

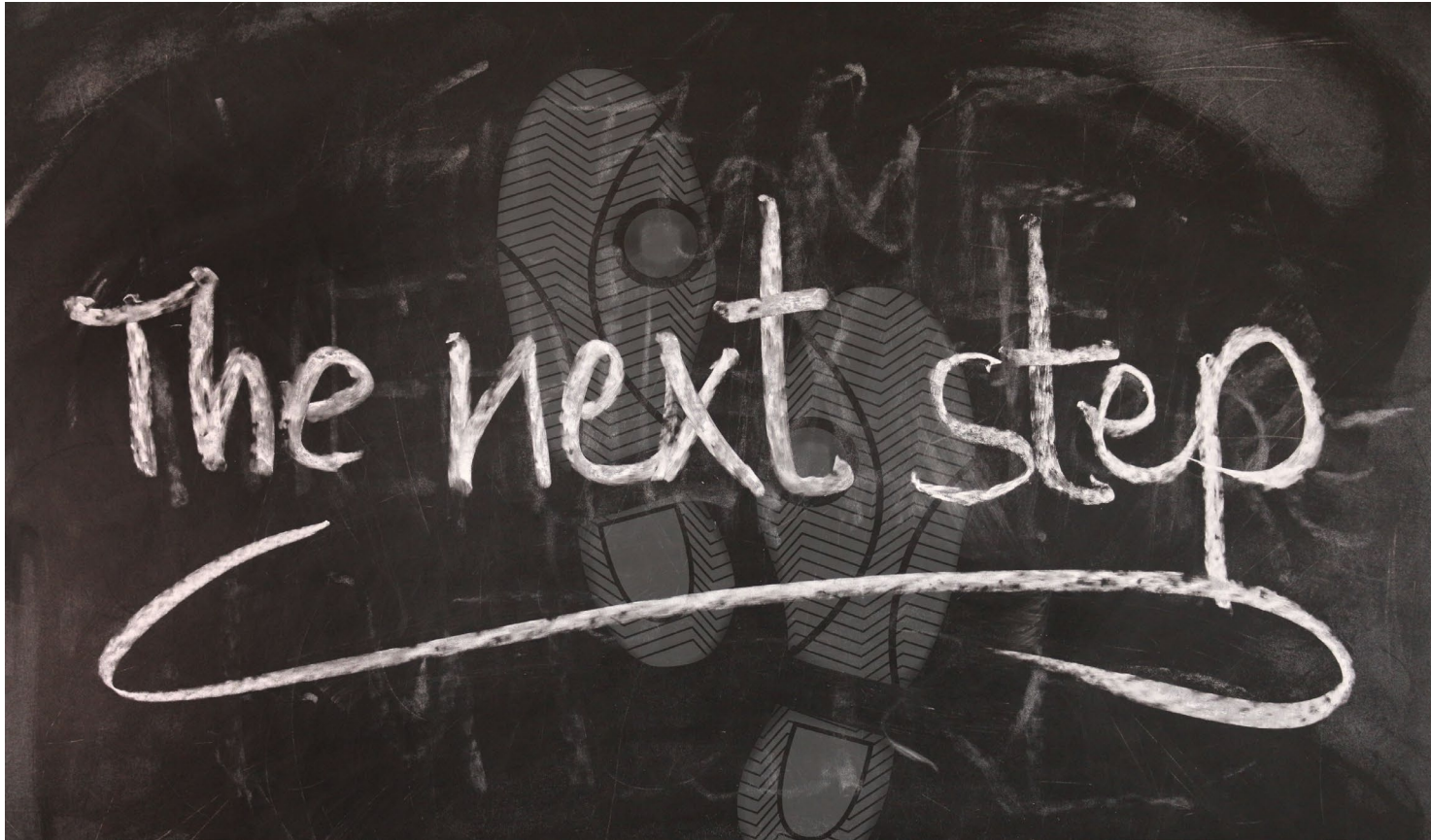
# Award Process

## Project Negotiation



*Acknowledgment:* "This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Advanced Manufacturing Office Award Number DE-EE0007897."

*Disclaimer:* "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."



# Award Negotiation Process

- Meeting Objectives
- Documentation Required
- Instructions for SOPO preparation
- Instructions for NEPA preparation
- Instructions for Budget (*EERE T 540.132 02*) preparation
- Instructions for Subaward Agreement
- Next Steps and Schedule

# Meeting Objectives

- Provide project teams with documentation that must be submitted to DOE for approval before the Award is completed and you can begin work.
- Provide guidance on the completion of the required documentation.
- Outline schedules for completion of the required documents:
  - The typical duration of the process is at least 5-6 months: This includes about 2-3 months that is required to modify REMADE's contract once all project documentation is approved by DOE.
  - We anticipate that having 14 projects and first drafts of your SOPOs in-hand will help to accelerate the process
  - It is imperative that you maintain your obligation to the schedule to avoid redirection of project funding



# Schedule

- Submitting high quality documents prior to these deadlines is encouraged in order to expedite the process.
- Comments should be addressed in tracked changes and returned to your REMADE project manager.
- Failure to meet deadlines may result in delays in starting your project or withdrawal of funding.

Date	Activity
October 24, 2023	Acceptance due
November 6, 2023 2.00 PM EST	Negotiation Steps and Q&A Session
November 13, 2023	REMADE provides proposal feedback to teams
November 27, 2023	SOPO/Budget/NEPA due with feedback incorporated
January 8, 2024	Second submission of SOPO/Budget/NEPA due with REMADE/DOE feedback incorporated

# NOTICE

Your proposal has been approved for negotiation for an award.  
This is not an authorization to begin work on your project.

Before the award can be made you will:



**1) need to provide additional documentation required by REMADE under its Prime Contract with the U.S. Dept. of Energy.**

The additional information includes,

- *Budget (EERE T 540.132 02) documentation*
- *National Environmental Protection Assessment (NEPA)*
- *Statement of Project Objectives (SOPO)*



**and 2) execute the Subaward Agreement between your organization and the Sustainable Manufacturing Innovation Alliance**



**We have provided the document templates for the information that is required from you.**

The documentation that we are requesting is to be submitted to REMADE by the *Lead Organization* as listed in your proposal.

- The Lead Organization is responsible for the overall technical, financial, environmental and legal performance of the Project. As such, the documentation you submit must be inclusive of your project team.
- We are here to help you through this process, but we are not staffed to do the work for you.
- Key REMADE contacts for the specific documents requested are provided on the following slide



# REMADE Contacts



## ***SOPO and NEPA:***

Ed Daniels

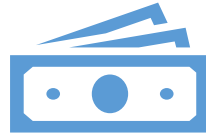
[edaniels@remadeinstitute.org](mailto:edaniels@remadeinstitute.org)

Mike Haselkorn

[mhaselkorn@remadeinstitute.org](mailto:mhaselkorn@remadeinstitute.org)

John Hryn

[jhryn@remadeinstitute.org](mailto:jhryn@remadeinstitute.org)



## ***Budget:***

Michele Gibson

[mgibson@remadeinstitute.org](mailto:mgibson@remadeinstitute.org)

Bonnie Schmiffmaker

[bschmiffmaker@remadeinstitute.org](mailto:bschmiffmaker@remadeinstitute.org)



## ***Membership and Sub Award Agreement***

John Kreckel

[jkreckel@remadeinstitute.org](mailto:jkreckel@remadeinstitute.org)

