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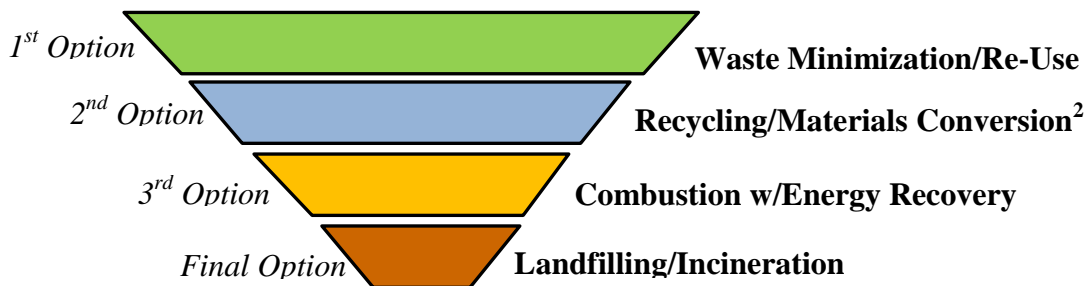
## Request for Proposals - Solid Waste Sustainability

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### Background

The sustainability movement has reached the business models of nearly every industry in the United States, and many companies have set aggressive sustainability goals that include how their waste stream is managed. Dozens of municipalities and states have launched similarly aggressive initiatives. In late 2010, the EREF Board of Directors made a decision to ensure research funded in the future reflected EREF's long-term strategic research plan to address all areas of integrated solid waste management, with a strong focus towards research that increased sustainable solid waste management practices. Historically, roughly 75% of EREF's funding dollars have been allocated to landfill related research. While landfills continue to play an important role in integrated waste management, and will receive the majority of MSW in the near future in the U.S. (and in the majority of other countries), it has been recognized that a sustainable future requires consideration of other end-of-life technologies for discarded materials. This strategy is exemplified in EREF's management hierarchy for discarded materials (Fig. 1).

Figure 1. EREF Management Hierarchy for Discarded Materials (adapted from the EPA)<sup>1</sup>



<sup>1</sup> This hierarchy does NOT imply a priority or preference in funding research.

<sup>2</sup> Materials conversion includes: composting, anaerobic digestion, conversion to biofuels/chemicals, and other technologies or processes that transform waste to useful end products.

Thus, sustainability, as it relates to solid waste management is a focus on utilizing waste as a resource. Although EREF will continue to fund landfill-related research via its general RFP (see [www.erefndn.org](http://www.erefndn.org) for details), the desired outcomes of research funded by this targeted sustainability RFP are to:

- (a) facilitate the development of new and existing technologies/practices prior to the landfilling option,

- (b) develop robust data that will provide guidance regarding how product manufacturing is shaping the downstream disposal of wastes (e.g. product disposability/biodegradability, reduced packaging), and
- (c) evaluate 'next generation' technologies for processing or converting discarded materials into energy or beneficial products.

EREF is an IRS 501(c)(3) non-profit organization and is one of the largest sources of funding for solid waste research in the U.S. EREF is not affiliated with any other entity or group and governed by a duly elected Board of Directors. The Board of Directors is the decision-making body that has responsibility for establishing a set of basic policies that define program interests and fundamental objectives to be served by the Foundation.

### **Research Focus Areas**

Submissions of scientific research proposals related to sustainable solid waste management practices are invited in the following areas:

- A. Waste minimization
- B. Recycling
- C. Waste conversion to energy, biofuels, chemicals or other useful products. This includes, but is not limited to, the following technologies:
  - Waste-to-energy
  - Pyrolysis/Gasification
  - Oxidation
  - Anaerobic digestion
  - Composting
- D. Strategies to promote diversion from landfills (e.g. separating organics, market analysis, optimized material management, logistics, etc.)

Desirable aspects of the above topics, in addition to or as part of hypothesis driven applied research, also include:

- economic or cost/benefit analyses,
- feasibility studies for untested technologies or management strategies,
- life cycle analysis or inventory, and
- analyses of policies that relate to the above (e.g. extended producer responsibility, recycling goals, carbon legislation, bottle bills, etc).

