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.”

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### Agenda for the Webinar

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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<tr>
<td>REMADE Mission, Goals, and Technical Performance Metrics</td>
<td>5 min</td>
</tr>
<tr>
<td>Review of RFP Topics</td>
<td>40 min</td>
</tr>
<tr>
<td>Questions and Answers</td>
<td>10 min</td>
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<tr>
<td>Proposal Submission Process</td>
<td>25 min</td>
</tr>
<tr>
<td>Questions and Answers</td>
<td>10 min</td>
</tr>
</tbody>
</table>

- Please hold your questions until the Q&A. We will review them at the end of each session.
- All questions will be posted on the REMADE Website following this information session
- Questions and responses will be updated regularly throughout the proposal submission process
REMADE Mission:
Reduce embodied energy and carbon emissions through early stage applied research & development

REMADE STRATEGIC GOALS

Enable greater utilization of secondary feedstocks, requiring less energy to produce

Reduce primary materials consumption while achieving better than cost and energy parity for key secondary materials

Develop transformational technologies to expand recycling, recovery, remanufacturing and reuse in US manufacturing

REMADE TECHNICAL PERFORMANCE METRICS

Performance Goals

- 30%: Reduction of primary feedstock consumption by 30%
- 30%: Reduction of energy demand for secondary feedstock processing by 30%
- 25%: Improvements in embodied energy efficiency
- 20%: 10x reduction in primary material feedstock and 20% reduction in associated GHG
- Cross Industry Reuse
- Cost Parity

REMADE is a public/private partnership developing transformational technologies to accelerate the transition to a Circular Economy for plastics, metals, fibers and e-waste

REMADE’s Value Proposition for the U.S. Economy

1) Increase U.S. manufacturing competitiveness by developing and deploying technologies to increase recovery, reuse, remanufacturing and recycling

2) Establish the United States as the Global Leader in sustainable manufacturing and adoption of Circular Economy principles

3) Create opportunities for significant investment in transformative manufacturing

4) Create new job opportunities across the workforce and educate the workforce to benefit from these opportunities
The REMADE Institute

A national consortium of member organizations comprised of industry, academia, national laboratories, trade associations, and non-profit entities collaborating on early stage applied research activities and the development & dissemination of key industrial technology initiatives.

TECHNOLOGY FOCUS AREAS ORGANIZED AROUND 5 NODES DESIGNED TO ADDRESS CROSS-CUTTING CHALLENGES

**Systems Analysis and Integration**

Data collection, standardization, metrics, and tools for understanding material flow.

**Design for Re-X**

Design tools to improve material utilization and reuse at End-of-Life (EOL).

**Manufacturing Materials Optimization**

Technologies to reduce in-process losses, reuse scrap materials, and utilize secondary feedstock in manufacturing.

**Remanufacturing/ EOL Reuse**

Efficient and cost-effective technologies for cleaning component restoration, condition assessment, and reverse logistics.

**Recycling and Recovery**

Rapid gathering, identification, sorting, separation, contaminant removal, reprocessing and disposal.

**MATERIAL CLASSES**

- Metals
- Polymers
- E-waste
- Fibers

Update on RFP Release

As of Oct 7, 2019, REMADE Institute and the Advanced Manufacturing Office are working together to finalize the RFP Process and Topics.

*The information included in this presentation should be considered preliminary for informational purposes only.*

*Final terms will be communicated through the official RFP release, shared with members via REMADE newsletter, and posted to remadeinstitute.org*
Development of the RFP 19-01

Recommendations from the TAC, SAC, and GB that influenced the Third RFP

- Identifying roadmap activities were too broad
- Understand underlying economics of material classes and/or applications
- Impact the China Import Scrap Ban was having on the recycling industry
# Highlights of RFP 19-01

- $24 million investment across two Areas of Interest
- 11 Research and Development (R&D) Topics
- 4 Education & Workforce Development (EWD) Topics

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
<th>Total Investment</th>
<th>REMADE Funding¹</th>
<th>Member Cost Share</th>
<th># of Awards Anticipated</th>
<th>Period of Performance</th>
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</thead>
<tbody>
<tr>
<td>R &amp; D</td>
<td>$22 million</td>
<td>$11 million</td>
<td>$11 million (1:1 cost share)</td>
<td>12-18</td>
<td>12–24 months</td>
</tr>
<tr>
<td>EWD</td>
<td>$2 million</td>
<td>$1 million</td>
<td>$1 million (1:1 cost share)</td>
<td>4-8</td>
<td>6 months</td>
</tr>
</tbody>
</table>

¹ REMADE funding is the REMADE portion of the total funding. Proposers need to provide equivalent cost-share for any project proposed.
Preliminary RFP Topics

**Design for Re-X**
- **DE-1** Development of New Design for Re-X Methods for Evaluating Designs (*Exploratory or Full Proposals*)
- **DE-2** Integration of Existing Design for Re-X Methods and Tools into CAD/CAM Systems (*Full Proposals only*)
- **DE-3** Development of New Tools to Quantify the Financial Benefits of Design for Re-X (*Exploratory or Full Proposals*)

**Materials Manufacturing Optimization**
- **MM-1** Development of Technologies for Increasing Secondary Feedstock Use 20% (*Full Proposals only*)
  - **Sub-Topic A** - Materials Processing Technologies and Characterization Methods
  - **Sub-Topic B** - Manufacturing Processes that Incorporate Sensing/Controls or Artificial Intelligence
- **MM-2** Development of Processing Approaches to Enable Cross-industry Uses of Secondary Feedstocks (*Full Proposals only*)

**Remanufacturing and End-of-life Reuse**
- **RM-1** Development of Core Condition and Valuation Technologies (*Full Proposals*)
- **RM-2** Development Technologies to Characterize Part Cleanliness (*Exploratory or Full Proposals*)
- **RM-3** Development of Improved Repair Technology (*Exploratory or Full Proposals*)

**Recycling and Recovery**
- **RR-1** Development & Validation of Metal Separation Technology for Complex Metal Streams (*Exploratory or Full Proposals*)
- **RR-2** Development & Validation of Technologies to Increase Recovery of Metals and Polymers from E-waste by 30% (*Full Proposals only*)
- **RR-3** Development of Novel Technologies to Remove Pigments from Polymers to Increase in Polymer Rec Rate 25% (*Full Proposals only*)

**Education and Workforce Development**
- **EWD-RR-1** Advanced Education and Workforce Training in Metals Recycling
- **EWD-RR-2** Advanced Education and Workforce Training in Fibers Recycling
- **EWD-RR-3** Advanced Education and Workforce Training in Electronic Waste (E-Waste) Recycling
- **EWD-RR-4** Advanced Education and Workforce Training in Plastics Recycling
Layout of each RFP Topic Summary follows RFP format

• Problem – High-level summary of the issues

• Project Focus – REMADE seeks Exploratory or Full Proposals to ...