Michelle Schlafer

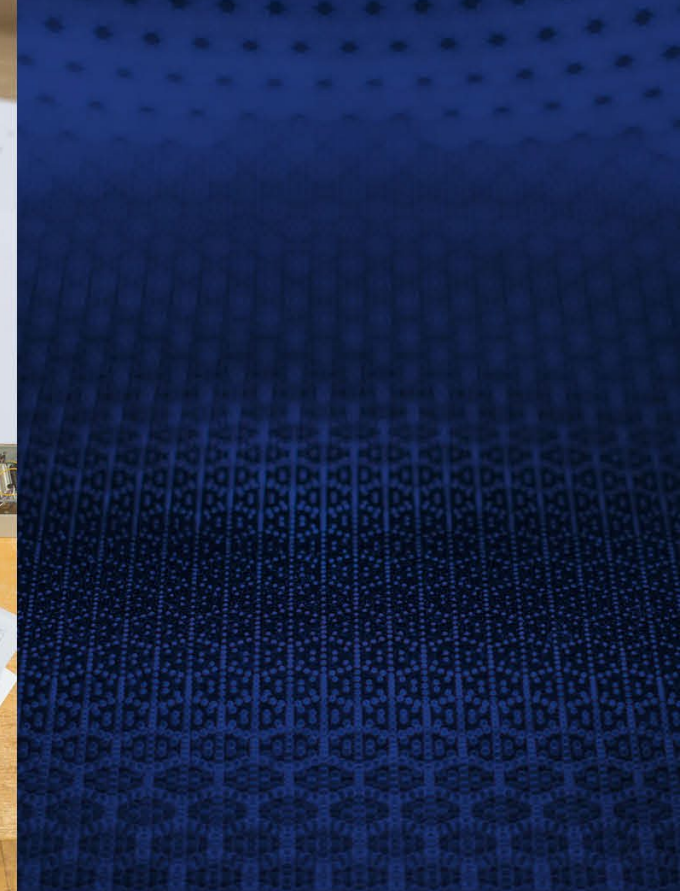
[mschlafer@remadeinstitute.org](mailto:mschlafer@remadeinstitute.org)



Project Number	Project Title	Lead Organization / PI / PI Email	Project Manager
23-01-RR-6001	Prototype Performance Demonstration on End-User Duty Cycles for Tires Built with Large Reincorporation of Recycled Materials (continuation of 18-02-RR-02)	Michelin, Robert Radulescu	Ed Daniels
23-01-RR-6020	Dynamic Crosslinking to Produce Secondary Feedstock from Recycled EVA as a Sustainable Solution for Footwear (continuation of 20-01-RR-4029)	Braskem, Kim McLoughlin	Ed Daniels
23-01-RR-6063	In-plant Testing of the Novel Methods of Separating Water-based Inks and Stickies from Spent Paper Fibers (continuation of 18-02-RR-15)	Virginia Tech, Roe-Hoan Yoon	Ed Daniels
23-01-RR-6011	Design for Recycling: All-Polyolefins Multilayer Flexible Packaging	Michigan St., Muhammad Rabnawaz	Ed Daniels
23-01-RR-6045	Pilot Plant Demonstration of Plastic Upcycling for the Production of Sustainable Petrochemical Alternatives	Aeternal Upcycling, Ryan Hackler	John Hryn
23-01-RM-6007	Machine Learning for Hybrid and Electric Vehicle Battery Prognostics	A3 Global, Jonathan Doan	John Hryn
23-01-RR-6002	Demonstration of Solvent-Based Plastic Recycling to Extract Pure PP from PCR	Michigan Tech, Ezra Bar Ziv	John Hryn
23-01-RR-6015	Remaking of Recyclable Multilayer Barrier Films	U. Mass-Lowell, Meg Sobkowicz-Kline	John Hryn
23-01-RR-6061	Advancing the Sorting of Textiles for Recycling	U. at Buffalo, Paschalis Alexandridis	Mike Haselkorn
23-01-RM-6005	Implementation of Low Heat Repair CMT for Cast Iron (continuation of 19-01-RM-04)	RIT, Jeremy Siegfried	Mike Haselkorn
23-01-RM-6016	Image Based Machine Learning for Component Identification for Remanufacturing	RIT, Abu Islam	Mike Haselkorn
23-01-RR-6047	Commercial removal of Fe and Mn from molten aluminum scrap melts (continuation of 20-01-RR-4010)	Phinix, LLC, Subodh Das	Mike Haselkorn
23-01-RR-6077	Low Resource Autonomous Waste Sorting System to Optimize Sustainable Collection	rStream Recycling, Ian Goodine	Mike Haselkorn
23-01-RR-6046	Novel, Transient, Thermal Barcode System for Highly Accurate, High-Speed, Automated Plastics Sorting	Univ. at Buffalo, Amit Goyal	Mike Haselkorn

# Next Steps

- Please provide a list of the contacts in your organization to your designated Project Manager:
  - Finance Contact for budget
  - Contract Officer for sub award agreement
  - Project Team Contacts for ALL Organizations working on the Project
- REMADE contacts will follow up with their counterparts to enable preparation of the documents.
- You will receive a comment summary form from the Merit Reviewers in the Information Package
- REMADE project managers will forward any additional SOPO comments and budget comments to the PI for each project
- **YOU are NOT authorized to start work on your project until completion of the award process.**



# How to Prepare Your SOPO and NEPA

## Project Negotiation



*Acknowledgment:* "This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Advanced Manufacturing Office Award Number DE-EE0007897."

*Disclaimer:* "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

# SOPO Documentation

- What is a SOPO?
- Elements of the SOPO
- Examples of Subtask naming and summaries
- Making Milestones S.M.A.R.T.
- Go/No-Go: When are they needed?
- Additional Reminders



# What is a SOPO? - Statement Of Project Objectives

- The SOPO is your project plan. It guides and measures the progress of your project. It must clearly describe:
  - what will be done
  - when it will be done
  - who will do it
  - how it will be done



- **Section A**
- Section B
- Section C
- Section D
- Milestone Sum. Table

# Elements of the SOPO

## SOPO Project Template

Prepare SOPO Title page as follows:

REMADE Institute Project  
Statement of Project Objectives (SOPO)

REMADE Project Number:

REMADE SOPO Task Number:

Project SOPO Modification Number:

Project Lead Organization:

Project Title:

Project PI:

PI Contact Information:

Phone:

e-mail:

REMADE Project Manager:

Phone:

e-mail:

Date of this SOPO or SOPO Modification:

## Section A - Project Objectives

submitted.

Provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. If the award is to be structured in Budget Periods, include the objective(s) for each Budget Period.

## Section B – Technical Scope Summary

by the applicant.

Provide a summary description of the overall work scope and approach to achieve the project objective(s). Summarize the technical participation of your cost-share partners indicating which Tasks they will make a technical contribution. At least one annual Go/No-Go decision point for any project that will span more than one year.

## Section C – Tasks, Milestones, Go/No-Go Decisions

The section should describe the specific activities to be conducted over the life of the project. This section provides a summary of the planned approach to this project and should clearly articulate what work must be accomplished to execute the project scope and thus meet the established project objectives.

Tasks: The SOPO should identify the appropriate tasks and sub-tasks for the entire project and provide a summary of what will be accomplished. Tasks should be organized in a logical sequence. They should be divided into 12-month budget periods<sup>1</sup> separated by at least one project-wide Go/No-Go decision point for any proposed work that will span more than one year. Exploratory Proposals should also identify at least one Go/No-Go decision point.

Each task/sub-task is comprised of the following elements: *Task Number and Title, Task Duration; and Task Summary.*

*Task Number and Title:* Each task and subtask are to have a unique number and title and indicate the approximate duration of the task or subtask in months. *Task/Sub-task Titles* should be written in the form of simple action-oriented sentences describing what will be accomplished.

*Task Duration:* The start and end date for each major task and subtask should be defined in terms of months from Project Start. If a 6-month task is schedule to begin month one (designated M1), the start and end dates would M1 and M6.

<sup>1</sup> Dates for proposals selected for negotiation will need to be modified to align with REMADE budget periods.

**Milestone 1.1** (if applicable) Milestones that result from of the work performed in multiple sub-tasks should be placed at the end of the Task. For example, if a milestone involved worked performed in sub-tasks 1.1 and 1.2, the milestone would be placed at the end of the tasks.

**Milestone 1.2** (if applicable)

Etc.

**Task 2.0:** (continue in the format above until all tasks and subtasks are listed)

**Subtask 2.1:** Title, Date range, Subtask Summary Description

**Subtask 2.2:** Title, Date range, Subtask Summary Description

**Budget Period 1 Go/No-Go Decision Point:** Insert go/no-go decision description, including the specific technical criteria or basis on which the decision is to be made.

