



MEMORANDUM

TO: SLDMWA Water Resources Committee Members, Alternates
SLDMWA Board of Directors, Alternates

FROM: Federico Barajas, Executive Director

DATE: October 2, 2023

RE: Water Resources Committee Recommendation / Board Authorization to Pursue
Solar Over Canals Application for Federal Non-Reimbursable Funding

BACKGROUND

In July 2023, the Bureau of Reclamation (Reclamation) issued an Internal Call for Proposals (CFP) relating to the Inflation Reduction Act – Solar Over Canals (**See Attachment A**). Reclamation issued this CFP under the authority of Section 50232 (Canal Improvement Projects) of the Inflation Reduction Act of 2022 (IRA) (Public Law (PL) 117-169): *In addition to amounts otherwise available, there is appropriated to the Secretary, acting through the Commissioner of Reclamation, for fiscal year 2022, out of any money in the Treasury not otherwise appropriated, \$25,000,000, to remain available through September 30, 2031, for the design, study, and implementation of projects (including pilot and demonstration projects) to cover water conveyance facilities with solar panels to generate renewable energy in a manner as determined by the Secretary or for other solar projects associated with Bureau of Reclamation projects that increase water efficiency and assist in implementation of clean energy goals.*

Reclamation's Dam Safety and Infrastructure (DS&I) Directorate in collaboration with the Power Resources Office (PRO) and the Research and Development (R&D) Office, is leading and coordinating this Internal CFP. Each Reclamation Region that has an interest must submit application for funding.

Funding is available for a pilot or demonstration project that involves covering a canal(s) associated with a Reclamation project with photovoltaic (PV) solar panels to generate renewable energy. The project shall increase water efficiency and assist in implementation of clean energy goals.

The objective of this CFP is to invite applicants to submit proposals for the study, design, and construction of PV solar panels over canals associated with Reclamation projects, as a pilot project or demonstration for Reclamation. This CFP will make available up to \$25 million in appropriations from the IRA. This money is available and is planned for project use beginning in Fiscal Year (FY) 2024.

ISSUE FOR DECISION

Whether the Water Resources Committee should recommend, and the Board should authorize, pursuit of a Solar Over Canals Application for Federal Non-Reimbursable Funding.

RECOMMENDATION

Staff recommends pursuit of a Solar Over Canals Application for Non-Reimbursable Funding.

ANALYSIS

Water Authority staff has been approached by Reclamation's Regional Office and a private firm that has conceptual ideas that are in alignment with this pilot/demonstration effort. Given the level of interest by Reclamation and the potential for Public-Private partnership, Water Authority staff sees the merit of pursuing this funding application process for a Delta Mendota Canal (DMC) pilot project.

The DMC is a prime candidate because Reclamation is looking for a project that is operated and maintained by a transferred works operator. Under this CFP, Reclamation is seeking a pilot or demonstration project to evaluate technical capability, economic feasibility, and/or viability for full-scale implementation, or to test an unproven material or technology, for future coverage of canals with solar panels.



— BUREAU OF —
RECLAMATION

Internal Call for Proposals: Inflation Reduction Act – Solar Over Canals



Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Cover Photo – All-American Canal – Andrew Pernick, Bureau of Reclamation (<https://www.flickr.com/photos/usbr/7461161736/in/photostream/>).

Acronyms and Abbreviations

AMD	Asset Management Division
ARC	Application Review Committee
CFP	Call for Proposals
DS&I	Dam Safety and Infrastructure
FY	Fiscal Year
IRA	Inflation Reduction Act
O&M	Operation and Maintenance
PL	Public Law
PRO	Power Resources Office
PV	Photovoltaic
R&D	Research and Development Office
Reclamation	Bureau of Reclamation

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Section A. Introduction

A.1. Authority

This Internal Call for Proposals (CFP) is issued under the authority of Section 50232 (Canal Improvement Projects) of the Inflation Reduction Act of 2022 (IRA) (Public Law (PL) 117-169):

In addition to amounts otherwise available, there is appropriated to the Secretary, acting through the Commissioner of Reclamation, for fiscal year 2022, out of any money in the Treasury not otherwise appropriated, \$25,000,000, to remain available through September 30, 2031, for the design, study, and implementation of projects (including pilot and demonstration projects) to cover water conveyance facilities with solar panels to generate renewable energy in a manner as determined by the Secretary or for other solar projects associated with Bureau of Reclamation projects that increase water efficiency and assist in implementation of clean energy goals.

A.2. Background

The Bureau of Reclamation's (Reclamation) Dam Safety and Infrastructure (DS&I) Directorate effectively manages risk and maximizes the value of Reclamation's assets by providing reliable stewardship and oversight for Reclamation's diverse infrastructure portfolio. The DS&I Directorate, in collaboration with the Power Resources Office (PRO) and the Research and Development (R&D) Office, is pleased to distribute this Internal CFP.