• Proposals submitted in response to this RFP must ...

• By the end of the project ... validate the technology in a lab or relevant environment
Design for Re-X
Preliminary RFP Topics

Node Lead - Deborah Thurston
Deputy Node Lead – Bert Bras
DE-1 Development of New Design for Re-X Methods for Evaluating Designs (Exploratory or Full Proposals)

Commonly used checklists and rules of thumb for design are too simplistic to address the broad range of products and materials in the marketplace. As a result, industry misses the opportunity to design parts, assemblies, products, or product families that can be recovered, reused, remanufactured, or recycled.

Project Focus
REMADE seeks Exploratory or Full Proposals to develop new Design for Re-X methods that industry will use during conceptual or preliminary design to identify how different design alternatives and/or Re-X methods would influence energy consumption, material usage, waste generation, cost, and the ability to recover, reuse, remanufacture, or recycle parts when they are first manufactured and at the end-of-life.

- Developed methods must quantify the energy consumption, material usage, waste generation, and cost for each alternative of that design
- Estimate the extent of what can be recovered, reused, remanufactured, or recycled

Proposals submitted in response to this RFP must...
1. clearly specify what is being designed and the design format (+ file format etc.) being used
2. use and provide sources for high-quality data sets, and
3. propose Design for Re-X methods that are easily generalizable to multiple designs.

By the end of the project, the industry partner should validate the results of the method using the design alternatives and design representations they provided at the outset of the project.
DE-2  Integration of Existing Design for Re-X Methods and Tools into CAD/CAM Systems (Full Proposals only)

Currently, it is not possible to evaluate reusability, recyclability, remanufacturability or any other Re-X topic in a commercial CAD/CAM system. As a result, Re-X analyses are performed outside the CAD/CAM software, and these evaluations often take place after the most significant design decisions have already been made.

Project Focus
REMADE seeks Full Proposals that address this problem by integrating existing Re-X analyses and syntheses techniques with commercially available design tools and databases to provide design engineers immediate feedback on how different design alternatives and relevant manufacturing methods would influence the energy consumption, material usage, waste, and cost of different Re-X options at end-of-life.

• Focus on integrating existing Design for Re-X methods or tools with commercial CAD/CAM systems
• Once integrated, the developed methods shall estimate the extent of what can be recovered, reused, remanufactured, or recycled, as well as associated energy consumption, material usage, waste generation, and/or cost, as applicable.

Proposals submitted in response to this RFP must...
1. clearly specify what is being designed, the CAD/CAM system being used, and the CAD file format in which the design information is captured,
2. use and provide sources for high-quality data sets, and
3. utilize Design for Re-X methods and tools that are easily generalizable to multiple designs.

By the end of the project, the process by which the method or tool integrates directly with the CAD/CAM system should be automated, and the industry partner should validate the results of the method using the design alternatives and design representations they provided at the outset of the project.
DE-3  Development of New Tools to Quantify the Financial Benefits of Design for Re-X (Exploratory or Full Proposals)

There are currently no tools for quantifying the financial benefits that could be accrued at the end-of-life or performing trade-off analysis between initial production costs and end-of-life revenue streams. As a result, too many products are designed without fully considering the financial benefits of design for recovery, recycling, remanufacturing or reuse.

Project Focus
REMADE seeks Exploratory or Full Proposals that develop and validate tools that industry could use to evaluate the financial implications that design choices would have on the long-term costs and benefits of Re-X
• Tools must quantify the impact of design choices on initial costs for the first product lifecycle & revenue/profitability at end-of life and subsequent lifecycles
• Calculate return on investment (ROI), payback, annual cost/net present value
• Account for uncertainty in present/future material & manufacturing costs associated with usage and waste generation

Proposals submitted in response to this RFP must...
1. clearly specify the components or products and end-of-life Re-X processes being evaluated,
2. identify the design format (+ file format etc.) being used,
3. use and provide sources for high-quality data sets, and
4. utilize methods for calculating financial metrics that are easily generalizable to any design

By the end of the project, the industry partner should validate the results of the method using the design alternatives and design representations they provided at the outset of the project.
Manufacturing Materials Optimization
Preliminary RFP Topics

Node Lead – Pradeep Rohatgi
Deputy Node Lead – Alan Luo
MM-1 Development of Technologies for Increasing Secondary Feedstock Use in Manufacturing by 20% Without Loss of Properties or Performance (Cross Nodal Topic with the Recycling & Recovery Node) (Full Proposals only)

The inability to cost-effectively and energy-efficiently identify and separate secondary materials frequently results in the accumulation of contaminants in recovered secondary materials. Those materials that can be separated often exhibit compositional variations that require manufacturers to adjust their processes to accommodate these variations, which may cause a loss of properties or performance.

Project Focus
REMADE seeks Full Proposals to develop/improve secondary feedstock use in manufacturing using one of the following approaches:

A. materials processing technologies to reduce the impact of contaminants and characterization methods to assess/standardize the composition and quality of secondary material streams and bales and/or

B. manufacturing processes that incorporate sensing and controls or artificial intelligence to adapt to composition or material properties variations that are inherent in secondary feedstocks or that arise as secondary feedstock content is increased

Materials of interest include, but are not limited to:

- Steel, where recycled content is 62%
- Aluminum, where current recycled content is 35%, and third generation die-casting alloys show the potential to use up to 100% secondary feedstock
- Paper, where current recycled content is ~39%
- Plastics, where only 9% of all plastic is currently recycled.
Sub-Topic A – Materials Processing Technologies and Characterization Methods

Project Focus
REMADE seeks Full Proposals focused on experimental, rather than computational approaches, to increase recycled content in manufacturing feedstocks.

• Materials Processing Technologies: validate that application of technologies enables manufacturers to use secondary feedstocks, therefore increasing secondary feedstock use by 20% and at cost parity with primary feedstocks
• Characterization Methods: deployment of advanced characterization methods and/or adoption of existing characterization techniques are needed to enable consistent, reliable, and timely measurement of the quality and composition of secondary material streams for the four material classes

Proposals submitted in response to this RFP must...
1. clearly specify the baseline against which progress will be measured (e.g. current practice for use of secondary feedstocks and/or disposition of secondary materials such as downcycling, export, or landfill), and
2. specify the expected improvements resulting from the proposed process technology or materials characterization approach.