Proposals submitted in response to this RFP that do not fit within the focus areas noted herein ***will not be reviewed***. Projects and research previously funded by the Foundation can be viewed on its website at [www.erefndn.org](http://www.erefndn.org). Previously awarded grants have ranged from \$15,000 to over \$500,000 with the average grant amount being \$100,000.

### **Funding Restrictions**

#### *Multiple Proposal Submissions*

Proposal submissions are limited to one submission per primary Principal Investigator (PI), however a (PI) may be on multiple proposals if it is demonstrated that it will not affect his or her ability to fulfill the scope of work in the primary investigation.

### *Overhead Costs*

EREF will not pay indirect or overhead costs in excess of 25%.

### *Limitations*

It is EREF policy that any results from funded projects be made publicly available to all who are interested without bias. Thus, EREF will typically avoid funding proposals prepared with the following aims:

- To directly commercialize and/or patent a particular technology or process
- To provide venture capital or operating funds for start-up companies
- To provide funds that primarily aid in the formation or initialization of community programs (e.g. recycling programs, re-use projects, etc.)
- To directly support lobbying activities
- To fund conferences or events, except as noted below under “Educational Sustainability Projects”

### **Educational Sustainability Projects**

Note that one of EREF’s primary focal areas within its mission is to provide education. Thus, EREF welcomes collaborations or partnerships with entities seeking to develop educational materials for sustainable solid waste management, including conferences or events, which advance the foundation’s educational mission. However, this is typically done with EREF being a primary stakeholder/partner in the event. Thus, concepts for educational projects should NOT be submitted as a proposal. Rather, the EREF office should be contacted directly to discuss the potential for partnership or collaboration at (919) 861-6876 ext. 102 or [bstaley@erefdn.org](mailto:bstaley@erefdn.org).

### **Submittal Deadlines**

EREF has two submittal deadlines per year for this targeted proposal:

January 5

July 15

Proposals will be accepted 10 days prior to the deadline dates listed above up to the close of business (5:00 p.m. eastern time) on the deadline date. If not received by this time, proposals **will not** be considered. *If any of the above dates fall on a weekend, then the deadline will be the Monday following the due date.*

### **Cost Sharing**

Because the amount of funding for research is limited, EREF encourages submitting parties to form partnerships with other funding sources (real-dollars or in-kind services). Parties should identify the sources and amounts of external funding in their submissions.