Funding is available internally for a pilot or demonstration project that involves covering a canal(s) associated with a Reclamation project with photovoltaic (PV) solar panels to generate renewable energy. The project shall increase water efficiency and assist in implementation of clean energy goals.

To build resiliency to climate change, fight inflation, invest in domestic energy production and manufacturing, and reduce carbon emissions, Reclamation is exploring the viability of placing PV solar panels over canals consistent with the IRA. Solar panels, when placed over canals, have the potential to create many benefits. Not only do solar panels create clean, renewable energy that can be used for a wide variety of applications, but studies suggest that it can reduce evaporation losses of the canal; increase efficiency and production of the solar panels; create land savings for open space and agricultural use; reduce maintenance of the facility by mitigating algae and/or aquatic plant growth; and reduce the energy footprint and carbon emissions required to operate or maintain the facility. Few projects of this scope currently exist in the world. Reclamation is hoping to use this opportunity to better understand the impacts of solar panels over canals to its systems and facilities; minimize the impacts to operation and maintenance; and work with technical partners (e.g., Department of Energy, Tribal Nations, transferred works operators) to understand the scale of these efforts and the corresponding benefits that can be claimed.

A.3. Objective of this Call for Proposals

The objective of this Internal CFP is to invite applicants to submit proposals for the study, design, and construction of PV solar panels over canals associated with Reclamation projects, as a pilot project or demonstration for Reclamation.

A.4. Total Project Funding

This Internal CFP will make available up to \$25 million in appropriations from the IRA. This money is available and is planned for project use beginning in Fiscal Year (FY) 2024.

Section B. Eligibility Information

B.1. Eligible Applicants

Regional Directors may submit multiple proposals from within their region. However, a consolidated request from the Regional Director is required. Regional, area office, and field office staff should work with transferred works operators on the development of a proposal. The proposed project shall feature a canal associated with a Reclamation project that is operated and maintained by a transferred works operator. If the project does not directly involve a Reclamation-owned facility, the project must be associated with an authorized Reclamation project. Additionally, upon project completion, the project shall result in 100% non-Federal operation and maintenance (O&M) of the resulting facilities.

B.2. Eligible Projects

Under this CFP, Reclamation is seeking projects to study, demonstrate, apply, and construct the deployment of PV solar panel technology over canals associated with Reclamation projects. The selected project(s) will be used as a pilot or demonstration project to evaluate technical capability, economic feasibility, and/or viability for full-scale implementation, or to test an unproven material or technology, for future coverage of canals with solar panels.

Eligible projects for this CFP shall include the physical planning, design, and construction of PV solar panels over a canal associated with a Reclamation project. The development of guidance, methods, and research through academic studies related to incorporating PV solar panel equipment over canals will be permitted if it is in addition to physical design and construction of the project. Reclamation seeks to have a pilot or demonstration physically constructed as part of the end results associated with the project, but not be responsible for its ownership, operation, or maintenance. Furthermore, the project shall measurably increase water efficiency and implement clean energy production.

Additionally, eligible projects shall:

- Have a nexus to Reclamation's mission, priorities, or activities;
- Include a strategy for integrating with the electric grid; and
- Be operated and maintained by a non-Federal partner.

Proposed projects will be reviewed by DS&I's Asset Management Division (AMD) to determine whether the application is eligible for evaluation.

B.3. Ineligible Projects

Ineligible projects include projects that do not study, design, and construct PV solar panels over canals associated with Reclamation projects. Ineligible projects will also include those that are

not expected to increase water efficiency, do not assist in the implementation of clean energy goals, and rely on Federal operation and maintenance.

B.4. Length of Project

Once constructed, Reclamation anticipates that the pilot/demonstration of the project(s) and associated data collection will continue for a maximum of five years. After the completion of this timeframe, the non-Federal entity with operation and maintenance responsibility will be able to continue the project through the lifecycle of the constructed components.

Section C. Review and Selection Process

The review process will include evaluating proposals by an ARC, using the evaluation criteria described in *Section E. Evaluation Criteria*, and a prioritization of projects by the Commissioner’s Office. Each of these steps is described in more detail below.

C.1. Selection Process Schedule

FY 2024 Solar Over Canals Call for Proposals Schedule	
Call for Proposals Issued	July 2023
Proposals Due	October 2023
Project Selection	February 2024
Agreements Awarded	September 2024

C.2. Selection Process Steps

Proposals that do not meet the requirements or objectives of this CFP may be rejected. Proposals will be reviewed and selected through a merit-based (criteria-driven) process comprised of the following steps.