By the end of the project, proposers should experimentally validate the efficacy of the approach for producing secondary feedstocks of suitable quality by validating their use with a manufacturing process in a laboratory or relevant environment.
Sub-Topic B – Manufacturing Processes that Incorporate Sensing/Controls or Artificial Intelligence

Project Focus
REMADE seeks Full Proposals focused on increasing the use of secondary feedstocks by 20% through development of sensing and control techniques for quantifying variations in secondary feedstock material composition and/or adjusting manufacturing processing parameters to accommodate variations in secondary feedstock composition. AI technologies that employ the use of sensor data that is either
1. gathered during the manufacturing process or
2. gathered offline and used to train machine learning models to subsequently adjust manufacturing processes

Proposals submitted in response to this RFP must…
1. clearly identify the secondary feedstock being addressed and specify the baseline against which progress will be measured (e.g. current practice for use of secondary feedstocks and/or disposition of secondary materials such as downcycling, export, or landfill) and any limitations on the level of secondary feedstock that can currently be used, and
2. quantify the expected improvement in secondary feedstock utilization resulting from the proposed sensing and control strategy or AI technology adopted.

By the end of the project, proposers should experimentally validate the efficacy of the approach for increasing secondary feedstock use by demonstrating their use with a manufacturing process in a laboratory or relevant environment.
MM-2 Development of Processing Approaches to Enable Cross-industry Uses of Secondary Feedstocks (Cross Nodal Topic with the Recycling & Recovery Node) (Full Proposals only)

**Problem:** Manufacturers frequently lack awareness of the quality and availability of secondary material streams within and across industries. This limits their ability to reuse recycled and recovered materials as cost-effective material feedstocks from one or more different industries.

**Project Focus**
REMADE seeks Full Proposals from cross-industry teams to develop and validate the use of cross-industry secondary feedstock without negatively impacting manufacturing yields or throughput.

- Cross-industry proposal teams must include a company that is the source of the secondary feedstock to be used and a second company from another industry who will utilize these feedstocks
- Proposal team members from national labs, academic institutions, and trad associations that possess the technology required to facilitate cross-industry use of secondary feedstocks are also eligible to participate

**Proposals submitted in response to this RFP must...**
1. clearly identify the cross-industry secondary feedstock being utilized and the companies that are providing and utilizing this material,
2. specify the extent (in million metric tons) to which this secondary feedstock is currently being utilized and where and how it is being used (such as downcycling, export, or landfill),
3. outline the recycling and recovery processes or characterization methods that will be used to prepare the secondary feedstock for cross-industry use and the manufacturing processes that will subsequently use the feedstock,
4. describe any sensing and control strategy or artificial intelligence technology to be employed to facilitate feedstock utilization, and
5. quantify how much cross-industry secondary feedstock will be utilized.

By the end of the project, proposers should experimentally validate the efficacy of the approach by demonstrating the use of the secondary feedstocks in a cross-industry manufacturing process in a laboratory or relevant environment.
Remanufacturing and End-of-life Reuse
Preliminary RFP Topics

Node Lead – Mike Thurston
Deputy Node Lead – Kristi Schipull
RM-1 Development of Core Condition and Valuation Technologies (Full Proposals only)

**Problem:** Significant value and energy must be invested in disassembly and cleaning to determine if a reman core is in adequate condition to be cost-effectively remanufactured. As previous studies have illustrated, the economic and energy costs associated with these two steps can represent a significant fraction of the overall cost and energy consumption of remanufacturing.

**Project Focus**
REMADE seeks Full Proposals to develop new approaches to assess the condition and value of reman cores and their components prior to disassembly and/or cleaning. Solutions may include indirect/invasive inspection methods or probabilistic methods that rely on asset operational data.
- Proposals should target products where disassembly and cleaning represent 15% of the total cost and process energy of the remanufacturing process.

**Proposals submitted in response to this RFP must...**
1. Clearly identify the product being addressed,
2. Specify the baseline against which progress will be measured (e.g., current disassembly and cleaning procedures for incoming cores and the estimated fraction of total cost and energy attributable to disassembly and cleaning),
3. Utilize inspection technologies or analysis techniques that can be easily applied to multiple products/core, and
4. Specify the expected cost and energy saved (or avoided) as a result of the core assessment and valuation technology (or technologies) being proposed (underlying assumptions regarding the expected level of performance or reliability of the technologies and their impact on the savings estimates should be substantiated).

By the end of the project, proposers should validate the core condition and valuation process in a laboratory or relevant environment using production-relevant components and production-relevant data.
RM-2 Development Technologies to Characterize Part Cleanliness (Exploratory or Full Proposals)

**Problem:** Current cleaning processes used in remanufacturing are usually batch oriented and are established through process development trials and subsequent qualification tests. To accommodate the significant variation in cleanliness seen in cores returned for remanufacturing, the standardized cleaning processes that are developed tend to over-process most of the cores. In the absence of accurate or cost-effective techniques for measuring cleanliness on the shop floor, remanufacturers are unable to effectively tune and control existing cleaning processes or develop and optimize new processes, which can lead to process and energy inefficiencies.

**Project Focus**
REMADE seeks Exploratory or Full Proposals to develop analytical tools or assessment methodologies to rapidly and cost-effectively measure the amount and types of organic and inorganic surface contamination of “dirty” and “clean” surfaces and deliver one of the following outcomes:

- Allow more efficient part/batch level control of cleaning processes, thus decreasing the impact of energy intensity related to over-processing by 15%
- Enable validation of alternate cleaning technologies that improve energy efficiency or decrease the generation of hazardous wastes by at least 20%
- Reduce cleaning-related quality defects, including those attributable to cleaning bath contamination, by 20%

*Proposals submitted in response to this RFP must...*
1. clearly identify the types of products/cores that are targeted, including the substrate material, contaminants and cleanliness requirements that must be met,
2. specify the baseline against which progress will be measured
3. utilize detection methods and techniques that can be applied to a wide variety of cleaning applications and base materials, and
4. quantify the expected energy efficiency and economic benefits and the anticipated reduction in process defects, recleaning rates, and process emissions that will result as the technologies being proposed are developed and integrated on the shop floor

By the end of the project, exploratory proposals should prove the feasibility of the measurement process on sample products in a laboratory environment.
RM-3 Development of Improved Repair Technology (Exploratory or Full Proposals)

**Problem:** The ability to realize the material consumption, embodied energy, and greenhouse gas (GHG) emission benefits that remanufacturing offers is strongly dependent on whether repair procedures for used components and materials have been developed. The ability to develop and implement these repairs is often limited by technical factors and economic factors. Both may become barriers to extending the useful life of these components and materials during remanufacturing and can decrease the motivation for repair or remanufacturing at the product level.