**REMADE BUDGET PERIOD X+1 (M1-Mn): Project Months 13-Mn+12**

**Task 3.0:** (Continue in the format above until all tasks and subtasks are listed)

## Section D – Project Management & Reporting

Milestone Summary Table							
Recipient Name: Project Title							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	Milestone Number (Go/No-Go Decision Point Number)	Milestone Description (Go/No-Go Decision Criteria)	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
1	Batch Volume	Milestone	1.1	Demonstrate a 100L batch size with a >2.5% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350-1000nm ASTM173 spectrum	6	2
2	CON			Demonstrate a 10x10 cm batch size	Send 5 slides/sheets to NREL for transmission		3
3	Sustained Process Operation	Milestone	3.1	Demonstrate sustained single-shift process operation at design capacity	Achieve 8-hour continuous operation at process design capacity for 3 production campaigns	9	3
4	Literature Search	Milestone	4.1	Validate state-of-the-art/ base case	Identify 3 competing Design for X Process Models	12	4
5	LCA Model Development	Milestone	5.1	Evaluate energy output sensitivity to input conditions	Conduct trial simulations over expected range of input conditions.	12	4

# Elements of the SOPO

- Section A - Project Objectives
- Section B – Technical Scope Summary
- Section C – TASKS and SUBTASKS, MILESTONES, GO/NO-GO DECISIONS:
- Section D - Project Management and Reporting:
- Milestone Summary Table



# Elements of the SOPO:

## Section A – Project Objectives

- Key Elements
  - State the Project Objective: Description of the problem to be solved – e.g. sorting of non-ferrous alloys
  - Outline the Project Goals that support the objective: Brief description of how it will be addressed – techniques you will use
- Other Items to Include
  - A few sentences that specify the REMADE TPMs that your project addresses
  - Potential impact of your project relative to the TPMs (impact should be quantified)
  - Benefit of your project to the mission and goals of REMADE.
- Can frequently be taken directly from the *Project Summary* (exploratory) or *Project Goals and Objectives* (full) section of the proposal
- Recommended length – ½ page
- May need to modify to address reviewer comments





- Section A
- **Section B**
- Section C
- Section D
- Milestone Sum. Table

# Elements of the SOPO

- Section A - Project Objectives
- Section B – Technical Scope Summary
- Section C – TASKS and SUBTASKS, MILESTONES, GO/NO-GO DECISIONS:
- Section D - Project Management and Reporting:
- Milestone Summary Table



# Elements of the SOPO:

## Section B – Technical Scope Summary

- Key Elements
  - Description of the research plan
  - List of all project partners and their roles (which technical elements they address)
- Other Items to Include:
  - The 3-4 key technical elements that comprise your approach
  - Description of how the elements are integrated to develop the solution
- Can be taken directly from the *Technical Approach* section of the proposal
- Include any Go/No-Go decisions that will be made during your project.
- Recommended length – ½ to 1 page
- May need to modify to address reviewer comments



# Elements of the SOPO

- Section A - Project Objectives
- Section B – Technical Scope Summary
- Section C – TASKS and SUBTASKS, MILESTONES, GO/NO-GO DECISIONS:
  - The section should describe the specific activities to be conducted over the life of the project. It lists the tasks and subtasks, which team member will perform them, what will be accomplished, how it will be accomplished and when they will happen. The section also lists the Milestones and Go/No-Go decisions
- Section D - Project Management and Reporting
- Milestone Summary Table

*This section was included in the Preliminary SOPO in the proposal*



# Tips for Section C: Tasks, Milestones, Go/No-Go Decisions

## C. TASKS, MILESTONES, GO/NO-GO DECISIONS

### Task 1.: Collect and Characterize e-Waste Plastic Samples (Project Months M1-M3)

**Task Summary:** ACME will provide guidance to EWR in the collection of representative samples of shredded e-waste plastics (i.e. shredder residue after most metals have been removed). The various samples will include plastics from known ratios of various types of electrical and electronics equipment (EEE) products (e.g. computers, monitors, printers, peripherals, small household appliances). The output of this task will be compositions for five different samples that represent e-waste plastic product mixtures that will aid in the selection of the mix of products to be processed in Subtask 6.10.2.

#### Subtask 1.1: Collect e-Waste Plastic Samples (Project Months M1-M2)

**Subtask Summary:** With guidance from ACME, EWR will collect 5 separate representative samples of shredded e-waste plastics from its operations. Each of the samples (5-10 kg each) will be shredded plastics after processing known numbers of various types of end-of-life EEE products through a shredder and metal removal equipment.

#### Subtask 1.2: Analyze e-Waste Plastic Samples (Project Months M2-M3)

**Subtask Summary:** ACME will analyze the 5 samples from Subtask 6.10.1.1 to determine the compositions of the samples. Analysis will include characterization of 1) the particle size distribution, 2) the types of materials (e.g. plastics, ferrous metal, aluminum, stainless steel, wires, circuit boards, rubber, foam) and 3) the types of plastics. The characterization will follow ACME's internal characterization method.

**Milestone 1.2.1:** Particle size distributions and compositions of 5 samples of shredded e-waste plastics are determined (Project Month M3)

- Months listed after Task titles, Subtask titles and Milestones.
- List which organizations will be involved in each task/subtask. (Full names in first use, but shortened names can be used later after definition)
- Outputs/Outcomes (listed in last sentence of the Task Summary) will become Deliverables to be included in Section D
- Be specific about the output (what it is and how it relates to subsequent tasks)
- Be specific about what actions will be taken in each task/subtask (e.g. # of samples, types of tests, etc.)
- Use action-oriented Task and Subtask titles (e.g. Develop..., Conduct..., Analyze...**NOT** Development of..., Completion of..., Analysis of....)

# Tasks and Subtasks Summaries

- Write as simple action-oriented sentences.
- Clearly explain the task/subtask, identify the performer, describe its purpose, and quantify (how many samples, etc.) the outputs

Not-so-Good Subtask Summaries	Better Subtask Summaries
<p><b>Subtask 1.1:</b> Literature Review (M1-M2)  <b>Subtask Summary:</b> A review of the literature related to the relevant technologies for metal sorting will be conducted.</p>	<p><b>Subtask 1.1:</b> Review of Literature Related to Metal Sorting (M1-M2)  <b>Subtask Summary:</b> University X (UX) will conduct a review of patents, academic literature and trade literature to identify technologies for the sorting of metals from electronics.</p>
<p><b>Subtask 2.1:</b> Sample Testing (M3-M4)  <b>Subtask Summary:</b> Samples from a metal recycler will be tested to determine the composition.</p>	<p><b>Subtask 2.1:</b> Determine Material Composition of Mixed Material (M3-M4)  <b>Subtask Summary:</b> UX will perform a compositional analysis on three samples of mixed material provided by a metal recycler. The composition will be determined by qualitative assessment followed by X-ray fluorescence spectroscopy (XRF) for confirmation of the metal type.</p>

- Section A
- Section B
- **Section C**
- Section D
- Milestone Sum. Table

# Examples of Good Task/Subtask Headings and Subtask Structure

<p><b>Example 1</b></p>	<p><b>Task 1. Identify detrimental impurities in Al alloys (BP2, M10-M12) (Project Months M1-M3)</b></p> <p><b>Subtask 1.1. Perform literature search to identify the upper concentration limit (wt. %) for detrimental impurities in four alloy families (Project Months M1-M3)</b></p> <p><b>Subtask 1.2. Survey industrial experts to identify detrimental impurities in alloy families (BP2, M10-M12) (Project Months M1-M3)</b></p>
<p><b>Example 2</b></p>	<p><b>Task 3. Identify and evaluate new and promising collection and sorting methods to decrease contamination in SSR MRFs. (Project Months M12-M15)</b></p> <p><b>Subtask 3.1. Review and assess practices for decreasing paper contamination in SSRs to identify most promising approaches. (Project Months M12-M13)</b></p> <p><b>Subtask 3.2. Perform a cost-benefit analysis for the most promising approaches identified in Subtask 3.1 (Project Months M13-M15)</b></p>
<p><b>Example 3</b></p>	<p><b>Task 1. Construct a geospatial model to simulate an E-waste recycling collection and distribution network (Project Months M1-M12)</b></p> <p><b>Subtask 1.1. Determine data needs and gaps for transportation model development (Project Months M1-M3)</b></p> <p><b>Subtask 1.2. Develop an e-waste collection network simulation model supporting user-defined parameters (Project Months M1-M6)</b></p>
<p><b>Example 4</b></p>	<p><b>Task 1. Develop a conceptual modeling framework (CMF) for systems analysis for PET and olefin polymers in a circular economy (Project Months M1-M6)</b></p> <p><b>Subtask 1.1. Develop a CMF for a Plastics Circular Economy (Project Months M1-M6)</b></p> <p><b>Subtask 1.2. Identify Prevalent Plastics Waste Supply Chain Processes (Project Months M1-M6)</b></p> <p><b>Subtask 1.3. Identify Prevalent Plastics Waste Conversion Processes (Project Months M1-M6)</b></p>

