

PHYTOPLANKTON CARBON SOLUTIONS PROGRAM

REQUEST FOR PROPOSALS

RFP#4: Evaluating Social and Ecological Desirability of OIF

REQUEST FOR PROPOSAL OVERVIEW

- **RFP #:** 4
- **RFP Title:** *Evaluating Social and Ecological Desirability*
- **Award Period:** Up to 30 months
- **Award Amount:** Up to \$3 million
- **Letters of Intent (LOI) Due:** Sunday, November 15, 2026, at 23:59 Eastern Time (ET)
- **Full Proposal Due:** EDF will invite full proposals and communicate due date to LOI applicants invited to submit a full proposal.
- **Proposal Contact Email:** oceanspcs@edf.org

EDF's Phytoplankton Carbon Solutions Program is soliciting proposals to assess the social-ecological desirability of Phytoplankton Carbon Solutions (PCS), focusing particularly on ocean iron fertilization (OIF) pathways. The successful team will develop and implement a framework for the assessment of social-ecological desirability of OIF, enabling decision-makers to systematically evaluate potential risks, benefits, and trade-offs in key geographies and under specific deployment scenarios. Knowledge gained through the framework's development and iterative refinement through public and stakeholder engagement will directly inform critical PCS stage-gate decisions, future research priorities, and funding investments. Research activities will be informed by and will inform scenario development stemming from RFP #1 *Characterization of Critical Uncertainties for Ocean Iron Fertilization*, as well as other Consortium research activities.

This solicitation is one of several PCS focus areas, and successful applicants will join a broader consortium to collaboratively advance PCS research priorities, working closely with other funded teams (see RFPs underway on [EDF's PCS funding opportunities page](#)).

I. BACKGROUND

Evaluating CDR approaches like PCS and specifically OIF as potential climate mitigation tools requires assessing both feasibility and desirability. Feasibility concerns what can be achieved by a particular actor in a given context and for specific audience, whereas desirability concerns whether research activities or potential deployment are considered acceptable or desirable according to relevant standards, values, principles, or beliefs, under social, environmental, spatial, and

temporal conditions (e.g., considering geography, time horizon, actor, and audience)¹. Determining whether continued research or the eventual deployment of OIF would be desirable is inherently challenging as desirability may depend on who is affected, where impacts occur, and over what timeframe they are assessed.

The highly interconnected nature of marine systems means that interventions in one location can generate ecological and social consequences across distant geographies. As OIF and other PCS approaches directly influence marine biological communities, their effects may extend from individual species to entire ecosystems. These impacts are likely to be valued differently by different communities, ocean stakeholders and rightsholders, governments, or other entities, raising complex societal, governance, and natural resource management questions. Furthermore, these impacts may be felt over long-time scales, with effects becoming evident years or even decades after intervention.

The desirability of OIF activities has been debated for decades, ranging from consideration of localized research activities by commercial and academic actors within specific geographies and cultural contexts to discussions in international governance forums such as the London Convention/London Protocol. While these efforts have provided valuable insights into different aspects of desirability, they have often been fragmented and context-specific, limiting their ability to address uncertainty about the role of OIF now and in the future. As a result of uncertainty in critical dimensions including the nature of potential deployment scenarios, the climate effectiveness of OIF interventions, and the social, cultural, political, economic, and ecological consequences associated with different pathways of deployment, assessment of OIF desirability has often remained speculative and difficult to generalize across contexts and scales.

There is a need for a robust framework for assessing PCS desirability, developed through a participatory process that fosters trust in the approach and its outcomes. Without such a framework, the public, decision makers, funders, and other stakeholders will be unable to adequately evaluate tradeoffs associated with PCS. This RFP and the associated PCS Research Program are guided by a comprehensive research framework published by Ocean Visions (further described in Section 9), which prioritizes research on OIF pathways due to theoretical scalability.