**Project Focus**
REMADE seeks Exploratory or Full Proposals to develop new repair technologies that can overcome the technical or economic barriers to remanufacturing or reuse for two remanufacturing scenarios affecting a high-volume, REMADE-relevant, material stream such as iron/steel, aluminum, plastic, or electronic components from the automotive or Heavy-Duty and Off-Road (HDOR) remanufacturing sectors:

- For components/modules that are current remanufactured: develop a cost-effective repair process that either enables an additional 20% to be repaired or reused in like-new condition or enables additional remanufacturing cycles beyond the baseline case
- For components/modules where no cost-effective repair process exists: develop a cost-effective repair process that enables at least 30% recovery rate from remanufactured cores to be reused.

Proposals submitted in response to this RFP must...

1. clearly identify the component or module the repair will be developed for, the specific material repair challenge to be addressed, and the design related issues that will need to be addressed,
2. specify the baseline condition within the affected industry against which progress will be measured,
3. utilize a repair technology that is transferable to multiple high-value applications, and
4. quantify the expected improvements in reuse rates and energy and materials savings resulting from development of the proposed repair technology

By the end of the project, the repair technology that has been developed should be validated in a laboratory or production-relevant environment.

Recycling and Recovery
Preliminary RFP Topics

Node Lead – Eric Peterson
Development and Validation of Metal Separation Technology for Complex Metal Streams (Exploratory or Full Proposals)

**Problem:** Traditional metals (atomic and molecular) separations processes, such as solution extraction, ion exchange, and precipitation are inefficient for extracting relatively low-concentration metals from complex metal-bearing waste streams because these types of processes typically require multiple stages of separation, and process costs outpace recovered product value as the concentration of the metal decreases and/or the complexity of the waste-stream increases. As a result, the actual recovery of metal from these complex streams is limited.

**Project Focus**
REMADE seeks Exploratory or Full Proposals to identify and develop robust, cost-effective, and efficient metal molecular and atomic (metal) separation processes for selective recovery of metals from complex metal-bearing waste streams.

- Develop a novel temperature/pressure stable process system that can provide selective separation and recovery of metals from several waste streams
- Operating temperature of the proposed process shall not exceed 50°C
- Effective in recovery of target metals down to residual levels of parts per billion in the reject stream

**Proposals submitted in response to this RFP must...**
1. clearly specify the baseline against which progress will be measured,
2. quantify the expected improvements versus state-of-the-art (SOA), such as additional waste or process streams that could be addressed with the proposed technology, the expected composition of the waste streams, the target metals to be recovered and the target scale of the proposed separation process, and
3. specify how any hazardous materials and waste streams will be handled and disposed.

By the end of the project, the separation technology must be validated in a laboratory or relevant environment, and the industry partner should validate that the recovered metals would meet the expected quality requirements for at least one end-use application.
Development and Validation of Technologies to Increase Recovery of Metals and Polymers from E-waste by 30% (Full Proposals only)

**Problem:** Processing of e-waste materials results in complex mixtures of polymers and plastics that need to be separated. The absence of cost-effective technologies for separation and recovery of these materials is one of the factors preventing greater e-waste recycling.

**Project Focus**
REMADE seeks Full Proposals to develop cost-effective separation technologies that can more effectively and selectively separate individual metals from the non-ferrous fraction and enable the separation and recovery of specific polymers from the polymeric fraction of e-waste, which will enable 30% higher e-waste recycling rates.

- Capability to selectively recover product fractions from the polymeric fraction and/or the non-ferrous fraction that increase the value-added of e-waste recycling, specify target materials for recovery based on the expected performance of their technology option, and the expected composition of the e-waste stream that will be considered
- Enable selective recovery of the higher-value and higher-volume materials and provide the capability of selectively recovering at least 50% of the polymeric fraction or 75% of the no-ferrous fraction as value-added products
- Should be robust and agnostic to the variations in composition of e-waste scrap in the U.S. and applicable to at least 25% of the estimated U.S. e-waste

**Proposals submitted in response to this RFP must...**
1. clearly specify the baseline against which progress will be measured
2. quantify the target materials that are to be recovered, the expected improvements the proposed technology will provide versus the state-of-the-art, such as additional target materials that could be recovered, and/or expected yield and quality improvements that could be realized,
3. specify the target scale of the process (mass of e-scrap input per operating hour), and
4. specify how any hazardous materials and waste streams will be handled and disposed.

By the end of the project, the proposed technology for recovering metals and polymers from e-waste must be experimentally validated in a laboratory or relevant environment.

Development of Novel Technologies to Remove Pigments from Polymers to Enable a 25% Increase in the Recycling Rate of Polymers and a 25% Reduction in Energy Consumption. (Full Proposals only)

Problem: One barrier to the broader use of recycled polymers is that the range of pigments used in polymers can result in undesirable or variable colors in recycled polymers. Because of this, some recycled polymer streams cannot be readily used to produce plastics in colors that are critical for the brand identity of some consumer products packaging.

Project Focus
REMADE seeks Full Proposals that address one or more of the following opportunities to increase the recycling rate of polymers by 25%, while also reducing energy consumption by at least 25% compared with the use of virgin polymers:

• Chemical recycling approaches that convert pigmented polymers into monomers that can be used to produce pigment-free grades of PET, HDPE, LDPE, PP and/or PS.
• Recycling approaches using solvents to dissolve the polymer followed by the removal of pigments to produce pigment-free grades of PET, HDPE, LDPE, PP and/or PS.

Proposals submitted in response to this RFP must...
1. clearly specify the baseline against which progress will be measured (e.g., the current recycling rate(s), and volumes being recovered using commonly practiced technologies (if any) for both the polymer(s), in general, and for the polymer(s) in the waste stream being targeted,
2. quantify the expected improvements the proposed technology will provide versus the state-of-the art (such as additional waste or process streams that could be addressed with the proposed technology, the estimated yield, quality, and material volumes to be recovered, and the target scale of the proposed technologies), and
3. estimate the anticipated energy improvements and economic competitiveness of the technology by comparing the expected energy and production costs with the cost to produce the corresponding virgin polymer(s).