# Making Milestones S.M.A.R.T.

(Specific, Measurable, Achievable, Relevant and Timely)

- Section A
- Section B
- **Section C**
- Section D
- Milestone Sum. Table

Not-so-SMART Milestones	SMART Milestones
<b>Milestone 1.1.1:</b> Report with results showing improvement over previous pilot-scale tests with non-coated device (M2)	<b>Milestone 1.1.1:</b> Demonstrate a 100L batch size with a >2.5% absolute performance improvement over a non-coated device (M2)
<b>Milestone 2.1.1:</b> Demonstrate improved performance in lab-scale tests compared with a non-coated device (M6)	<b>Milestone 2.1.1:</b> Demonstrate a 10x10 cm batch size with a >2.0% absolute performance improvement for entire device over a non-coated device (M6)

- Milestones should ideally reflect attainment of tangible, measurable results that:
  - Demonstrate technical progress or
  - Move the project toward completion of Go-No/Go decision criteria or accomplishment of project objectives.
- Milestones should be action-oriented and CONCISE - not more than 1 or 2 sentences
- **At least one milestone per quarter**
- **Project reports are not acceptable Milestones**
- Questions to Consider
  - What is being demonstrated by the Milestone?
  - How will it be measured; i.e. how will you know that the milestone has been achieved?

Acronym	Clarification
S = Specific	Clear and focused to avoid misinterpretation. Must include measures, assumptions, and definitions and be easily interpreted.
M = Measurable	Can be quantified and compared to other data. It should allow for meaningful statistical analysis. Avoid "yes/no" measures except in limited cases, such as start-up or systems-in-place situations.
A = Achievable	Attainable, reasonable, and credible under conditions expected.
R = Relevant	Achievement of the milestone contributes to and is relevant to achieving the objectives of project; is important to moving the project forward/measuring progress against the Go/No-Go decision criteria and successful completion of the project.
T = Timely	Doable within the time frame given.

# Examples of Good Milestones

	Milestone	Milestone Validation
<b>Example 1</b>	New refractory compositions achieve a 10% improvement in melt efficiency.	The average energy consumption of 5-10kg. melt trials conducted at ABC laboratory is less than 10% of industry standard of 1000J/kg.
<b>Example 2</b>	Impact of SSR on paper inbound and outbound contamination by region quantified and compared with contamination rates for DSR and MSR.	Inbound and outbound contamination rates for SSR relative to DSR and/or MSR within regions and across regions will be evaluated by University of XXX for statistically significant differences at the 90% level of confidence with a measurement precision of 10%.
<b>Example 3</b>	A functional user interface for the ABC model has been developed	Three industrial users beta test the user interface and confirm that it is functional and provide recommendations to improve functionality.
<b>Example 4</b>	A CMF model that accounts for >90% of the materials flows of HDPE, LDPE, LLDPE, PP and PET is developed.	The model flows will be reviewed and validated by a 3-member panel of industry experts.
<b>Example 5</b>	Final potting removal process (including processing conditions) selected for each potting material.	Average removal process estimated costs are within 10% of cost target for functional boards with no decrease in functionality based on the results 12 potting removal trials.
<b>Example 6</b>	One or more process options for producing carbon black produce an acceptable carbon black product.	Process or combination of processes with associated property testing results (particle size, specific surface area, ash %, and S%) indicate carbon black properties within 90% of the N330 specifications.



# Go/No-Go Decisions

- A Go/No-Go decision point is a risk management tool and a project management best practice to ensure that
  - Technical success is definitively achieved for the current budget period or period of performance
  - Potential for success in future budget periods or periods of performance is evaluated, prior to beginning the future budget periods
- They are used to determine whether a project should proceed, stop, or be redirected
- Include specific technical criteria to be used to evaluate progress and make the decision.
- Go/No-Go Decision Points must be S.M.A.R.T.
- **At least one annual GO/NO-GO decision point for projects > 1 year**
- Do not use Contingent Go/No-Go's
  - (e.g. If A, then do not complete Subtask x, proceed to subtask y)



# Examples of Good Go/No-Go Decisions

	Go/No-Go Decision	Go/No-Go Validation
<b>Example 1</b>	The formulation(s) of alloying elements in aluminum (containing impurity elements) identified by modeling of the fundamental thermodynamics and kinetics predicts a 50% reduction in melt losses.	At least one alloy formulation is predicted to have a melt loss of less than 3% as compared to the industry baseline of 6%.
<b>Example 2</b>	The number of acceptable datasets (samples) have been acquired.	The number of acceptable datasets is equal to or greater than the required minimum as specified by ASTM Standard D5231-92(2008).
<b>Example 3</b>	The transportation and processing models predict costs that are within 20% of actual costs for Company XXX for each model, respectively.	Model predictions for representative inputs will be compared to actual average costs experienced by Company XXX. Predicted costs must be within +/- 20% of actual costs.
<b>Example 4</b>	System diagrams that capture at least 90% of the actual flows have been developed, and recycling metrics for EOL-RR, RC, and OSR have been defined for carbon steel, stainless steel, aluminum, fibers, and polymers	Project partners a, b, c, d, validate system diagrams and recycling metrics and confirm all major flows are captured.
<b>Example 5</b>	One or more NDE detection methods display the capability to detect at least 80% the verified failures, with no false positives.	NDE detects FMs in the statistical sample (at least 8 detected failures in a sample of 10 PCB). Results verified by post-mortem SEM; no false-positives detected.

# Elements of the SOPO

- Section A - Project Objectives
- Section B – Technical Scope Summary
- Section C – TASKS and SUBTASKS, MILESTONES, GO/NO-GO DECISIONS:
- Section D - Project Management and Reporting
- Milestone Summary Table



# Elements of the SOPO: Project Management and Reporting

- Section A
- Section B
- Section C
- **Section D**
- Milestone Sum. Table

- List of reporting requirements from the RFP that must be included verbatim

The recipient shall submit the following project reports to REMADE:

- Monthly status reports (in a format to be provided by REMADE) which include schedule as well as any technical deliverables completed in the month covered by the schedule. Monthly status reports are not necessary in months with Quarterly reports. Monthly reports are due no later than the 15<sup>th</sup> of the month following the month covered by the report.
- Quarterly status reports at the end of each quarter of the project (in a format to be provided by REMADE). Quarterly status reports will include schedule and budget progress as well as any technical deliverables completed in the quarter covered by the schedule. Quarterly reports are due no later than the 15<sup>th</sup> of the month following the quarter covered by the report.
- Quarterly technical review (in a PowerPoint template to be provided by REMADE)
- Final technical report (in a format to be provided by REMADE) that provides a comprehensive, cumulative, and substantive summary of the progress and significant accomplishments achieved during the total period of the REMADE Project effort. Final reports are due within 45 days after the end of the (Note: Final reports do not replace the need for the final quarterly report for your project)

- List of Deliverables

- Should match the “outputs” described in the Task Summaries
- Deliverables should avoid the term “Report”. Typically, deliverables will be attached to monthly or quarterly status reports and should use terms such as “Summary”, “Table”, “List”, “Spreadsheet” or “Software”.

- Section A
- Section B
- Section C
- Section D
- Milestone Sum. Table

# Elements of the SOPO

- Section A - Project Objectives
- Section B – Technical Scope Summary
- Section C – TASKS and SUBTASKS, MILESTONES, GO/NO-GO DECISIONS:
- Section D - Project Management and Reporting
- Milestone Summary Table



# Elements of the SOPO: Milestone Summary Table

- Be sure the wording in the table matches Sub-task wording from Section C.
- The verification process should clearly describe how the Milestone or Go/No-Go Decision Point will be validated.