C.2.1. Initial Screening

The AMD will conduct an initial screening to ensure that the proposals meet the following minimum requirements:

- the applicant meets the eligibility requirements stated in this CFP;
- the application meets the content requirements of the CFP package, including: submission of a technical proposal, responses to the evaluation criteria, and a budget proposal; and
- the application is submitted by the due date stated in this CFP.

C.2.2. Application Review Committee – Technical Sufficiency Evaluation

Applications will be scored against the evaluation criteria described in *Section E. Evaluation Criteria* by an Application Review Committee (ARC) made up of experts in relevant disciplines selected by the AMD. The ARC will:

- ensure the proposed project(s) meets the description of eligible projects and meets the objectives of this CFP;
- review all applications individually and evaluate them against the evaluation criteria included in this CFP;
- participate in a consensus discussion with other ARC members and make recommendations for funding based on technical sufficiency; and

- identify clarification questions for applicants or to be considered in the management review.

C.2.3. Management Review

The AMD will provide from the ARC to the Commissioner's Office those proposals that met the viability threshold (minimum technical sufficiency). The Commissioner's Office, in consultation with the AMD and pursuant to the IRA Program Management Plan, will prioritize projects to ensure the total amount of all awards do not exceed available funding levels. The management review will also ensure all projects meet the scope, priorities, requirements, and objectives of this CFP and the IRA. Management may also prioritize projects to ensure multiple project types and Reclamation offices are represented.

Section D. Proposal Content Requirements

D.1. Proposal Format and Length

The font shall be at least 12 points in size and easily readable. Page size shall be 8½ by 11 inches, including charts, maps, and drawings. Margins should be standard 1-inch margins. Oversized pages will not be accepted.

The technical proposal and evaluation criteria section shall be limited to a maximum of **10 pages**.

D.2. Proposal Content

The proposal must include the following to be considered complete:

- Technical proposal and evaluation criteria
 - Executive Summary
 - Project Technical Description
 - Evaluation Criteria
- Project Budget
 - Total Project Costs
 - Budget Proposal Table
 - Budget Narrative

D.2.1. Executive Summary

The Executive Summary should not exceed one page and is intended to be a high-level summary of the proposed project. The executive summary should include the following information:

- Project Title: The title should convey the nature of the project and its location.
- Project Eligibility: Describe how the project meets eligibility requirements of this CFP. See *Section B. Eligibility Information* for eligible project information.
- Applicant Information: Reclamation contact, Reclamation office, and region.
- Project Summary: Briefly summarize the work proposed in a manner appropriate for website posting. The summary should include:
 - the regional/area office leading the effort and the general geographic project location (city, county and state);
 - a one-paragraph project summary that specifies the purpose of the project (e.g., why is it needed, who is involved and what gave rise to the project), the work proposed, and briefly identify how the proposed project contributes to accomplishing the goals of this CFP; and
 - a list of any partners.
- Performance Period: Project length and estimated completion date.

- General project location: A general description of the area where the project will be conducted, particularly any site-specific application of the project results.

D.2.2. Technical Approach Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the existing facility that will be improved. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the project and to address any aspect of the project that reviewers may need additional information to understand.

D.2.3. Evaluation Criteria

The evaluation criteria portion of your application should be addressed in the technical proposal section and will count towards the 10-page limit for the Technical Proposal and Evaluation Criteria portion of your proposal. See *Section E. Evaluation Criteria* for the evaluation criteria.

D.3. Budget

The budget and narrative should reflect the level of effort required to complete the project. The three required components to the budget are described in the subsections below.

D.3.1. Total Project Costs and Budget Proposal Table

The total project costs are the sum of all allowable cost items, including any voluntary cost-share contributions. Please provide the total project costs in the format provided in Table 1.

Table 1. Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested funding	\$
*Cost share contributions from region	\$
*Cost share contributions by partners	\$
TOTAL PROJECT COST	\$

*Cost share contributions are encouraged but not required. If you have no cost share, leave these rows blank.

Include a budget table that features high level budget costs for Reclamation non-labor equipment, supplies, materials, etc.

D.3.2. Budget Narrative

The budget narrative provides a discussion of, or explanation for, items included in the budget proposal table. Identify how these costs were estimated (i.e., quotes, previous similar project, or other methodology).

Section E. Evaluation Criteria

E.1. Criteria

The evaluation criteria portion should be addressed in the technical proposal section of the application. Applications should thoroughly address each criterion and any sub-criterion in the order presented below. **Applications will be evaluated against the evaluation criteria listed below.** It is suggested that you copy and paste the evaluation criteria and sub-criterion immediately below into your application, followed by your response, to ensure all information is adequately addressed.