By the end of the project, proposers should experimentally validate the pigment removal technology in a laboratory or relevant environment. The industry partner should validate that the polymer(s) recovered from the waste streams will meet the requirements for at least one end-use application and provide experimental evidence that the proposed approach is technically and economically feasible.
Education and Workforce Development (EWD)
Area of Interest
EWD Roadmap Posted on Website

- Highlights centrality of EWD to REMADE Mission
- Align activities w/EWD Strategy & Tiered Certificate Pathway
- Incorporates feedback from Industry Interviews
- Establishes consistent format for all roadmaps
IDENTIFY EXISTING GAPS AND OPPORTUNITIES (2018-2019)
- Workforce Profile Report
- Industry interviews to identify training gaps within incumbent workforce.
- Catalog current training offerings at REMADE-relevant trade organizations, certifying organizations, and academic member institutions

CREATE AND PILOT CONTENT (2019-2020)
Develop and expand training content consistent with the Tiered Certificate Pathway hierarchy
- Launch Professional Certificate Programs for incumbent workforce that indicates mastery of topics within Institute technology focus areas
- Develop and offer Short Course workshops designed for the incumbent workforce
- Present Overview and Awareness training
- Identify strategic partnerships to maximize distribution of content

BROADEN AND AMPLIFY DEVELOPED CONTENT (2020-2021)
- Increase number of Overview and Awareness and Short Course training offerings
- Increase number of Professional Certificates
- Integrate workforce development offerings in conjunction with the development new technology from REMADE projects
- Create a virtual repository of training products
- Expand strategic partnerships to increase access / distribution
Demonstrated mastery of the subject matter for a defined number of modules in plastic recycling and (possibly) other REMADE subjects.

Content of a selection of plastics recycling modules organized into customized workshops meeting audience requirements.

High level content from various plastics recycling modules organized into 20-60 min presentations providing awareness of relevant issues.
Proposed RFP 3.0 Workforce Development Topics

• Recycling Training
• Focused on REMADE Material Classes
  ✓ E-Waste
  ✓ Metals
  ✓ Fibers
  ✓ Polymers

• Target Audience: Advanced Technician or Engineer incumbent worker with basic understanding of recycling

• Duration: 10 hours of foundational content per material class; organized by module

• Overall Objective: Enable audience to make informed decisions related to their role in recycling

• Individual modules teach in-depth understanding of single concept; individual modules stackable and aligned to achieve a formal certificate from REMADE.

• Customizable for industry
Education and Workforce Development

The Education & Workforce Development (EWD) focus area identifies activities that will develop the workforce needed to implement technologies that can lead to greater material recovery, reuse, remanufacturing, and recycling.

- Prioritizing topics and target audiences for training content and developing educational training materials needed to teach the incumbent workforce key skills
- Activities focus on propagating education and training materials into industry and academia to produce the workforce required to sustain and expand Re-X
- REMADE’s approach focuses on creating and piloting training content that addresses gaps that are not being addressed in existing courses and materials.

The goal of EWD projects are to education, train, and develop the incumbent and future workforce to support deployment and use of REMADE technologies.
Metals, fibers, and e-waste recycling proposals are expected to deliver the following content:

(1) Develop at least ten hours of content organized by specific module topics that can be stacked to enable creation and delivery of a certificate within six months of award.

(2) Provide six hours of electronic content recorded via lecture capture software.

(3) Deliver at least one in-person short course workshop to the incumbent workforce within six months of the award (e.g. at institution location, conference speaking opportunities, REMADE member events, etc.).

As an addition to REMADE’s existing content, plastics recycling proposals are expected to deliver the following:

(1) Develop and deliver at least three hours of content organized by specific modules within six months of award.

(2) Provide three hours of electronic content via lecture capture software.

(3) Deliver at least one in-person short course workshop to the incumbent workforce within six months of the award (e.g. at institution location, conference speaking opportunities, REMADE member events, etc.)
Proposals submitted in response to this RFP must...

1. clearly identify which module topics the proposal addresses (including additional module topics identified by the proposal team),
2. address all the learning objectives listed,
3. provide a complete curriculum outline for the content to be developed that identifies the approximate length of each module, meets the requirements for hours of total content and electronic content specified at the beginning of this section, and identifies the plan for delivering at least one in-person short course within six months of the award,
4. clearly describes the course format and delivery vehicle and articulates why they are the most effective means to deliver course material,
5. not require participants to acquire any licenses or purchase proprietary software to access course materials, and
6. include an affirmation by the proposal team that they will comply with the “REMADE Future Course Offerings Terms and Conditions” governing ownership and dissemination of course content that will be developed.
REMADE invites applicants to develop coursework for **incumbent worker engineer or advanced technician** that provides base training in metals recycling covering the following metals:

- Non-Ferrous metals: includes aluminum, copper, lead, zinc, nickel/stainless/high temp, and other scrap grades.
- Ferrous metals: includes electric furnace casting and foundry grades and specially processed grades.

**Learning Objectives**

- Enable informed decision-making related to participants’ role in metals recycling
- Develop an understanding of the production of the key metals, including raw materials use, product yield, energy consumption, materials losses, and waste generated
- Understand the energy impacts of recycling metals compared with primary production
- Understand current status of material flows of metals with an emphasis on secondary metals
- Understand approaches to increase secondary metal feedstock use in manufacturing
- Understand state-of-the-art technologies in metal recycling
- Develop an understanding of the technical limitations of metal recycling and emerging technologies for overcoming these limitations

*Proposals submitted in response to this RFP must...*

1. clearly identify which module topics the proposal addresses (including additional module topics identified by the proposal team),
2. address all the learning objectives listed,
3. provide a complete curriculum outline for the content to be developed that identifies the approximate length of each module, meets the requirements for hours of total content and electronic content specified at the beginning of this section, and identifies the plan for delivering at least one in-person short course within six months of the award,
4. clearly describes the course format and delivery vehicle and articulates why they are the most effective means to deliver course material,
5. not require participants to acquire any licenses or purchase proprietary software to access course materials, and
6. include an affirmation by the proposal team that they will comply with the “REMADE Future Course Offerings Terms and Conditions” governing ownership and dissemination of course content that will be developed.
EWD-RR-2  Advanced Education and Workforce Training in Fibers Recycling

REMADE invites applicants to develop coursework for incumbent worker engineer or advanced technician that provides base training in fibers recycling with a focus on the following fibers:

