



Institute for **ADVANCED** Composites  
Manufacturing **INNOVATION**

**Request for Proposals**  
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Version 4.0

IACMI is part of the National Network for Manufacturing Innovation supported by the  
Department of Energy  
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Other Public and Private Partners

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## REQUEST FOR PROPOSALS V.4

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### 1 INTRODUCTION

The Institute for Advanced Composites Manufacturing Innovation (IACMI) is the fifth Institute in the National Network of Manufacturing Innovation, and is supported by the US Department of Energy's Advanced Manufacturing Office (AMO) and the investments of industrial, state, university, and other partners. The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) and AMO issued a Funding Opportunity Announcement (FOA) to create Clean Energy Manufacturing Institute (CEMI) for Composite Materials and Structures (DE-FOA-0000977). The "focus of the institute is low-cost, energy efficient manufacturing and recycling of fiber reinforced polymer composites targeting continuous or discontinuous, primarily carbon and glass fiber composites with thermoset or thermoplastic resin materials due to their superior strength and stiffness to weight ratios relative to other materials and subsequent applicability to clean energy and industrial applications with potential impact to national energy goals. These types of composites are foundational technologies that are broadly applicable and pervasive in multiple industries and markets with potentially transformational and economic impact." (FOA, p. 2). The "focus on innovative composites manufacturing approaches to meet cost and production targets that lower the energy consumption, greenhouse gas emissions and address end-of-life issues [that] will accelerate realization of life cycle energy efficiency target fiber reinforced polymer composite applications" (FOA, p. 12) in vehicles, compressed gas storage and wind turbines.

#### 1.1 IACMI 5 Year Technical Goals

IACMI will award and coordinate deployment of projects to support their technical goals. **IACMI funds (funds that IACMI will contribute toward a project) will generally be provided only to directly support the efforts of the IACMI Technology Area Facilities as they contribute to Projects.** IACMI Technology Area Facilities include Michigan State University, National Renewable Energy Laboratory, Oak Ridge National Laboratory, University of Dayton Research Institute, Colorado School of Mines, University of Kentucky, University of Tennessee at Knoxville, Purdue University, and Vanderbilt University.

The five-year technical goals for IACMI are as follows (dates are from June 2015 start):

- Reduce production cost of CF composites >25% in 5 years on path to >50% in 10 years.
- Demonstrate production of FRP composites with performance of CFRP with cost and embodied energy parity to today's GFRP in 5 years.
- Demonstrate technologies that reduce embodied energy and GHG emissions of CF by 50% on path to 75% reduction in 10 years.
- Demonstrate technologies for >80% recyclability or reuse of FRP composites in 5 years on a path to >95% in 10 years.

## 2 PROPOSAL CALL

IACMI is a public-private partnership committed to increasing domestic production capacity, growing manufacturing and creating jobs across the U.S. composites industry. The innovative composites manufacturing approaches developed by IACMI partners will help industry meet cost and production targets that not only lower energy consumption and greenhouse gas emissions, but accelerate realization of life cycle energy efficiency targets for fibers-reinforced polymer composite applications in areas such as vehicles, compressed gas storage (CGS) and wind turbines. IACMI will consider projects that target other markets related to clean energy or with energy productivity benefits, especially if the project involves enabling technologies such as recycling, modeling and simulation, etc. where deployment could benefit other clean energy markets as well.

A primary objective of IACMI is to research and accelerate advancement of composites manufacturing technology by the private sector, applying research to manufacturing challenges. IACMI will accomplish this by awarding and coordinating the development of technical projects to support these goals. Projects will be led by IACMI's industrial members and will include the participation of one or more IACMI core partners within the five Technology Areas (i.e., Vehicles, Wind, CGS, Composite Materials and Process, and Design, Modeling and Simulation).

### 2.1 Request for Proposal

This Request for Proposal (RFP) is the document that will be used by IACMI to communicate information concerning the solicitation, review, and awarding of projects. This RFP will serve as an open call document, meaning that project ideas can be submitted to IACMI at any time. There is no limitation on the number of proposals an applicant can submit if each describes a unique, scientifically distinct project. The most recent version of the RFP will be available on the IACMI website (<http://iacmi.org/projects>) for public view. IACMI reserves the option to amend and modify this RFP as appropriate and necessary. Updates will be communicated to the membership via the IACMI website.

The Institute and its members have worked together to develop a Technology Roadmap to identify themes and topics that are of specific importance in the development of composite manufacturing solutions necessary to achieve IACMI's goals. The final Technology Roadmap can be found at <http://iacmi.org/technology-roadmapping>. The IACMI Roadmap will be reviewed periodically and missing topics or emerging technologies could be identified. Project calls for these topics can be issued either individually or as an addendum to this RFP. They will be issued on an as needed basis as being largely underrepresented in the current project portfolio or as emerging technologies that need attention. Project calls for these defined "Areas of Interest" call will last for 8 weeks during which time IACMI members can submit project ideas via the process defined in Section 6 of this document.