Evaluation Criteria: Scoring Summary		Points
A. Operation & Maintenance Considerations		30
B. Non-Federal Cost Share and Support for Project		20
C. Project Implementation and Readiness to Proceed		20
D. Clean Energy, Water Efficiency, and Additional Benefits		15
E. Safety & Security Considerations and Benefits		15
	<i>Total</i>	<i>100</i>

E.1.1. Evaluation Criterion A – Operation & Maintenance Considerations (30 Points)

Up to **30 points** may be awarded based on the evaluation of the benefits that are expected to result from the proposed project in relation to O&M benefits. This criterion evaluates the extent to which the project will hinder access to the canal and hinder the ability of Reclamation to perform visual inspections on the facility. In addition to canal access and inspection considerations, Reclamation shall consider and evaluate all impacts, both positive and negative, to underlying O&M associated with the project and facility, including the expected lifecycle costs of the project. Describe the methods used to collect and analyze data to evaluate both positive and negative project impacts to O&M. The ideal project will result in 100% non-Federal O&M, with 100% non-Federal O&M receiving the most points for this criterion.

E.1.2. Evaluation Criterion B—Non-Federal Cost Share and Support for Project (20 points)

Up to **20 points** may be awarded for proposals that include partner involvement and a plan for disseminating, transferring, and communicating project results with others, including internal

Reclamation offices and external partners. Please respond and provide support for your responses to each of the following sub-criteria.

1. Describe how this project includes partner involvement. Partners may include Reclamation staff from other offices or divisions, customers, operating partners, stakeholders, and other collaborators, including other government agencies, or universities, etc. If so, please respond to the following sub-criteria. If not, please explain why there are no partners.

- Are the partners contributing cost-share (cash or in-kind)? Are partners contributing other resources (e.g., expertise, or input and feedback to the project)?
 - Consideration will be made for disadvantaged communities that are unable to provide a non-Federal cost share and will be evaluated equally to those that can provide financial contributions. If requesting this consideration, please provide a substantiated explanation describing the applicant's circumstances and justifying the need for this consideration.

2. Describe how the methods to collect and analyze data to evaluate project impacts (both positive and negative) and how those impacts and project results will be communicated to project partners, to Reclamation staff, and to interested stakeholders and water resources managers.

E.1.3. Evaluation Criterion C—Project Implementation and Readiness to Proceed (20 points)

Up to **20 points** may be awarded based on the applicant's plan for implementing the project and demonstration of their likelihood of success by selecting appropriate team members, describing the project clearly, and including an adequate budget. Proposals that include a reasonably detailed work plan, with a schedule and specific milestones for completing the work, include appropriately qualified team members, provide a budget that is appropriate for the work proposed, and include reasonable level of detail describing the project are more likely to succeed and will, therefore, receive the most points under this criterion. Your responses to the following sub-criteria should reflect an understanding of the tasks required to complete the project. Please respond and provide support for your responses to each of the following sub-criteria:

1. Briefly describe and provide support for the approach and methodology that will be used to meet the objectives of the project.
2. Describe the work plan for the project. Include an estimated project schedule showing the stages and duration of the proposed work, including major tasks, milestones, and dates. Note: use of a table or Gantt chart to show the schedule is suggested.

E.1.4. Evaluation Criterion D—Clean Energy, Water Efficiency, and Additional Benefits (15 points)

Up to **15 points** may be awarded based on the extent that the project produces clean energy, increases water efficiency, and/or has additional benefits. Both quantitative and qualitative data shall be used to show measurable increases in clean energy production and water efficiency of Reclamation facilities. Please respond and provide support for your responses to each of the following sub-criteria:

1. Describe the clean energy production the project will produce over time, how it will offset energy usage of the facility or local area, the expected kilowatt hours of energy production, and the estimated number of years it will take for the project to return the initial investment involved in the research, design, construction, and implementation of the project. Reference academic, industry, or other studies or reports showing scalable, quantitative scientific data to support the energy production assertions.
2. Describe benefits the project will have on Reclamation water in terms of reducing evaporation losses, reducing O&M by decreasing growth of aquatic plants and algae, and any other potential benefits related to water efficiency and O&M that the project might have. Reference academic, industry, or other studies or reports showing scalable, quantitative scientific data to support the water efficiency assertions.
3. Describe any additional benefits associated with your project including those supporting Administration priorities (e.g., Environmental Justice, Disadvantaged Communities, a design that supports interchangeability of products).

E.1.5. Evaluation Criterion E—Safety and Security Considerations and Project Benefits (15 points)

Up to **15 points** may be awarded based on applicant's safety and security considerations for the design, construction, and implementation of the project. Please respond and provide support for your responses to each of the following sub-criteria:

1. Describe what safety and security concerns might occur during construction and implementation of the project, and how the applicant plans to mitigate them.
2. Describe how the project might alleviate existing safety and security concerns at the project site due to the project's construction and implementation.