II. OBJECTIVES

The objectives of this call for proposals are three-fold:

Objective 1: Develop an assessment framework to evaluate the social-ecological desirability of OIF. Framework development should be aware of and integrate/harmonize relevant existing

¹ For a discussion of these concepts see: Tank, L., Voget-Kleschin, L., Garschagen, M., Boettcher, M., Mengis, N., Holland-Cunz, A., et al. (2025). Distinguish between feasibility and desirability when assessing climate response options. *Npj Climate Action*, 4(1), 34. <https://doi.org/10.1038/s44168-025-00237-2>

frameworks², for particular application to OIF. The framework should be flexible to allow for implementation across geographic scales and engagement with diverse audiences, adaptable as new knowledge is gained through program activities and beyond the lifespan of the PCS Program, with relevance to potential field trials of OIF and other PCS approaches. The framework ought to be suitable for informing social risk assessments and decision-making, where future OIF impacts are compared to “business as usual” and other mitigation scenarios.

Objective 2: Test and validate the assessment framework in at least two geographies. This objective must be achieved through the engagement of broad stakeholders and publics in the context of deployment scenarios, informed by the research activities and outputs of other RFPs and discussions across the PCS Consortium. Implementation of the framework should aim to yield data on the social-ecological desirability of OIF while feeding back on the iterative development of the assessment framework. The Southern Ocean and subtropical regions constitute core regions of interest for the PCS Research Program as primary deployment regions for OIF. However, given the likely widespread nature of potential impacts of OIF, projects should consider a broader geographic scope for potential impacts. Projects should clearly articulate why and how engagement in chosen ‘receiving’ geographies or contexts in proximity to and/or far removed from the deployment sites presents critical opportunities to achieve objectives of this RFP, and how they will contribute to advancing the Program's research goals and decision making within the stage gate structure.

Objective 3: Participate in and guide PCS Consortium discussions. The RFP team will contribute to the development of OIF deployment scenarios while also contributing to the development of the Consortium’s uncertainty framework, in partnership with the RFP #1 team.

III. VISION OF SUCCESS

A successful outcome of this RFP will be the development of a desirability assessment framework that enables the identification and prioritization of key stakeholders, social considerations, and ecological issues relevant to OIF research and potential deployment. The framework should integrate and harmonize existing frameworks and be developed through a rigorous, participatory process that fosters trust in both the assessment process and its outputs. Such trust is critical to ensuring that findings generated through use of the framework are viewed as legitimate, credible, and actionable. Ultimately, the framework will provide a validated tool for assessing OIF desirability that can be applied and iteratively refined by diverse stakeholders within and beyond the PCS program.

² For example, Baatz, C., Tank, L., Bednarz, L.-K., Böttcher, M., Morganti, T. M., Voget-Kleschin, L., et al. (2025). A holistic assessment framework for marine carbon dioxide removal options. *Environmental Research Letters*, 20(5), 054047. <https://doi.org/10.1088/1748-9326/adc93f>

The project team will recruit local expertise and/or collaborate with relevant local/regional community groups, leads, or entities in proposed receiving geographies when implementing the assessment framework. Implementation of the framework in distinct geographies will integrate research outputs across the Consortium, including, but not limited to, deployment scenarios co-developed through Consortium discussions, the uncertainty framework developed under RFP #1, and quantitative outputs from modeling and related research that provide empirical evidence of potential impacts to inform engagement efforts under RFPs #2 and #3. Applying the framework will enable the identification and prioritization of social and ecological dimensions most critical to assessing OIF desirability in at least two distinct geographic contexts, while also considering impacts and interests that extend across broader spatial and temporal scales. Framework implementation will also generate insights to support its iterative refinement throughout the PCS Program.

Application of the framework through consultative processes will generate insights into effective forms and means for engaging potentially affected communities, while also advancing the PCS field. The desirability framework and data stemming from its application inform prioritization of further research on OIF desirability and decision-making.

IV. SCOPE OF WORK

Overview

This RFP will support one team with a Lead PI who coordinates additional researchers or working groups, operating under shared protocols, to develop and execute the Scope of Work designed to develop and apply a desirability assessment framework that focuses on social and ecological dimensions. Although not required, we foresee the team being composed of at least two sub-teams with related but distinct areas of expertise, including one with expertise in assessment framework development and the other with expertise in framework implementation (e.g., engagement with various stakeholders and publics in different contexts for different applications). The project should generate outputs that should be useful for [PCS stage-gate assessment](#) and funding decisions, including to the specific identification of local, regional and global social and ecological risks collected through engagement with broad publics.

