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REQUEST FOR PROPOSALS (RFP)

Developing a Framework for Quantifying Energy Optimization Reporting (RFP 5091)

Due Date: Proposals must be received by 2:00 pm Mountain Time on
Thursday, October 29, 2020

WRF Project Contact: Ashwin Dhanasekar, adhanasekar@waterrf.org

Project Sponsors

This project is funded by The Water Research Foundation (WRF) as part of WRF's Research Priority Program.

Project Objectives

- Create a methodology for evaluating energy-saving/renewable-energy-producing water, wastewater, and reuse projects using validated past projects.
- Create a framework using the evaluations mentioned above, to be utilized for future projects.
- Create a repository for collecting and sharing verified, framework-assessed projects.
- Provide decision-making and performance-tracking guidance to agencies and utilities considering such projects, including identifying the metrics or key performance indicators (KPIs) that are most important to evaluating energy efficiency projects.
- Summarize a list of considerations to be factored in quantification and reporting of project results.
- Create and summarize energy savings from different types of energy efficiency projects. "Energy efficiency projects" is defined as capital equipment retrofits and operational and behavioral changes.

Budget

Applicants may request up to \$100,000 in WRF funds for this project. WRF funds requested and total project value are evaluation criteria considered in the proposal selection process.

Background and Project Rationale

Energy projects are often discretionary and are initiated based on projected annual energy savings metrics. The water industry lacks standard energy savings estimation procedures, as well as measurement and verification approaches and procedures that adhere to the Efficiency Valuation Organization's¹ 2012 International Performance Measurement and Verification Protocol². In some cases, energy/greenhouse gas (GHG) reductions and maintenance requirements have been optimistically estimated, leading to skepticism towards energy projects by utility management; while in other cases, overly aggressive "go thresholds," or project blockers asking a litany of "but what if..."

¹ <https://evo-world.org/en/>

² <https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp>

questions, can kill otherwise good investments. There is also a lack of consistency in defining routine and non-routine variables, operating profiles, and data collection in preparation of measurement and verification (M&V) procedures and reports, leading to issues with accuracy of estimates. The intent of this project is to scrutinize current pre-project energy savings estimation procedures and decision-making practices by subjecting projects to rigorous M&V procedures and sound economic methods.

Research Approach

A framework will be developed for utilities to:

- Better consider proposed project effectiveness (highlighting “traps” to avoid or benefits/requirements to consider);
- Provide guidance on making informed “go” decisions; and
- Consistently document and collate verified post-implementation efficacy of such projects, both for this project’s upgrades (as examples) and for prior or future verified project performance by others.

In addition, an M&V template will be developed for common energy efficiency project types.

Researchers will start by reviewing already-completed projects, documenting those projects’ original justifying planning bases, and documenting the projects’ eventual overall costs and cost-effectiveness. These “20:20-hindsight” project reviews will inform the overall framework and assist in the development of a consistent reporting template for projects. Additionally, challenges associated with pre-project data or context gaps should be noted, and those limitations juxtaposed against and/or used to inform the implementation of a new/planned project set.

The framework developed from this project would be ready to be implemented in future projects identified, implemented, and tracked for:

- Energy use baselining pre and post upgrades.
- Decision-making processes and identified drivers supporting implementation.
- How well each project achieved predicted reductions/improvements (that were ideally published), with emphasis on sources of divergent performance.

Overall electricity/energy/GHG reduction effectiveness will be normalized to many metrics such as \$-invested/kW-average-reduction. At project conclusion, researchers should comment on the applicability (or non-applicability) of each metric and decide whether elimination of any metric from the framework is warranted.

Expected Deliverables

- A report detailing the framework and standardized reporting template, using that template to provide reviews of the already-completed project set with discussion of limitations and how those evaluations informed the framework/reporting template. The report will also help develop the framework for new/planned projects’ facilities, features, planned upgrade descriptions, predicted performance of those upgrades, and the plan for measurement and verification of each.
- A report summarizing the results of the upgrades with before and after data comparisons and review of Phase 1 report conclusions, updating as warranted.
- A guidance document that summarizes the process, forms, and need-to-know information so that others can implement the process and/or upload results to the available project database.
- The project team will also provide a webcast, as well as a Leaders Innovation Forum for Technology (LIFT) presentation summarizing the results of the project to interested utilities, as a part of the project deliverables.

Communication Plan

Please review WRF's *Project Deliverable Guidelines* for information on preparing a communication plan. The guidelines are available at <https://www.waterrf.org/project-report-guidelines>. Conference presentations, webcasts, peer review publication submissions, and other forms of project information dissemination are typically encouraged.

Project Duration

The anticipated period of performance for this project is 24 months from the contract start date.