(1) Old Corrugated Containers (OCC)
(2) News-grade (Newspaper)
(3) Mixed-Paper
(4) High-grade deinked paper
(5) Pulp substitutes

Learning Objectives
• Enable informed decision-making related to participants’ role in fibers recycling
• Develop an understanding of primary sources of recycled fibers and how they’re produced
• Understand the energy impacts of recycling fibers
• Understand the current status of secondary material flows of fibers
• Understand approaches to increase secondary fiber feedstock use in manufacturing
• Understand state-of-the-art technologies in fiber recycling
• Develop an understanding of the technical limitations associated with recycling fibers and emerging technologies for overcoming these limitations

Proposals submitted in response to this RFP must...
1. clearly identify which module topics the proposal addresses (including additional module topics identified by the proposal team),
2. address all the learning objectives listed,
3. provide a complete curriculum outline for the content to be developed that identifies the approximate length of each module, meets the requirements for hours of total content and electronic content specified at the beginning of this section, and identifies the plan for delivering at least one in-person short course within six months of the award,
4. clearly describes the course format and delivery vehicle and articulates why they are the most effective means to deliver course material,
5. not require participants to acquire any licenses or purchase proprietary software to access course materials, and
6. include an affirmation by the proposal team that they will comply with the “REMADE Future Course Offerings Terms and Conditions” governing ownership and dissemination of course content that will be developed.

REMADE invites applicants to develop coursework for incumbent worker engineer or advanced technician that provides base training in e-waste.

**Learning Objectives**

- Enable informed decision making related to participants role in e-waste recycling
- Understand the energy impacts of recycling fibers
- Understand the current status of secondary material flows of e-waste
- Understand downstream processing of e-waste materials
- Understand approaches to increase secondary e-waste feedstock use in manufacturing
- Understand state-of-the-art technologies in e-waste recycling
- Develop an understanding of the technical limitations associated with recycling e-waste and emerging technologies for overcoming these limitations
- Improve skills in handling of e-waste materials

**Proposals submitted in response to this RFP must...**

1. clearly identify which module topics the proposal addresses (including additional module topics identified by the proposal team),
2. address all the learning objectives listed,
3. provide a complete curriculum outline for the content to be developed that identifies the approximate length of each module, meets the requirements for hours of total content and electronic content specified at the beginning of this section, and identifies the plan for delivering at least one in-person short course within six months of the award,
4. clearly describes the course format and delivery vehicle and articulates why they are the most effective means to deliver course material,
5. not require participants to acquire any licenses or purchase proprietary software to access course materials, and
6. include an affirmation by the proposal team that they will comply with the “REMADE Future Course Offerings Terms and Conditions” governing ownership and dissemination of course content that will be developed.
EWD-RR-4  Advanced Education and Workforce Training in Plastics Recycling

REMADE is currently developing coursework in plastics focused on providing foundational training and invites applicants to develop modules for the incumbent worker engineer or advanced technician that supplements this work.

**Learning Objectives**
- Learn how plastics are recycled through MRFs.
- Trainees will learn basic principles for designing products so that they can be recycled and so that they can best utilize recycled plastics.
- Learn about the various emerging chemical recycling technologies.
- Learn about multi-layer film packaging and challenges for managing that waste stream.

*Proposals submitted in response to this RFP must...*
1. clearly identify which module topics the proposal addresses (including additional module topics identified by the proposal team),
2. address all the learning objectives listed,
3. provide a complete curriculum outline for the content to be developed that identifies the approximate length of each module, meets the requirements for hours of total content and electronic content specified at the beginning of this section, and identifies the plan for delivering at least one in-person short course within six months of the award,
4. clearly describes the course format and delivery vehicle and articulates why they are the most effective means to deliver course material,
5. not require participants to acquire any licenses or purchase proprietary software to access course materials, and
6. include an affirmation by the proposal team that they will comply with the “REMADE Future Course Offerings Terms and Conditions” governing ownership and dissemination of course content that will be developed.
Questions and Answers
Anticipated Details for this Request for Proposal

- 15 Topics aligned to the REMADE Nodes
- Two Areas of Interest:
  - Research & Development
  - Education & Workforce Development
- Up to $12M in REMADE funding available for awards
- Accepting both Exploratory Proposals and Full Proposals
- Required Cost Share Ratio\(^2\)
- Proposers must be REMADE Members by Proposal Due Date *(Anticipated Mid-Dec)*

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
<th>Total Investment</th>
<th>REMADE Funding(^1)</th>
<th>Member Cost Share</th>
<th># of Awards Anticipated</th>
<th>Period of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>R &amp; D</td>
<td>$22 million</td>
<td>$11 million</td>
<td>$11 million (1:1)</td>
<td>12–18</td>
<td>12–24 months</td>
</tr>
<tr>
<td>EWD</td>
<td>$2 million</td>
<td>$1 million</td>
<td>$1 million (1:1)</td>
<td>4–8</td>
<td>&lt; 12 months</td>
</tr>
</tbody>
</table>

\(^{1}\) Funding is the REMADE portion of the total funding  
\(^{2}\) Cost Share Ratio is defined as REMADE Institute funding requested versus Cost Share provided by the proposers.
Overview of the REMADE RFP Process

Step 1) Submission of a Letter of Intent & Project Summary
- Information Session with potential proposers
- Requests for Proposals (RFP) Released
- Submit Letter of Intent + Project Summary
- Technical Leadership Committee (TLC) Review

Team Opt to Submit Proposal?
- No → Stop
- Yes

Step 2) Preparation of Proposal
- Proposal Team Notified & Contracting
- GB Approval and DOE Review/Approval
- TLC Identifies Proposals to Recommend for Funding
- Merit Review Panels
- Submission of Proposal

All questions regarding this RFP must be submitted via email, with the subject line: “REMADE-19-01 Q&A”, to remake_rfp@remadeinstitute.org. Questions and Answers will be posted on the REMADE website.
Letters of Intent and Project Summary

Required Information

• Identify R&D or EWD Topic(s)
• Identify Exploratory Proposal or a Full Proposal
• Identify Proposal Team Members

Format for Project Summary

• Follow the Project Summary Template

Purposes of this Step

• Ensure alignment of proposal ideas with the goals of the project call
• Provides the REMADE Institute an idea of how many proposals will be submitted
• Enables REMADE to identify proposal reviewers and apply the conflict of interest (COI) policy