*Note 1: All Milestones and Go/No-Go decisions should be listed in the Summary Table above. This content must be verbatim from the Milestones and Go/No-Go decisions previously listed in your SOPO.*

*Note 2: Milestones numbering convention: Task Number, Milestone Number i.e. Milestone 1.1, Milestone 2.1, etc. Go/No-Go numbering convention: G-1 to G-n over project duration.*

*Note 3: It is required that each project has at least one milestone per quarter for the entire project duration. It is NOT necessary that each task have one milestone per quarter.*

*Note 4: Unless otherwise specified in the RFP, the SOPO should have at least one annual Go/No-Go decision point for any proposed work that will span more than one year.*

*Note 5: All milestones should follow the SMART rule of thumb: **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely*

**REMADE Project Number:**  
**REMADE SOPO Task Number:**

Milestone Summary Table							
Recipient Name:							
Project Title							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	Milestone Number (Go/No-Go Decision Point Number)	Milestone Description (Go/No-Go Decision Criteria)	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
X,y	List the full title of the relevant task or subtask	Milestone	X,y,z	A SMART Milestone	Description of how the Milestone will be verified	Project Month	Project Quarter
X,y	List the full title of the relevant task or subtask	Deliverable		Description of the deliverable	Include this phrase: Deliverables are to be attached to monthly or quarterly reports, following completion of the deliverable.	Project Month	Project Quarter
		Go/No-Go Decision Point	G-1	A SMART Go/No-Go Decision Point	Description of how the Go/No-Go Decision Point will be verified	Project Month	Project Quarter

# Pointers for the SOPO Editing Process

- Be sure to **review and address the comments from DOE, REMADE and the peer reviewers** in your SOPO.
  - Please answer each comment and indicate where in your SOPO the comment has been addressed (e.g. See subtask XXXX.) Leave these comments (and responses) in the document until REMADE removes them.
  - Use “Track Changes” when editing text in the SOPO.
- Follow the above guidelines when responding to further comments by reviewers from REMADE or DOE
- For some projects, DOE has requested a meeting with REMADE and the project PI to discuss significant scope concerns. The REMADE Project Manager will set up a time for this meeting once the first draft of your SOPO has been received
- DOE (and REMADE) requirements for SOPOs are quite rigorous. **Expect multiple edits prior to approval**
  - You should expect at least 3 iterations to prepare your SOPO; Two with the REMADE Team and at least one with DOE.



# Additional Reminders for SOPOs


- Spell out acronyms and abbreviations on first use.
- Be specific, if you use phrase such as “University X will collect data”---specify the data; when you say “Company Y will examine the features”, specify the features.
- If you are developing models, specify the inputs and outputs of the model, specify how you will validate the model (including the criteria that will be used to accept the model)
- If software is developed, please specify the type of software and how it will be shared with REMADE members
- Don’t assume that the SOPO reviewers are experts in the field. Be sure to explain clearly for a more general technical audience. Avoid the use of highly specific jargon unless it is defined earlier in the SOPO.
- Goals, Objectives, Tasks and Milestones should be sequentially related and should provide a logical path of the SOPO to reach the goals and objectives of your project.
- Avoid using diagrams or figures in your SOPO. While including them is possible in special cases, the DOE typically does not allow for this.
- **Tasks/Subtasks in the SOPO must link to items in the budget (EERET 540.132 02)**





# National Environmental Policy Act (NEPA) documentation

- The Lead Organization must complete the NEPA form that we have provided.
- Only **one** NEPA form is required, but it **must** cover the activities of **all** of the participants who are receiving federal funding and/or providing cost-share to support your project
- All project participants must be listed on the first page of the NEPA.
- The NEPA Control Number, FOA Number, etc. are to be left blank as shown at right.
- You will need to complete the entire NEPA form. This means that all organizations in the project must be listed in the Table for question 2b. For questions or blanks that are not applicable to your project, complete them by writing “none”, “No” or “N/A” as appropriate. An authorized representative of the lead organization must sign the NEPA in the signature blocks in Section IV and at the end of the attachment to the NEPA.



DOE F 540  
(04-2017)

OMB Number 1910-5175  
Exp. 11/30/2020

**OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**

**ENVIRONMENTAL QUESTIONNAIRE**  
(To be completed **on-line only** at: <https://www.eere-pmc.energy.gov/NEPA.aspx> unless you are instructed otherwise by EERE.)

SECTION I. PROJECT SUMMARY	
NEPA Control Number:	<i>Leave blank</i>
Project Title:	<b>Enter the Title of your Project (e.g. Methods to Test Contamination levels in Mixed Plastics from E-Waste)</b>
Recipient:	<b>Lead Institution and address (e.g. University of Somewhere, 200 Academic Street, Somewhere, NY 10555)</b>
Other Participants (Subrecipients, Contractors, etc.):	<b>List all other partner organizations and their address. The list must include cost-share partners even if they are not receiving federal funds.</b>
FOA Number:	<i>Leave blank</i>
FOA Title:	<i>Leave blank</i>
Award Number:	<i>Leave blank</i>
DOE Technology Office Point of Contact:	<i>Leave blank</i>
DOE Grants Management Specialist:	<i>Leave blank</i>
SECTION II. BACKGROUND AND INSTRUCTIONS	
Pursuant to the U.S. Department of Energy's National Environmental Policy Act (NEPA) implementing regulations (10 C.F.R. Part 1021), the Office of Energy Efficiency and Renewable Energy (EERE) is required	

# Questions About SOPOs and NEPA?





# How to Prepare Your Budget

## Project Negotiation

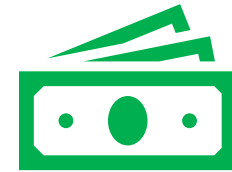


*Acknowledgment:* "This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Advanced Manufacturing Office Award Number DE-EE0007897."

*Disclaimer:* "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

# Budget Documentation

- As the Lead Organization, you will need to prepare a consolidated EERE T 540.132 02 that reflects costs and cost-share of each of your partners. A blank EERE T 540.132 02 has been provided. It is an excel template.
- You will also need an EERE T 540.132 02 from each of your partners as supporting documentation for your budget (even if they are only providing cost share).
- When preparing the EERE T 540.132 02 documentation, be sure to read and follow all the instructions within each tab of the workbook. (Additional instructions to follow)
- Letters of support from your partners must agree with the EERE T 540.132 02
- If applicable, please provide letters with government-approved fringe/overhead rates
- National Laboratory partners will need to provide a Field Work Proposal and a Contracting Office authorization letter. Be sure to seek these early in the process since it can take several weeks to complete this information.



# EERE T 540.132 02

- Be sure to use EERE T 540.132 02 (**covering 5 budget periods**). In the upper right hand corner the expiration date should read 4/30/2025.
- You will be utilizing budget period 5 column for your project budget.
- Please do not alter any formula's in the template.
- Additional instructions on how to complete EERE T 430.132 2 have been provided and are available.



# Instructions and Summary Tab

- Fill out the top section (seen below) that identifies your award number / recipient, who you are, and the date of submission
- Make sure when you are finished that your summary shows 1:1 match
- 1:1 match means the Federal column will be a positive number and at least half of the total project.
- Your partners budget rolls up to your project budget as the “lead”
- Supply your commitment letters with your submission package and update them if you have changes



EERE T 540.132 02 Budget Justification (5 BPs)

## Instructions and Summary

OMB Control Number: 1910-5162

Expiration Date: 10/31/2021

**Award Number:** \_\_\_\_\_

**Date of Submission:** \_\_\_\_\_

**Award Recipient:** \_\_\_\_\_

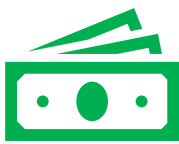
**Form submitted by:** \_\_\_\_\_

# Instructions and Summary cont.

- Summary tab is formula driven and linked to other tabs.
- If you see negative numbers in any cells, you have an error. This can happen when your cost share is higher in a period than the total costs for that budget period. Review supporting tabs and make necessary adjustments there, not on summary tab.
- Cost share should be 1:1 for each budget period.
- Each time you invoice for reimbursement, you MUST be at 1:1 cost share (within the budget period) . REMADE can only reimburse in this manner (per the terms and conditions of our cooperative agreement).
- Be sure to populate only BP5 column. All other budget periods should be blank.