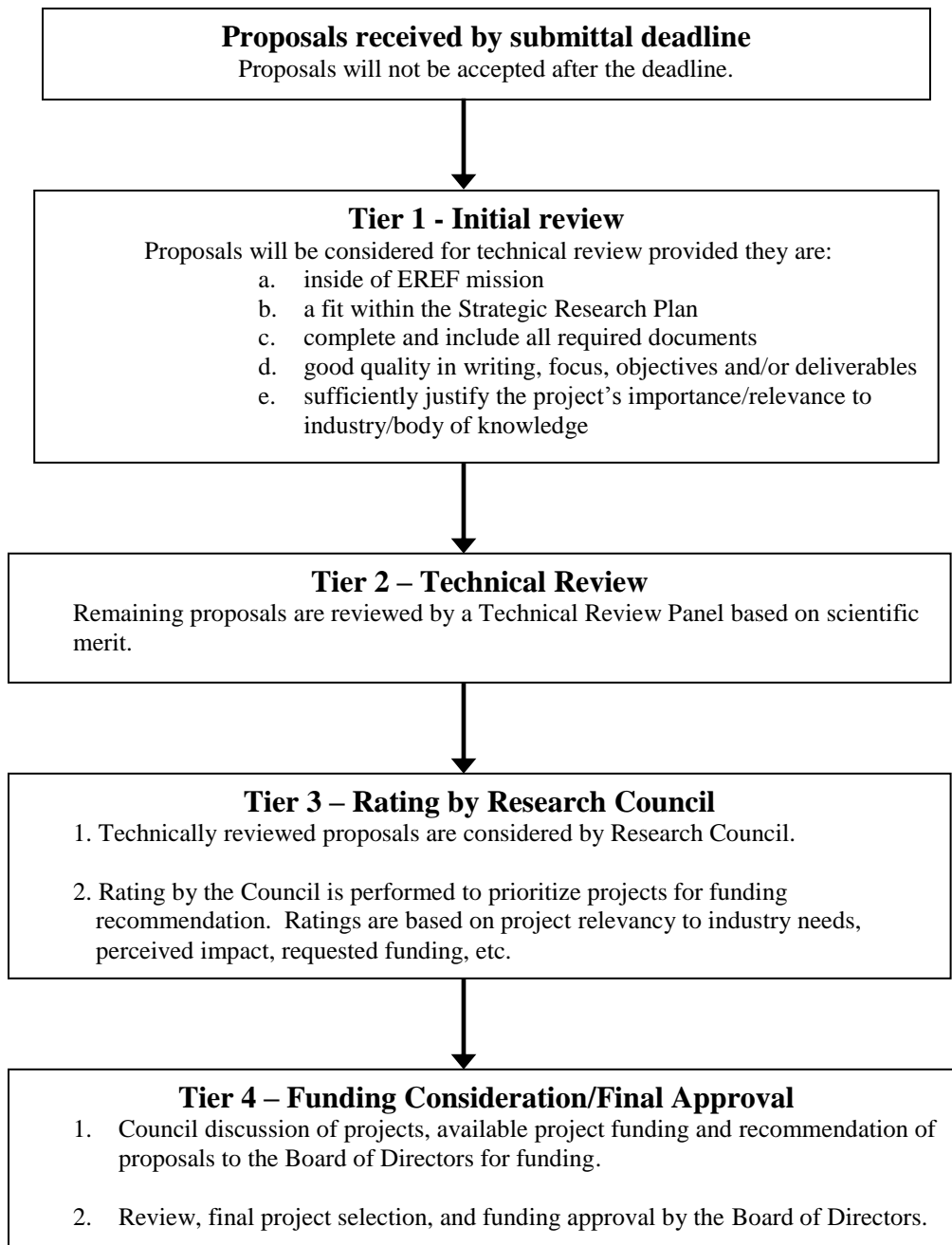
### **Eligibility**

EREF does not discriminate against any parties for any reason responding to this request for proposals.

## Review Process

All proposals received are subjected to a formal review process as shown below that is based upon: technical merit of proposal, relevancy of project to industry needs, perceived impact of research, experience and resources of project team, budget, and overall proposal quality.

Proposals passing the Tier 1 review will be reviewed and discussed for potential funding by the EREF Research Council, a committee of technical experts formed to assist the EREF Board of Directors in project selection. Projects recommended by the Council will be considered by the BOD for funding. Awards will be made at the discretion of the BOD pending available funds.



## Proposal Contents

All proposals shall be in English. Proposals should not contain more than ten (10) **numbered** pages in 12-point Times New Roman font. All proposals **MUST** include the following information for consideration:

- Proposal Summary (**please use the attached template**)
  - This summary is *not* included in the 10-page limit
  - The proposal summary may be separated from the main body of the proposal during the review process. Thus, both the main body and summary should be written as stand-alone documents and should not refer to one another.
- On **BOTH** the **Proposal Summary** and the **first page** of the proposal please include the following:
  - Project title and name(s)/contact information of principal investigator(s)
    - Email addresses and one (1) contact phone number are **REQUIRED**
- Paginate proposal, starting *after* Proposal Summary page
- Description of proposed activity and scope of work (including literature review that identifies research already performed, as related to the proposed project)
- Project objectives
- Relevance to the EREF Strategic Research Plan
- Narrative of anticipated benefits to the solid waste management industry
- Deliverables
- Time schedule with milestones
- Detailed budget including any information regarding additional funding sources
- Cited References (not included in 10-page limit, but please be as brief as possible)
- Resumés of key investigators (<2 pages each; not included in 10-page limit)
- Letters of support are not required, but if included should be limited to 3 separate letters; more than 3 letters will be counted against the 10-page limit

Multiple year projects will be considered for funding. EREF may request additional items be added to the proposal.