Submission Requirements

• The Lead Organization must be a member of REMADE at the time the Letter of Intent (LOI) and Project Summary are submitted.
• Submission of a LOI and Project Summary is required to be eligible to submit a proposal.
• LOI and Project Summary will be submitted electronically to: REMADE@remadeinstitute.org
• Must submit Letter of Intent and Project Summary Anticipated Late October

DISCLAIMER: The DRAFT RFP Slides include references to the Project Summary. This has been revised to a Project Abstract. REMADE will only provide feedback to proposers who submit Project Abstracts inconsistent with the goals of the project call. Please visit the REMADE Institute Website https://remadeinstitute.org/project-call-overview for the latest information regarding the LOI and Project Abstract Process.
Differences between R&D Exploratory and Full Proposals

**Exploratory Proposals (17 pages)**

- Provide funding aimed at demonstrating proof of concept and/or reducing uncertainty
- Appropriate for high-risk/high reward technical projects
- Guided by a significant industry-identified REMADE-relevant technical or economic barrier.
- 12 month or less
- Up to $300K total project costs* (REMADE funding + cost share)
- *Industry must provide 25% cost share*
  *Assuming 1:1 cost share*

**Full Proposals (21 pages)**

- Proof of concept already demonstrated or have addressed key uncertainties
- Should lead to validation in a “lab” or “relevant” environment by the end of the project.
- 12 – 24 months
- Up to $1.5M total project costs* (REMADE funding + cost share)
- **Industry must provide 40% of the cost share (large companies) & minimum of $50K for small companies**

The Institute strongly encourages teaming between companies, national laboratories, and universities

EWD Proposals (13 pages)

- Provide funding aimed at developing content specific to each topic within 6 months of the award
- Electronic content recorded via lecture capture software
- Collection of content organized by topic-specific modules thematically tied to each RFP Topic and stackable to enable creation of a certificate program
- 6 month or less

- Up to $200K total project costs\(^1\) (REMADE funding + cost share)
- Anticipated 4-8 Awards
- $1M available REMADE Funding\(^2\)

\(^1\) Assuming 1:1 cost share
\(^2\) Funding is the REMADE portion of the total funding.

The Institute strongly encourages teaming between companies, national laboratories, and universities
Preliminary Statement of Project Objectives (SOPO)

- The SOPO provides a clear and concise statement of goals of the project including expected outcomes, tasks, schedules and milestones. It is the workplan of the project.

- Project SOPOs including milestones are included into the REMADE Institute SOPO and used to monitor Institute progress.

- For this proposal, we are asking for a Preliminary SOPO
  - Tasks, Milestones, Go/No-Go Decision Points
  - Project Management and Reporting
Milestones & Go/No-Go Decision Points

**Milestones**
- Utilize S.M.A.R.T. Milestones, with metrics of success, minimum of one milestone/quarter
- Should ideally reflect attainment of tangible, measurable results required to demonstrate technical progress or move the project toward completion of Go-No/Go decision criteria or accomplishment of project objectives.
- Submittal of a report can be part of the milestone documenting the results or progress, but the report in and of itself should not be the milestone.

**Go/No-Go Decision Points**
- At least one annual Go/No-Go decision point for any proposed work that will span more than one year

### Preparation of S.M.A.R.T. Milestones

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Further Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>S = Specific</td>
<td>Clear and focused to avoid misinterpretation. Should include measures, assumptions, and definitions and be easily interpreted.</td>
</tr>
<tr>
<td>M = Measurable</td>
<td>Can be quantified and compared to other data. It should allow for meaningful statistical analysis. Avoid &quot;yes/no&quot; measures except in limited cases, such as start-up or systems-in-place situations.</td>
</tr>
<tr>
<td>A = Achievable</td>
<td>Attainable, reasonable, and credible under conditions expected.</td>
</tr>
<tr>
<td>R = Relevant</td>
<td>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.</td>
</tr>
<tr>
<td>T = Timely</td>
<td>Doable within the time frame given.</td>
</tr>
</tbody>
</table>
Risks and Risk Abatement Plans

Table for Preparing a Risk Abatement Plan

<table>
<thead>
<tr>
<th>Task</th>
<th>Risk</th>
<th>Risk Type (C/S/T)</th>
<th>Prob (P)</th>
<th>Imp (I)</th>
<th>Risk Score</th>
<th>Risk Abatement Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>H</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
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<td>6</td>
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<td>L</td>
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<td></td>
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<td>M</td>
<td>M</td>
<td></td>
<td>4</td>
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</tr>
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<td></td>
<td></td>
<td>L</td>
<td>L</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Risk Abatement Plan Best Practices
- Every project has risks, including yours
- Not identifying a risk does not mean it doesn’t exist
- Credible projects properly identify risks
- Successful projects develop plans to manage risks
- Risk management is a dynamic process throughout the life of the project – review the plan regularly
- Need to have a plan to address the risk built into the schedule for any risk score of 6 or above

Guidelines for Estimating Probability/Impact Probability Score
- H – Already know it is an issue
- M – May be an issue. Plan for how to address it
- L – Not likely to occur

Impact Score
- H – Significant C/S/T risk to project success
- M – Could impact project success
- L – Not likely to impact project success

Examples for Estimating Impact Risk for a Project

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Impact</th>
<th>Impact Examples (for a 2 year project with $1M budget)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>H</td>
<td>Financial Impact to Project (Labor or Mat'l's) &gt; $75K</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>$25K &lt; Financial Impact to Project (Labor or Mat'l's) &lt; $75K</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Financial Impact to Project (Labor or Mat'l's) &lt; $25K</td>
</tr>
<tr>
<td>Schedule</td>
<td>H</td>
<td>Project Delay &gt; 3 months</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>1 month &lt; Project Delay &lt; 3 months</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Project Delay &lt; 1 months</td>
</tr>
<tr>
<td>Technical</td>
<td>H</td>
<td>Prevents current approach from reaching required level of performance. Alternate solution required.</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>May impact ability to reach required performance or requires a modification to the approach to succeed.</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Current approach has been proven for this (or similar) applications.</td>
</tr>
</tbody>
</table>
Budget Preparation

- Lead Organizations must complete the EERE 335 for the project as a whole (including Project Team and Contractors)
- All proposers, and their subrecipients are required to complete the Budget Justification Workbook, Form EERE 335.
- The Budget should break down cost into categories outlined in the EERE 335 Form
- Max base hourly rate should be no more than $120/hour
- All costs must be directly related to the project