SUMMARY OF BUDGET CATEGORY COSTS PROPOSED								
The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry								
Section A - Budget Summary		Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
	Budget Period 1	\$0	\$0			\$0	0.00%	Example!!! 01/01/2014 - 12/31/2014
	Budget Period 2	\$0	\$0			\$0	0.00%	
	Budget Period 3	\$0	\$0			\$0	0.00%	
	Budget Period 4	\$0	\$0			\$0	0.00%	
	Budget Period 5	\$0	\$0			\$0	0.00%	
	<b>Total</b>	\$0	\$0			\$0	0.00%	
Section B - Budget Categories								
CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
d. Equipment	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
f. Contractual								
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Contractor	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Contractual</b>	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Direct Costs</b>	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Costs</b>	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Additional Explanation (as needed):								



# Budget Categories

EERE T 540.132 02 Budget Justification (5 BPs) Instructions and Summary OMB Control Number: 1910-5162  
Expiration Date: 04/30/2025

**Award Number:** \_\_\_\_\_ **Date of Submission:** \_\_\_\_\_  
**Award Recipient:** \_\_\_\_\_ **Form submitted by:** \_\_\_\_\_  
(May be award recipient or sub-recipient)

**Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your EERE contact!  
Do not modify this template or any cells or formulas!**

- If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs.
- Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
- Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
- The total budget presented on tabs a. through i. must include both Federal (DOE) and Non-Federal (cost share) portions.
- All costs incurred by the preparer's sub-recipients, contractors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
- Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
- Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your EERE contact before adding additional budget period rows or columns.
- ALL budget period cost categories are rounded to the nearest dollar.**

**BURDEN DISCLOSURE STATEMENT**  
 Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

**SUMMARY OF BUDGET CATEGORY COSTS PROPOSED**  
 The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry

Section A - Budget Summary	Federal	Cost Share	Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1	\$0	\$0	\$0	0.00%	Example!!! 01/01/2014 - 12/31/2014
Budget Period 2	\$0	\$0	\$0	0.00%	
Budget Period 3	\$0	\$0	\$0	0.00%	
Budget Period 4	\$0	\$0	\$0	0.00%	
Budget Period 5	\$0	\$0	\$0	0.00%	
<b>Total</b>	\$0	\$0	\$0	0.00%	

Instructions and Summary | a. Personnel | b. Fringe | c. Travel | d. Equipment | e. Supplies | f. Contractual | g. Construction | h. Other | i. Indirect | j. Cost Share | SF-424A Cost Categories | SF-424A M

- Personnel
- Fringe benefits
- Travel
- Equipment
- Supplies
- Contractual
- Construction
- Other Direct
- Indirect
- Cost Share
- SF 424A



# Budget Categories

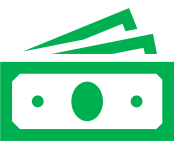
- Personnel (The maximum allowable rate is \$250,000 annual or an hourly **base** rate of \$120/hr.) If the rate is over \$120 per hr due to inclusion of fringe/overhead, please state the details in the comment box.
- Fringe benefits (Please attach rate letters or provide details if no approved rate provide details)
- Travel (Must be directly relevant to the project. Justification must be provided in the comments section, complete information on each trip for all categories, one trip per line)
- Equipment (See 2 CFR 200.313)
- Supplies (Explain reason needed and cost substantiation)



# Budget Categories cont.

- Contractual:
  - Subrecipient (Partners contributions in summary) (Detail on their own EERE T 540.132 02)
  - Vendor (All other paid services)
  - FFRDC (National Labs section)
- Other Direct (Anything that does not fit the other categories)
- Indirect (Must attach rate letter or explain in the detail box )
- Cost Share (List all cost share contributors and what is provided)  
*Note: If you list something here, it should be included as a line item in tabs a. through i.*
- SF 424A (Formulas link to data within the budget tabs)  
*Note: You do not fill out anything on this page*





# Personnel

Detailed Budget Justification

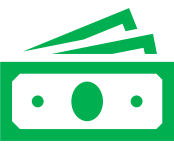
## a. Personnel

### INSTRUCTIONS - PLEASE READ!!!

1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and contractors must be included under f. Contractual.
2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, labor distribution report, state civil service rates, etc.) must also be identified.
3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).
4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 1	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 2	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 3	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 4	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 5			
1	Sr. Engineer (EXAMPLE!!!)	2000	\$85.00	\$170,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	2400	\$190,000	
2	Technicians (2)	4000	\$20.00	\$80,000	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	4000	\$80,000	

- First refer to the SOPO task # that this position will fulfill. Please be as specific as possible and make sure the Task #s for a position corresponds with the relevant budget period(s) for the task
- Hours and rate of pay estimated
- Hourly rate must not be more than \$120/hr base rate or \$250K annual salary. Please provide a statement attesting that the base rate is at or below \$120/hr if your rate here is fully loaded.
- Rate basis is usually the actual salary rate with outlying periods adjusted for inflation. Be sure to note this (or alternative) rate basis in the corresponding column.



# Fringe Benefits

Detailed Budget Justification

## b. Fringe Benefits

**INSTRUCTIONS - PLEASE READ!!!**

1. Fill out the table below by position title. If all employees receive the same fringe benefits, you can show "Total Personnel" in the Labor Type column instead of listing out all position titles.
2. The rates and how they are applied should not be averaged to get one fringe cost percentage. Complex calculations should be described/provided in the Additional Explanation section below.
3. The fringe benefit rates should be applied to all positions, regardless of whether those funds will be supported by Federal Share or Recipient Cost Share.
4. Each budget period is rounded to the nearest dollar.

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
<b>EXAMPLE!!! Sr. Engineer</b>	\$170,000	20%	\$34,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$38,000
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
<b>TOTAL FRINGE</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required at the time of award negotiation if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information if not previously submitted.

- A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is/was included with the project application.\*
- There is not a current federally approved rate agreement negotiated and available.\*\*

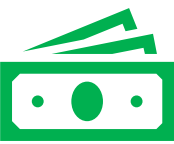
\*Unless the organization has submitted an indirect rate proposal which encompasses the fringe pool of costs, please provide the organization's benefit package and/or a list of the components/elements that comprise the fringe pool and the cost or percentage of each component/element allocated to the labor costs identified in the Budget Justification.

\*\*When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided in the Sample Rate Proposal at <https://www.energy.gov/eere/funding/downloads/sample-indirect-rate-proposal-and-profit-compliance-audit>, or a format that provides the same level of information and which will support the rates being proposed for use in the performance of the proposed project.

Additional Explanation (as necessary): Please use this box (or an attachment) to list the elements that comprise your fringe benefits and how they are applied to your base (e.g. Personnel) to arrive at your fringe benefit rate.

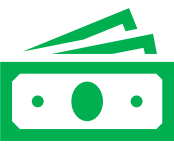
- Check the box on whether you have a negotiated rate or not.
  - If you do, a copy of the agreement must be provided.
  - Please include what comprises your fringe pool.

# Travel



Detailed Budget Justification											
c. Travel											
<p><b>INSTRUCTIONS - PLEASE READ!!!</b></p> <ol style="list-style-type: none"> <li>1. Identify Foreign and Domestic Travel as separate items. Examples of Purpose of Travel are subrecipient site visits, DOE meetings, project mgmt. meetings, etc. Examples of Basis for Estimating Costs are past trips, travel quotes, GSA rates, etc.</li> <li>2. All listed travel must be necessary for performance of the Statement of Project Objectives.</li> <li>3. Only travel that is directly associated with this award should be included as a direct travel cost to the award.</li> <li>4. Federal travel regulations are contained within the applicable cost principles for all entity types.</li> <li>5. Travel costs should remain consistent with travel costs incurred by an organization during normal business operations as a result of the organizations written travel policy. In absence of a written travel policy, organizations must follow the regulations prescribed by the General Services Administration.</li> <li>6. Columns E, F, G, H, I, J, and K are per trip.</li> <li>7. The number of days is inclusive of day of departure and day of return.</li> <li>8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.</li> <li>9. Each budget period is rounded to the nearest dollar.</li> </ol>											
SOPO Task #	Purpose of Travel	Depart From	Destination	No. of Days	No. of Travelers	Lodging per Traveler	Flight per Traveler	Vehicle per Traveler	Per Diem Per Traveler	Cost per Trip	Basis for Estimating Costs
Domestic Travel			Budget Period 1								
1	EXAMPLE!!! Visit to PV manufacturer			2	2	\$250	\$500	\$100	\$80	\$2,520	Current GSA rates

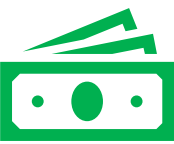
- Travel must be directly correlated to your project and is identified as over 50 miles and for 12 hours or longer
- Costs should be guided by the GSA rates for the destination city (<https://www.gsa.gov/travel/plan-book/per-diem-rates> )
- If over the GSA rate, you must explain and substantiate the deviance
- Travel should be reasonable and necessary to the SOPO task # identified.
- Be sure to explain the reason for travel in the “Additional Explanation” section at the bottom of the tab
- Explanations are especially critical when multiple people are traveling for an event that might not appear to directly relate to the project (e.g. attendance at a conference)
- Travel to the REMADE Members Meeting and Spring Tech Conference can be included in the budget. Note that the registration fee for the Members Meeting and Spring Tech Conference can be included as **cost share only**.
- Travel outside of the US must be pre-approved by the DOE contracting officer.