Research Questions

Guiding research questions include, but are not limited to:

- How should desirability be defined, operationalized, and evaluated to enable robust assessment of PCS across different geographic, social, ecological, and governance contexts?
- What are the potential near- and far-field socio-economic and environmental risks, and co-benefits associated with PCS, and how are these perceived by specific audiences?
- What levels of negative impact, if any, are considered acceptable, by whom, and through what decision-making processes?

- Which social, environmental, economic, or governance co-benefits increase the desirability of research and potential deployment?
- How should similarities and differences in desirability across geographic, social, and ecological contexts inform PCS research, governance, and decision-making?
- Can [low-conflict pathways](#) for PCS research be identified, and what are their characteristics?

Workstreams

Proposed projects must, at minimum, encompass the following workstreams:

1. **Development of a desirability assessment framework.** Design and develop an assessment framework for evaluating the social and ecological desirability of OIF under a range of potential deployment scenarios. Framework development should be guided by best-practice principles and key considerations for desirability assessment across geographic, social, ecological, and governance contexts.
2. **Implementation of the assessment framework.** Implement the assessment framework in at least two distinct geographies to inform key dimensions of social and ecological desirability, including risk-based decision-making, and leveraging empirical inputs developed through PCS Consortium research activities as well as other relevant sources outside the Consortium to facilitate connections to work at local, regional and international scales.
3. **Evolution of the assessment framework.** Implementation of the framework will serve as a testing ground for the framework. The funded team should evaluate the framework through real-world application, using the collected information to iterate upon the framework as originally developed. The result is expected to be a framework that is field deployable in a range of contexts, as informed by implementation in specific contexts, and capable of evolving beyond the lifespan of the PCS Program as more data become available and the public gains knowledge.
4. **Quantification and prioritization of key desirability dimensions.** Implementation of the framework will provide critical data on:
 - Identification and characterization of key audiences
 - Particular areas of risk or concern as pertaining to OIF, for different audiences in particular contexts, and through consortium discussion how these areas could be addressed or explored through follow-on research
 - Low-conflict pathways for PCS research
 - Which dimensions of desirability should be prioritized for further research
 - How uncertainties in the nature and magnitude of impacts, or in the underlying definition of deployment scenarios, affect OIF desirability
5. **Deployment scenario development.** In partnership with the team leading RFP #1, provide input to the development of deployment scenarios, leveraging social and natural science

capacity across the team alongside other sources of knowledge including information collected through core RFP activities including external engagements. The scenarios will be used to guide framework implementation activities in this RFP, serve as input in the setup of model runs in RFP #2, and provide context for research conducted under RFP #3. The development and shared use of scenarios across the PCS Consortium teams will be discussed at the first Consortium Meeting.

6. **Engagement methods and approach recommendation.** Leveraging engagement activities that are part of framework implementation, synthesize approaches for effective engagement to inform PCS Consortium activities including the communication of results to audiences relevant to the PCS Project as well as future external activities pertinent to continued research on OIF and other PCS approaches.
7. **Consortium collaboration.** The successful team will work collaboratively across the PCS Consortium, as project activities are intended to both leverage and inform activities across the research consortium including in the development of the uncertainty framework and deployment scenarios (RFP #1) and the usage of quantitative oceanographic research results in desirability assessments (RFP #2-3). Required activities include participation in annual PCS Consortium Meetings and regular cross-project leads meetings, development of shared goals, and leading exploration of OIF desirability in support of stage-gate assessments throughout the program's lifetime. Consortium teams are expected to adapt their research plans as new findings emerge from within and outside the Consortium. Principal Investigators may adjust their team composition to accommodate shifting priorities.

Out of Scope Activities

- Non-OIF scenarios
- Biogeochemical research including numerical modeling (these activities will be pursued through other RFPs)

V. REQUIRED DELIVERABLES

Within the first 6 months:

- Deliver a detailed scope of work that proposes priority topics, approaches and team roles for executing the full project plan. Synchronize that plan through the PCS Consortium, including with RFP #1 team members as it pertains to scenario development and uncertainty evaluation as well as RFP #2-3 for the usage of quantitative analysis results in desirability assessment activities.