Cost Share

- Minimum 1:1 cost share required (i.e. $1 REMADE funding must be matched by at least $1 of cost share)
- The team as a whole is required to meet the 1:1 cost share requirement (not every team member)
- Industry cost share viewed more favorably in the evaluation criteria
- Cost share may be in-kind or cash, but must be incurred within the project Period of Performance
- Participating organizations providing cost share must be Members of REMADE

All Project Members must be members of The REMADE Institute
Team Member vs Supplier

**Team Members**
- Have a specific role or function on team
- Responsible for specific tasks/milestones
- Must be a member of REMADE
  - Example: Produce 500lbs of material for pilot test

**Suppliers**
- Provide a service or material required to execute the task
- Do not have to be a member of REMADE
  - Example: Provide 500lbs of material for $2K
Use the following naming conventions in the subject line of the e-mail

“Full_Tech-REMADE-19-01-<Lead Organization>-Proposal Title”
“Exploratory-REMADE-19-01-<Lead Organization>-Proposal Title”
“EWD-REMADE-19-01-<Lead Organization>-Proposal Title”

• Proposals should be submitted electronically to: REMADE@remadeinstitute.org
• Each proposal team must submit its exploratory proposal and Cost Volume (using the EERE 335 Budget Justification Excel Template)
• All parties involved with the project must fill out an EERE 335
• Proposals due no later than Anticipated Mid-December
• Late proposals will not be reviewed.
• Proposal submitters will receive an email confirmation that their proposal was received.

The Institute strongly encourages teaming between companies, national laboratories, and universities
The Institute strongly encourages teaming between companies, national laboratories, and universities
<table>
<thead>
<tr>
<th>Score</th>
<th>Evaluation Criteria – Technical Merit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Excellent (E)</strong></td>
<td>The project is well aligned to the RFP topic and addresses the REMADE material class(es) listed in the RFP. The project identifies the technical and economic barriers that must be overcome and translates these into the underlying knowledge gaps that must be addressed. Compared to existing or competing solutions, the proposed solution incorporates technology innovations that have the potential to significantly reduce the barriers limiting greater recovery, recycling, reuse, or remanufacturing. The project goals, objectives, and deliverables are clearly defined. The anticipated Future State (Project Goal) for each KPI the proposed solution will address has been quantified, and it exceeds the requirements identified by industry. The anticipated material efficiency, embodied energy, emissions, and cost benefits the project is expected to deliver have been quantified, and they will significantly contribute toward achieving the Institute TPMs.</td>
</tr>
<tr>
<td><strong>Good (G)</strong></td>
<td>The project is aligned to the RFP topic. The majority of project workscope lies within the scope of REMADE and addresses the REMADE material class(es) listed in the RFP. Project addresses at least one major technical and economic barrier/knowledge gap. Proposed solution shows some innovation when compared with existing/ competing solutions. Project goals, objectives, deliverables are defined and have the potential to deliver derivative value to other projects with similar scope. The anticipated Future State (Project Goal) for each KPI the proposed solution will address has been quantified, but not every KPI may meet the requirements identified by industry. The project will deliver modest impact relative to the material efficiency, embodied energy, emissions, and cost benefits as defined by the TPMs.</td>
</tr>
<tr>
<td><strong>Poor (P)</strong></td>
<td>The project is poorly aligned with the RFP topic. The proposed workscope is inconsistent with the RFP requirements and/or does not address REMADE material class(es). The technical and economic barriers and the associated knowledge gaps listed in the proposal are not consistent with the RFP topic or project goals. The proposed solution is not novel, and/or it replicates existing solutions that are commercially available. The anticipated Future State (Project Goal) for each KPI the proposed solution addresses has not been quantified. The proposers have either failed to quantify the impact of the project relative to the REMADE TPMs, or the project will deliver little to no impact against the REMADE TPMs.</td>
</tr>
</tbody>
</table>
## Anticipated Dates for this Request for Proposals

<table>
<thead>
<tr>
<th>Proposal Review Stage</th>
<th>Key Dates (tentative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Project Call Information Session</td>
<td>October 7, 2019</td>
</tr>
<tr>
<td>Request for Proposals Released</td>
<td>Early October 2019</td>
</tr>
<tr>
<td>Letters of Intent and 1-page Project Summaries Due</td>
<td>Late October 2019</td>
</tr>
<tr>
<td>Feedback Provided to the Proposal Teams</td>
<td>Early November 2019</td>
</tr>
<tr>
<td>Exploratory Proposals and Full Proposals Due</td>
<td>Mid-December 2019</td>
</tr>
<tr>
<td>Projects recommended for funding submitted to DOE-AMO</td>
<td>Early January 2020</td>
</tr>
<tr>
<td>Proposal Teams Notified of Decision</td>
<td>January 2020</td>
</tr>
<tr>
<td>Anticipated Project Start Date</td>
<td>July 2020</td>
</tr>
</tbody>
</table>
REMADE Membership

• Organizations participating in Project Call proposals **MUST** be a member of REMADE by proposal due date

• Membership categories: Industry, Academic, Affiliate, and National Labs

• **Membership Inquiry Form** can be obtained via the REMADE website

• Provides overview of the different membership options and corresponding benefits/costs

• For membership questions or more information, please contact:
  • Kevin Kelley, Director of Sustainability & Business Development
    ([kkelley@remadeinstitute.org](mailto:kkelley@remadeinstitute.org) or 585.213.1033)
Relationship between DOE, REMADE, and Sub-award Recipients

Why are institute awards cooperative agreements?
• Due to their size, significant amount of funding, and public visibility

Which parties are involved in my award agreement?
• Technical projects selected will not result in any agreements directly between AMO and the project team members
• Technical Project Agreements will be executed between project team members and REMADE (SMIA)
• Funded Projects will be incorporated into the REMADE award with DOE as individual sub-awards

What Terms & Conditions apply for new project agreements?
• All Terms and Conditions that apply to REMADE in the SMIA award with DOE will flow down and also be incorporated into each new individual project agreement.
• REMADE Award Terms and Conditions include requirements for: Statement of Project Objectives, milestones and Go-No/Go decision points, project budget and cost share provisions, NEPA clearance, project review meetings, deliverables and written reports, among other things.

What else can you tell me about the award negotiation process and expectations/requirements?
• A conference call will be set up after selection of projects to go over in more detail the award negotiation process and expectation/requirements.

* Substantial involvement by DOE AMO in the management, control, direction or re-direction and performance of institute activities (provisions outlined in Term 7 of cooperative agreement)
Questions and Answers