# Equipment

Detailed Budget Justification						
<b>d. Equipment</b>						
<b>INSTRUCTIONS - PLEASE READ!!!</b>						
1. Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.						
2. List all equipment below, providing a basis of cost (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.						
3. During award negotiations, provide a contractor quote for all equipment items over \$50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.						
4. Each budget period is rounded to the nearest dollar.						
SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
<b>Budget Period 1</b>						
3.4.5	<b>EXAMPLE!!!</b> Thermal shock chamber	2	\$70,000	\$140,000	Contractor Quote - Attached	Reliability testing of PV modules- Task 4.3

- Equipment is defined as greater than \$5,000 and useful life of more than one year.
- All equipment purchased must follow the federal regulations in 2 CFR 200.313
- Provide a vendor quote for all purchases over \$50,000.
- If a quote is not feasible due to being custom built or not off the shelf, provide engineering cost estimates and detail. The more information that can be provided, the better.



# Supplies

Detailed Budget Justification

## e. Supplies

### INSTRUCTIONS - PLEASE READ!!!

1. Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.
2. List all proposed supplies below, providing a basis of costs (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.
3. Multiple supply items valued at \$5,000 or less used to assemble an equipment item with a value greater than \$5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.
4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.
5. Each budget period is rounded to the nearest dollar.

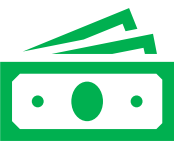
SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
4,6	EXAMPLE!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4

- Supplies are generally materials that will be used up in 1 year or during the life of the project and less than \$5,000 in cost per unit.
- Please provide the basis of cost, **including details (e.g. itemized list)**.
- Refer to the SOPO task that the supplies will be used for.
- Supply costs must be direct to the project and not duplicative to items in the indirect pool.





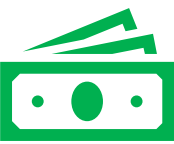




# Construction

Detailed Budget Justification				
<b>g. Construction</b>				
<b>PLEASE READ!!!</b> 1. Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a contractor or subrecipient should be entered under f. Contractual. 2. List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives. 3. Each budget period is rounded to the nearest dollar.				
Overall description of construction activities: <b>Example Only!!! - Build wind turbine platform</b>				
SOPO Task #	General Description	Cost	Basis of Cost	Justification of need
<b>Budget Period 1</b>				
3	EXAMPLE ONLY!!! Three days of excavation for platform site	\$28,000	Engineering estimate	Site must be prepared for construction of platform.

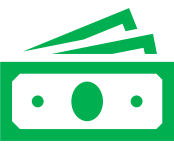
- Construction, is defined as all types of work done on a particular building, including erecting, altering, or remodeling.
- Provide a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.



# Other Direct Costs

Detailed Budget Justification				
h. Other Direct Costs				
<b>INSTRUCTIONS - PLEASE READ!!!</b>				
1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).				
2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.				
3. Each budget period is rounded to the nearest dollar.				
SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
Budget Period 1				
5	EXAMPLE!!! Grad student tuition - tasks 1-3	\$16,000	Established UCD costs	Support of graduate students working on project

- Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs.
- Examples are: tuition, printing costs, costs to use lab equipment (explanation of costing structure must be included in the comments), etc.
- Please provide basis of cost such as vendor quotes, prior purchases of similar or like items, published price list, etc. In cases where equipment depreciation is used as justification, please refer to 2CFR200.436.



# Indirect Costs

Check this box if you have an approved or negotiated rate. If so, provide a copy of the rate letter to REMADE.

Show the calculation for the overhead costs, including adjustments made to your total direct costs to arrive at the correct base.

Detailed Budget Justification

## i. Indirect Costs

### INSTRUCTIONS - PLEASE READ!!!

- Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.
- The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.
- The indirect rate should be applied to both the Federal Share and Recipient Cost Share.
- NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting costs as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution.** Neither of these costs can be reflected as actual indirect cost rates realized by the organization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (§200.306(b)(1)).
- Each budget period is rounded to the nearest dollar.

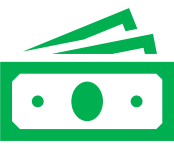
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
<b>Provide ONLY Applicable Rates:</b>							
Overhead Rate	0.00%	0.00%	0.00%	0.00%	0.00%		<i>Example: Labor + Fringe</i>
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		<i>Example: Total Cost Input</i>
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
<b>Indirect Costs (As Applicable):</b>							
Overhead Costs						\$0	
G&A Costs						\$0	
FCCM Costs, if applicable						\$0	
OTHER Indirect Costs						\$0	
<b>Total Indirect Costs Requested:</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	

A federally approved indirect rate agreement, or rate proposed (supported and agreed upon by DOE for estimating purposes) is required if reimbursement of indirect costs is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed.

- An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application and will be provided electronically to the Contracting Officer for this project.
- The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.
- This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

Provide an explanation of how your indirect cost rate was applied.

Additional Explanation (as needed): **\*IMPORTANT:** Please use this box (or an attachment) to further explain how your total indirect costs were calculated. If the total indirect costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total).



# Cash Cost Share

Detailed Budget Justification

### Cost Share

**PLEASE READ!!!**

1. A detailed presentation of the cash or cash value of all cost share proposed must be provided in the table below. All items in the chart below must be identified within the applicable cost category tabs a. through i. in addition to the detailed presentation of the cash or cash value of all cost share proposed provided in the table below. Identify the source organization & amount of each cost share item proposed in the award.

2. Cash Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project. **Contractors may not provide cost share.** Any partial donation of goods or services is considered a discount and is not allowable.

3. In Kind Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. In Kind cost share items include volunteer personnel hours, the donation of space or use of equipment, etc. The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section below. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out In Kind cost share in this section. Contractors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

4. Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds. Cost sharing commitment letters from subrecipients and third parties must be provided with the original application.

5. Fee or profit, including foregone fee or profit, **are not allowable** as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

6. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim the resulting indirect costs as a Cost Share contribution.**

7. **NOTE:** A Recipient **cannot claim "unrecovered indirect costs"** as a Cost Share contribution, **without prior approval.**

8. Each budget period is rounded to the nearest dollar.

Organization/Source	Type (Cash or In Kind)	Cost Share Item	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Project Cost Share
ABC Company <b>EXAMPLE!!!</b>	Cash	Project partner ABC Company will provide 20 PV modules for product development at the price of \$680 per module	\$13,600					\$13,600
								\$0
								\$0

- Identify the organization & amount of each cost share item proposed in the award.
- **All items in the Cost Share section should also be identified within the applicable category tabs a. through i.. (The formulas will automatically update the summary page based on your entries here.)**
- Cash Cost Share is a contribution to the project made by the recipient, subrecipient, or vendor for costs incurred **and paid** for the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company.
- All cost share items must be necessary (and allowable) to the performance of the project.

# In Kind Cost Share

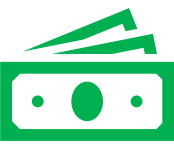
- In Kind Cost Share – is a contribution to the project made by the recipient, subrecipient, or vendor that do not involve a payment or reimbursement and represent donated items or services.
- In Kind cost share items include volunteer personnel hours, donated existing equipment, donated existing supplies, etc.
- The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section.
- All cost share items must be necessary to the performance of the project.



# More About Cost Share

- Funds from other Federal sources MAY NOT be counted as cost share. This includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds.
- Cost sharing commitment letters from subrecipients and vendors must be provided with the original application.
- Fee or profit, including foregone fee or profit, are not allowable as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E.