Within the first 12 months:

- First draft of the desirability assessment framework and deployment scenarios, co-developed with RFP #1 grantees

- Initial field data on social and ecological desirability collected through implementation of the framework

Months 13 to end of project (maximum possible funding period is 30 months):

- Refined desirability assessment framework
- Synthesized results on social and ecological desirability through framework implementation in all proposed geographies
- Synthesized approaches for effective engagement

Throughout the grant period

- Active participation in annual PCS Consortium Meetings, regular cross-project leads meetings and EDF check-in meetings, and any additional collaborations emerging from shared goals within the Consortium.
- Provide recommended updates to deployment scenarios and uncertainty assessments and be responsive to new findings or priorities that emerge from within and outside the Consortium.
- Regular progress reporting to EDF, aligned with project milestones and EDF synthesis activities; format and frequency to be determined jointly by the grantee and EDF.
- Contributions to EDF-led synthesis and public communication of PCS research progress.
- Open-access publication of the framework, the data stemming from its implementation, and associated scenarios, following FAIR practices and other relevant best practices.

Project Conclusion:

- Final report (EDF to provide template)
- A peer-reviewed scientific publication, submitted within 6 months of the award conclusion.
- Open-access data publications, concurrent with the scientific publication.

VI. BUDGET AND GRANT DURATION

EDF intends to fund work that comprehensively addresses the three objectives listed above. The total funding available is up to \$3 million over a period of up to 30 months, inclusive of indirect costs (capped at 15%). Following the LOI stage, EDF may suggest the addition of expertise or request the integration of proposals or elements of proposals to formulate a team.

Funds may be used to support personnel, research expenses, workshops and convenings, participation in PCS Consortium meetings, synthesis activities, honoraria or similar for public engagement, and publication and dissemination costs.

Consistent with the principles of the PCS Research Program, funds may not be used to support commercial PCS activities or activities tied to carbon credit transactions.

Budgets should reflect the full scope of potential activities.

VII. APPLICANT TEAM

Principal Investigators (PI) Criteria

All PIs must hold a PhD, be affiliated with a research institution, and have a publication record relevant to the scope of work and role on the project. Multi-institution and international teams are encouraged.

We require the designation of a Financial Lead who is the person responsible for financial and grants management for the project as a whole and acts as the lead reporting entity on finances and grant management to EDF. We also require the designation of a Lead PI who is responsible for the overall success of the project, bringing together distinct workstreams and technical aspects of the work to achieve overall objectives of the project. The Lead PI will act as the point for EDF for the scientific and technical aspects of the project. The Financial Lead and Lead PI could be the same for the project, but it is not required.

Full proposals will require a description of the proposed leadership structure, beyond the designation of the Financial Lead and Lead PI. For example, the Lead PI may choose to share leadership across various work streams within a project among multiple co-PIs. The definition of these roles is for operational clarity but not meant to impose a particular structure for the day-to-day functioning of the team. Applicants applying to multiple RFPs may serve in the Lead PI role in only one proposal.

At least one PI on the team must demonstrate prior experience leading a research project of comparable scale. Early Career Researchers (<10 years since obtaining a PhD) may serve as a PI. PIs of the successful team may be part of applicant teams to future Consortium funding opportunities but may not serve as Lead PI on multiple proposals. This approach helps ensure broad participation and leadership opportunities across the funding portfolio.

Team Criteria

The project team will be evaluated based on the collective expertise, collaborative approach, and demonstrated ability to execute the proposed work. Team structure will also be considered, including the extent of international collaborations, career stage diversity, early career researchers in substantive rather than nominal roles, and representation of and beyond the established marine CDR research community. Teams will be expected to articulate plans to implement best practices in the conduct of research, including in the application of codes of conduct such as the [AGU Scientific Integrity and Professional Ethics Policy](#) and [Aspen Code of Conduct for Marine Carbon Dioxide Removal](#). Principles guiding the engagement of broad publics as part of framework development or implementation should be explicitly outlined.