Proposal Evaluation Criteria

The following criteria will be used to evaluate proposals:

- Understanding the Problem and Responsiveness to RFP (maximum 20 points)
- Technical and Scientific Merit (maximum 30 points)
- Qualifications, Capabilities, and Management (maximum 20 points)
- Communication Plan, Deliverables, and Applicability (maximum 15 points)
- Budget and Schedule (maximum 15 points)

Proposal Preparation Instructions

Proposals submitted in response to this RFP must be prepared in accordance with the WRF document *Guidelines for Research Priority Program Proposals*. The current version of these guidelines is available at <https://www.waterrf.org/proposal-guidelines>, along with *Instructions for Budget Preparation*. The guidelines contain instructions for the technical aspects, financial statements, indirect costs, and administrative requirements that the applicant must follow when preparing a proposal.

Eligibility to Submit Proposals

Proposals will be accepted from domestic or international entities, including educational institutions, research organizations, governmental agencies, and consultants or other for-profit entities.

WRF's Board of Directors has established a Timeliness Policy that addresses researcher adherence to the project schedule. The policy can be reviewed at <https://www.waterrf.org/policies>. Researchers who are late on any ongoing WRF-sponsored studies without approved no-cost extensions are not eligible to be named participants in any proposals. Direct any questions about eligibility to the WRF project contact listed at the top of this RFP.

Administrative, Cost, and Audit Standards

WRF's research program standards for administrative, cost, and audit compliance are based upon, and comply with, Office of Management and Budget (OMB) Uniform Grants Guidance (UGG), 2 CFR Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, and 48 CFR 31.2 Contracts with Commercial Organizations. These standards are referenced in WRF's *Guidelines for Research Priority Program Proposals*, and include specific guidelines outlining the requirements for indirect cost negotiation agreements, financial statements, and the Statement of Direct Labor, Fringe Benefits, and General Overhead. Inclusion of indirect costs must be substantiated by a negotiated agreement or appropriate Statement of Direct Labor, Fringe Benefits, and General Overhead. Well in advance of preparing the proposal, your research and financial staff should review the detailed instructions included in WRF's *Guidelines for Research Priority Program Proposals* and consult the *Instructions for Budget Preparation*, both available at <https://www.waterrf.org/proposal-guidelines>.

Budget and Funding Information

The maximum funding available from WRF for this project is \$100,000. The applicant must contribute additional resources equivalent to at least 33 percent of the project award. For example, if an applicant requests \$100,000 from WRF, an additional \$33,000 or more must be contributed by the applicant. Acceptable forms of applicant contribution include cost-share, applicant in-kind, or third-party in-kind that comply with 2 CFR Part 200.306 cost sharing or matching. The applicant may elect to contribute more than 33 percent to the project, but the maximum WRF funding available remains fixed at \$100,000. **Proposals that do not meet the minimum 33 percent of the project award will not be accepted.** Consult the *Instructions for Budget Preparation* available at <https://www.waterrf.org/proposal-guidelines> for more information and definitions of terms.

Period of Performance

It is WRF's policy to negotiate a reasonable schedule for each research project. Once this schedule is established, WRF and its sub-recipients have a contractual obligation to adhere to the agreed-upon schedule. Under WRF's No-Cost Extension Policy, a project schedule cannot be extended more than nine months beyond the original contracted schedule, regardless of the number of extensions granted. The policy can be reviewed at <https://www.waterrf.org/policies>.

Utility and Organization Participation

WRF encourages participation from water utilities and other organizations in WRF research. Participation can occur in a variety of ways, including direct participation, in-kind contributions, or in-kind services. To facilitate their participation, WRF has provided contact information, on the last page of this RFP, of utilities and other organizations that have indicated an interest in this research. Proposers are responsible for negotiating utility and organization participation in their particular proposals. The listed utilities and organizations are under no obligation to participate, and the proposer is not obligated to include them in their particular proposal.

Application Procedure and Deadline

Proposals are accepted exclusively online in PDF format, and they must be fully submitted before 2:00 pm Mountain Time on Thursday, October 29, 2020. All proposal documents must be compiled into two PDF files consisting of your technical review documents and your financial review documents. All forms and components of the proposal are available in the *Proposal Component Packet* zip file on the proposal website at <https://proposals.waterrf.org/Pages/RFPs.aspx>. An FAQ and a tutorial are also available. A login is required to access the proposal website and download the packet. Proposers are encouraged to create logins and verify the validity and compatibility of the system well in advance in order to avoid last-minute errors or delays.

The online proposal system allows submission of your documents until the date and time stated in this RFP. To avoid the risk of the system closing before you press the submit button, do not wait until the last minute to complete your submission.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Ashwin Dhanasekar at (303) 734-3423 or adhanasekar@waterrf.org. Questions related to proposal submittal through the online system may be addressed to Caroline Bruck at (303) 347-6118 or cbruck@waterrf.org.

5091 Utility and Organization Participants

The following utilities have indicated interest in possible participation in this research. This information is updated within 24 business hours after a utility or an interested organization submits a volunteer form, and this RFP will be re-posted with the new information. **(Depending upon your settings, you may need to click refresh on your browser to load the latest file.)**

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