidential USEA reserves the right to request a budget narrative after a proposal has been submitted	2 pages
Annex			
	Description	**Notes**	**Maximum Page Limit**
Annex 1	Proof of System of Award Management (SAM) registration	Please note that SAM registration is a 10-step process and can take several weeks to complete. Please refer to this guide for more information. If a bidder has not completed the SAM registration process by the proposal submission due date, USEA will accept a proposal if it includes a PDF copy of an email from "notification@sam.gov" to the bidder stating that the bidder "successfully submitted the entity registration for NAME OF COMPANY in the U.S. Government's System for Award Management (SAM)". Proposals without proof of SAM registration or an email from notification@sam.gov stating acceptance of SAM application, will not be considered and need not be submitted.	
Annex 2	Curricula Vitae	Summary of relevant experience of each proposed team member for (not beyond) the past 10 years. Relevant experience should be listed chronologically (starting with the most recent).	2 pages per person

Annex 3	USAID Contractor Employee Biographical Data Sheet	Completed USAID Contractor Employee Biographical Data Sheet forms for each employee proposed for this project https://www.usaid.gov/forms/aid-1420-17	1 page per person
Annex 4	Organization experience	Summary of the company's or companies' background and experience with similar projects	5 pages

VI. EVALUATION CRITERIA

All bidders are required to provide a DUNS number and maintain a current SAM registration. Proposals without a DUNS number or proof of SAM registration will not be considered.

In evaluating the proposals, USEA will seek the **best value for money** rather than the lowest priced proposal. Selection of an offer for a subaward award will be based on an evaluation of proposals against qualifications, subject matter expertise and budget justification. USEA will use a two-stage selection procedure:

- the first stage will evaluate the Technical Proposal: Proposals shall first be evaluated from a technical standpoint (qualifications and subject matter expertise) without regard to proposed budget justification.
- the second stage will evaluate the Cost Proposal for proposals that pass the Technical Proposal evaluation.

Specifically, the selection committee will evaluate each proposal upon the following criteria and using the following weighting:

Evaluation Criteria:	20%:	Experience with similar projects (for each consultant & the organization in general)
	5%	Experience implementing projects in Tajikistan
	25%:	Subject matter expertise (based on education and other relevant experience)
	30%	Technical approach
	20%:	Cost

If at any time prior to award USEA deems there to be a need for a significant modification to the terms and conditions of this RFP, USEA will issue such a modification as a written RFP amendment to all competing bidders. No oral statement of any person shall in any manner be deemed to modify or otherwise affect any RFP term or condition, and no bidder/applicant shall rely on any such statement. Such amendments are the exclusive method for this purpose.

USEA is not bound to accept the lowest or any proposal and reserves the right to accept any proposal in whole or in part and to reject any or all proposals.

USEA shall not be legally bound by any award notice issued for this RFP until an agreement is duly signed and executed with the winning bidder/applicant.

Any resulting agreement will be subject to the terms and conditions contained in the Subaward and/or Consulting Agreement.

VII. QUESTIONS AND CLARIFICATIONS

All questions and clarification requests related to this RFP should be submitted via email to Ms. Marina N. Barnett, Program Manager, at mbarnett@usea.org no later than July 29, 2022. All questions and answers will be posted on USEA's website.

END OF RFP