## Proposal Submission

All proposals shall be submitted electronically via email in as indicated below. Please indicate in the email subject line and text that the proposal being submitted is in response to the “Sustainable Solid Waste Management RFP”.

### *File Attachment and Naming*

The proposals must be attached as a **single** Microsoft Word® or in portable document format (PDF) and named as follows:

PI Last Name\_AbbreviatedInstitutionName\_MonthSubmittedYearSubmitted\_proposal

#### Example

*Dr. John Smith from Arizona State submits a proposal in August 2010 then the file submitted would be named: Smith\_ASU\_0810\_proposal.doc (or .pdf)*

### *Multiple Files*

Submittal of multiple files will not be accepted.

### *Cover Letters*

Please do NOT submit a formal cover letter unless this is required by your institution. If submitting a cover letter, it will be included in page limitation; thus, if a cover page is required by your institution, the preference is to include it in the text of the email submission of your proposal.

### *Hard Copy Submission*

All submissions should be in electronic form. However, if a full electronic submittal is not possible, the submitter must contact EREF *before* sending a hard copy.

### *Where to Submit/Questions*

Submittals and questions related to this RFP should be directed to:

Bryan F. Staley, Ph.D., P.E.  
President  
Telephone: 919.861.6876 ext. 102  
proposals@erefdn.org

### **Required Project Deliverables if Funded**

If your proposal is funded, a number of deliverables are required to be submitted to EREF, as noted below:

- Progress reports as requested by EREF staff
- Draft technical report(s) for review AND approval by EREF technical staff
- Final technical report(s)
- Development and submittal of research summaries for EREF use
- Preparation of content for EREF educational CEU webinars/seminars
- Presentations at a relevant technical conference
- Submissions for publication in peer-reviewed journals
- Other periodic updates as requested

Formatting, content and submission of progress reports, technical reports and project summaries shall conform to EREF requirements. Those considering submitting a proposal who are unable or unwilling to meet the above requirements should not apply.

**Proposal summary template (must not exceed 1 page in length)**  
**Title of proposal should be descriptive and centered in bold font**

Principal Investigator<sup>1</sup>, Principal Investigator<sup>1</sup>, Principal Investigator<sup>2</sup>  
<sup>1</sup> *Affiliation in 10 pt font italicized and abbreviated as needed,* <sup>2</sup> *Second Affiliation*

Total Budget: \_\_\_\_\_  
Project Duration: \_\_\_\_\_

**Proposal Justification & Objectives**

Justify why the project is needed, why it is important, and how it relates to the sustainable waste management practices. Also note how the project fits within the EREF's strategic research plan. Please include the overall goal of the proposal and related objectives.

Assume your audience is technically competent of the solid waste field and sustainability concepts. List primary objectives in a bulleted/numbered format:

1. Objective #1
2. Objective #2
3. Objective #3
4. Add additional objectives as necessary

**Description of the Research Approach & Experimental Design**

The goal of this summary is to provide a brief overview of how the project will be carried out and the logic used to construct the experimental design.

Briefly describe the overall concept, strategy, and/or approach used to conduct the research/carry out the project. How the research will be done should be discussed with notation of steps taken, phases, and timelines as appropriate to allow the reviewer to understand the robustness of the experimental design. Note that simply stating the project will be conducted over a specified period of time should **NOT** be included here. Only note timelines in reference to how the timing is important to, or necessary for, a successful experimental design.

Additionally, a discussion of specific test methods, equipment used, lab analyses, and other items that are typical of a "Methods" section should only be included here when this information is critical to the success of the proposed work. Otherwise, these details should be included in the main body of the proposal, as appropriate.