# SF 424A Tab

Applicant Name: 0		Award Number: 0					
Budget Information - Non Construction Programs							
OMB Approval No. 0348-0044							
Section A - Budget Summary							
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		Total (g)	
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		
1. Budget Period 1				\$0	\$0	\$0	
2. Budget Period 2				\$0	\$0	\$0	
3. Budget Period 3				\$0	\$0	\$0	
4. Budget Period 4				\$0	\$0	\$0	
5. Budget Period 5				\$0	\$0	\$0	
6. Totals				\$0	\$0	\$0	
Section B - Budget Categories							
6. Object Class Categories	Grant Program, Function or Activity					Total (5)	
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5		
a. Personnel	\$0	\$0	\$0	\$0	\$0	\$0	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	
d. Equipment	\$0	\$0	\$0	\$0	\$0	\$0	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	
f. Contractual	\$0	\$0	\$0	\$0	\$0	\$0	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	
h. Other	\$0	\$0	\$0	\$0	\$0	\$0	
i. Total Direct Charges (sum of 6a-6h)	\$0	\$0	\$0	\$0	\$0	\$0	
j. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	
k. Totals (sum of 6i-6j)	\$0	\$0	\$0	\$0	\$0	\$0	
7. Program Income						\$0	
SF-424A (Rev. 4-92)							
Prescribed by OMB Circular A-102							
Authorized for Local Reproduction							

- This tab automatically populates based on the formulas in the workbook.
- Check all entries to make sure this matches up with the Summary page.



# Help and Contact Information

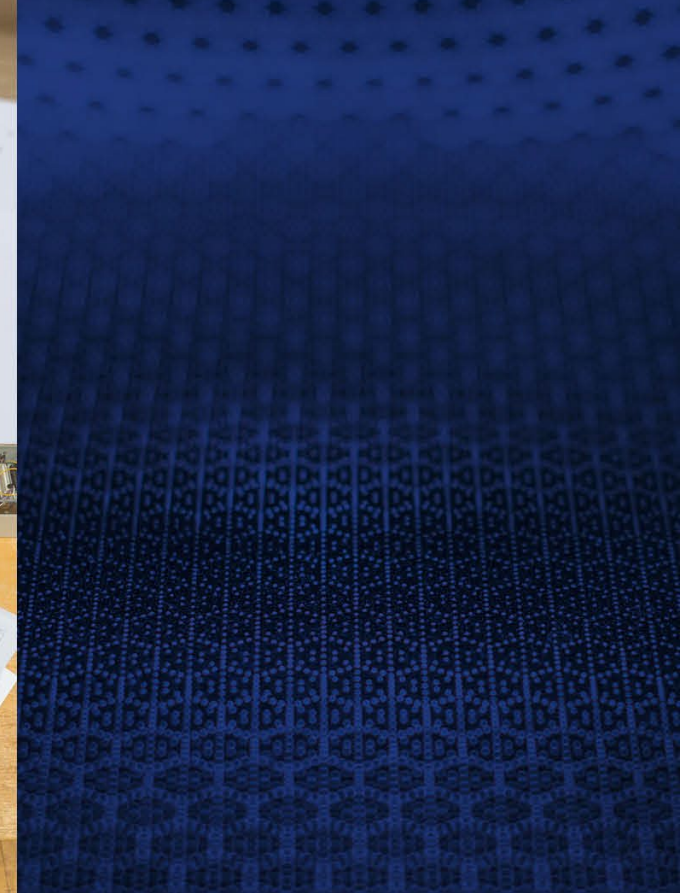
- Michele Gibson, Director of Finance REMADE  
(585)213-1035, [mgibson@remadeinstitute.org](mailto:mgibson@remadeinstitute.org)
- Kim Schmitt, REMADE Finance  
[kschmitt@remadeinstitute.org](mailto:kschmitt@remadeinstitute.org)

The REMADE team is here to help and assist you will a properly completed EERE T 540.132 02. We want this process to be smooth and seamless so you can focus on your projects. Please call and we are happy to help!



# Questions About Budgets?





# Contractual Requirements

## Project Negotiation



*Acknowledgment:* "This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Advanced Manufacturing Office Award Number DE-EE0007897."

*Disclaimer:* "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government. The views and opinions of individuals expressed in this report are those of the individuals and do not necessarily represent those of the U.S. Department of Energy or the Office of Energy Efficiency and Renewable Energy (EERE)."/>

# REMADE Membership Requirement

- REMADE membership is required for all organizations participating in REMADE projects.
- Organizations are not considered REMADE members until payment of membership dues.
- All organizations must be REMADE members **prior** to project launch.
- Industry members must join at Tier 1 or Tier 2 level to receive federal funding.
- Contact John Kreckel, REMADE's Director of Membership and Workforce Development, to start the membership onboarding process:

**John Kreckel**  
**Director of Membership and Workforce Development**  
**REMADE Institute**  
**[jkreckel@remadainstitute.org](mailto:jkreckel@remadainstitute.org)**

# Contractual Requirements

## REMADE Membership Agreement

- REMADE Membership Agreement must be signed and executed by participating organizations prior to project launch.
- Terms in REMADE Membership Agreement apply uniformly across consortium members and are non-negotiable. This includes the Non-Disclosure Agreement, Export Control Plan, U.S Manufacturing Plan, I.P. Management Plan, and Foreign Entity Participation Plan.

## Project Sub-Award Agreements

- For each project, REMADE will execute a Subaward Agreement with the lead organization of the project.
- Sub-Award must be executed by the authorized signatory of your organization.
- Terms and Conditions flow down to any project participants.
- REMADE reserves the right to review any contractual agreements that you may enter into with your partners in support of this project.

# I.P. Management

- Inventorship of REMADE IP will be determined in accordance with the intellectual property laws of the United States, including patent and copyright law.
- Each member retains ownership of its own background intellectual property and any data specified as “Limited Rights Data.”
- Inventing member shall have 60 days from the receipt date to report all REMADE IP to REMADE, who shall then distribute copies of invention records to DOE and the members as appropriate.
- The inventing member(s) of any REMADE IP shall grant an option to license such REMADE IP to members. The order and type of option for such licenses are determined by the membership level and project participation, as it was at the time such REMADE IP was created or first reduced to practice.

# Background Intellectual Property

- Each Member retains ownership of background intellectual property and any data specified as “Limited Rights Data.” Defined as:
  - (i) In existence prior to or first produced outside any work funded by REMADE, except in the case of invention, the inventions must have been conceived outside of work funded by REMADE and not first actually reduced to practice through work funded by REMADE
  - (ii) Legally necessary for performance of REMADE work, and
  - (iii) Identified in writing by the intellectual property owner or licensee who has been provided the right to sublicense
- Members shall disclose to REMADE and list background IP and Limited Rights Data in the REMADE Project Agreement.
- If background IP is required for implementation of REMADE project results, a good faith commitment to enter into negotiations for a license of this background IP to REMADE Project partners is required.

# Foreign Entity and Individual Participation

## Foreign Entity Participation

- Foreign entities participating in REMADE projects must be approved by REMADE and DOE prior to project launch.
- Foreign entities defined as:
  - (i) Incorporated outside of the U.S;
  - (ii) Entities whose primary place of business is outside the U.S.; and
  - (iii) U.S. incorporated companies that are owned or substantially controlled (50 percent or greater) by foreign governments, firms, institutions, or individuals.

## Foreign National Participation

- Individual foreign national participation must also be approved by REMADE and DOE prior to project launch.

**All work of the Institute must be performed in the United States unless DOE provides a waiver**



# REMADE Contacts



## ***SOPO and NEPA:***

Ed Daniels

[edaniels@remadeinstitute.org](mailto:edaniels@remadeinstitute.org)

Mike Haselkorn

[mhaselkorn@remadeinstitute.org](mailto:mhaselkorn@remadeinstitute.org)

John Hryn

[jhryn@remadeinstitute.org](mailto:jhryn@remadeinstitute.org)



## ***Budget:***

Michele Gibson

[mgibson@remadeinstitute.org](mailto:mgibson@remadeinstitute.org)

Bonnie Schmiffmaker

[bschmiffmaker@remadeinstitute.org](mailto:bschmiffmaker@remadeinstitute.org)



## ***Membership and Sub Award Agreement***

John Kreckel

[jkreckel@remadeinstitute.org](mailto:jkreckel@remadeinstitute.org)

Michelle Schlafer

[mschlafer@remadeinstitute.org](mailto:mschlafer@remadeinstitute.org)

# Next Steps

- Please provide a list of the contacts in your organization to your designated Project Manager:
  - Finance Contact for budget
  - Contract Officer for sub award agreement
  - Project Team Contacts for ALL Organizations working on the Project
- REMADE contacts will follow up with their counterparts to enable preparation of the documents.
- You have received the comment summary form from the Merit Reviewers in the Information Package
- REMADE project managers will forward any additional SOPO comments and budget comments to the PI for each project
- **YOU are NOT authorized to start work on your project until completion of the award process.**