Teams may include members affiliated with non-research institutions (e.g., consulting, marine industry).

Ideal Team: Integrated, cooperative inter or trans-disciplinary team of natural and social scientists as well as other outside experts and stakeholders with capacity to envision and execute critical innovations. Strategic capacity, leadership skills and open collaborative spirit will be essential.

VIII. APPLICATION PROCESS

Step 1: Letter of Intent

LOIs must be prepared using the EDF-provided template and submitted as a single PDF through the webform on EDF's PCS funding webpage. Submissions are due by **Sunday, November 15, 2026, at 23:59 Eastern Time (ET)** and will undergo internal review by EDF.

Step 2: Full Proposal

LOIs selected to advance will be invited to submit a full proposal. EDF will provide invited applicants with a proposal template and submission deadline. Invited proposals will be evaluated via a scientific peer-review panel, which will provide a funding recommendation to EDF. EDF makes the final funding decision.

RFP# 2 Proposal Timeline

LOI submission deadline	15 November 2026
Invitation for full proposal	25 November 2026
Full proposal due	<i>EDF will communicate the full proposal due date to applicants invited to submit a full proposal.</i>
Anticipated award decision	12 February 2027
Expected grant start date	1 April 2027

Please submit any questions related to the LOI and/or Full Proposal for this RFP to oceanspcs@edf.org.

IX. CONNECTION TO OCEAN VISIONS PHYTOPLANKTON CARBON SOLUTIONS RESEARCH FRAMEWORK

In January 2026, Ocean Visions published the [Phytoplankton Carbon Solutions Research Framework](#), which emphasized the identification of affected communities and the exploration of desirability of PCS research and deployment as critical dimensions of PCS research.

EDF's PCS Research Program, supported by the Grantham Environmental Trust through the Ocean Resilience and Climate Alliance (ORCA), responds directly to that recommendation. This RFP seeks proposals to interrogate the social and ecological desirability of OIF through the development and implementation of a desirability assessment framework. This research will provide key input into decision making to inform whether, in what way, and on what topics continued research into OIF PCS should continue, focusing particularly on ocean iron fertilization (OIF) strategies.

This RFP funds the core social science component of PCS Research Program and that will help inform and advance the work of the broader PCS Consortium. The objectives of this RFP build on the following recommendations from the [Ocean Visions' PCS report and PCS stage-gate framework](#):

- **PCS Recommendation 9:** Prioritize Community Participation in Research Consideration and Design. “Prioritize and support collaboration with social scientists and with local and potentially affected communities and other interested actors in PCS investigations, particularly in projects that involve field components. Adopt existing research codes of conducts and best practices for mCDR RD&D to effectively engage relevant non-scientific and local communities early to improve the utility of research outcomes to inform decisions. For any PCS RD&D program, develop and be guided by an international advisory board with diverse geographic and scientific perspectives. The advisory board should be active in establishing grantmaking priorities, ongoing progress evaluation, and future program direction. Advisory boards may also be relevant for specific PCS projects.”
- **PCS Recommendation 10:** Build Targeted Capacity in Affected Coastal Communities and Fisheries. “Build fisheries and coastal community capacity to engage early and effectively on PCS proposals and enable co-design of PCS research and development. Enhance fishing industry and community understanding of risks and co-benefits of PCS and develop mechanisms and best practices for the community to engage with and co-design place-based research. Further seek out and integrate scientific priorities and concerns raised by affected communities, including academia, fishing industries, high seas authorities, governments, coastal and Indigenous communities, and ocean conservation groups.
- **PCS Recommendation 11:** Ensure PCS Impacts Are Contextualized Relative to Alternative Scenarios. “Contribute to efforts developing a comparative risk framework and ensure that PCS pathways are accurately represented within such a framework. Stay abreast of and collaborate actively with other CDR and mCDR entities to increase efficiencies across shared investigations and maximize future comparative capacities. Support and adopt best practices and other frameworks aimed at improving cohesion, comparisons, and utility of mCDR research outputs. Share PCS knowledge with groups working to enable mCDR RD&D and integration of mCDR in broader climate management governance and policy discussions.”