### **3 PROJECT ELIGIBILITY**

#### **3.1 IACMI Membership**

All project partners signing the Project Agreement (PA) must become IACMI members by executing the Membership Agreement by the time the PA is sent out for review.

The application for IACMI membership can be found on the IACMI website at <http://iacmi.org/membership/apply-for-iacmi-membership/>. Upon approval of the application, the potential member will be sent a membership agreement to sign.

#### **3.2 Master Sub Award (MSA)**

A Master Sub Award (MSA) document is required to be executed between each project participant and CCS Corporation for an organization to participate on an IACMI project. The MSA is the contract between the member organization and CCS Corporation (IACMI) that is made up of the basic terms and conditions for all projects. It includes (as embedded files) a Non-Disclosure Agreement, the flow-down IP provisions from the Prime Cooperative Agreement and the IP Management Plan, and the flow-down terms and conditions from the Prime Cooperative Agreement.

#### **3.3 Foreign Entity**

If a foreign entity is approved for membership, they are eligible to participate as a project team member on a project. If any project work will be done in a foreign country IACMI will work with the project team to complete a Foreign Work Waiver (FWW) that will be submitted to DOE. The project team will also need DOE approval for any foreign travel that will be conducted as part of the project no less than 30 days in advance of the travel. Additionally, if Intellectual Property (IP) is expected to be generated, an Advanced Waiver for Patent Rights may need to be completed and submitted to DOE for review.

## 4 IACMI FUNDING MODEL

IACMI's operational model is based on cost-shared scientific research linked to specific opportunities that engage members in the creation of scientific knowledge that will help them solve problems that also align with IACMI energy, economic and environmental goals. Funding toward a project is made up of a combination of IACMI Funds, Industry cash cost share and/or Industry in-kind cost share. Each component is described below and shown graphically in Appendix E.

### 4.1 IACMI Funds

Each project will have participants that include one or more of IACMI's core technology area partner facilities as described in Section 1.1. The sum of the core technology area partners' contribution to a project will be covered by industry cash provided and IACMI funds.

**“IACMI funds” refers to the funding that IACMI will commit to a project to support contributions made by core partner technology area facilities. For every \$1 of IACMI funds that are provided to a project, the minimum matching cost share for industry is \$1 (cash plus in-kind). This results in a minimum of a 1:1 commitment to the project between Industry funds and IACMI funds.**

Projects that have Industry cost share to IACMI funds ratio that is greater than 1:1 will be favored over otherwise similar projects that only meet minimum cost share requirements. This additional cost share represents a stronger level of commitment from participants and helps IACMI to meet its overall cost share commitment to DOE. Project teams may not use the same cost share contributions to meet requirements for more than one project. Additionally, any cost share contributions must be specified in each project team members' budget, verifiable from records, and reasonable for efficient accomplishment of the project.

### 4.2 Industry Cash Cost Share

The required ratio of industry cash to industry in-kind that is needed on a project varies by project type (Section 5) and the size of the industrial member that is serving as the project lead.

The industrial cash cost share provided toward a project will be strictly cash, in the form of actual dollars to IACMI. Cash cost share contributions can be provided by any or all members of the project team. For Charter and Premium members of IACMI participating on a project, the cash component of their member fees as described in their Membership Agreement may be applied to meet project cash cost share requirements.

**Industrial cash provided toward a project is allocated to the IACMI core partners that are performing work on that project based on their level of effort.**

### 4.3 Industrial In-Kind Cost Share

Industrial members may also provide in-kind cost share toward their projects. Allowable in-kind contributions will be documented with the project partners in their formal budgets for each project. The IACMI Finance Coordinator will help each partner to appropriately capture any in-kind cost share. Additional in-kind cost share may be granted on a case-by-case basis by the IACMI Finance Coordinator in conjunction with DOE requirements.

## 5 PROJECT TYPES SUMMARY

IACMI’s research and development (R&D) portfolio resulting from the open proposal call in alignment with the IACMI Roadmap, consists of different project types as defined generally by the amount of IACMI funds supporting the project as well as the overall duration of the project. Each project must be completed by the end of the Institute’s award period, regardless of the project type. Projects are reviewed for the potential for the project to have commercial and economic impact, whether they provide a new or innovative solution to a problem, and the extent of new scientific knowledge that the project team expects to gain at the end of the project. All projects must comply with the IACMI U.S. Manufacturing Plan.

The categories of projects that IACMI offers to members are contained in Table 1 and discussed further in the following sections. Table 1 provides a summary of each project type and requirements on proposal documentation, review, and submission for is described in Section 6.

**Table 1. Project Types and Summary of Characteristics**

Project Type	IACMI Funds (in thousands)	Cost Share Requirement (IACMI Funds: Industry)	Duration
Enterprise	≥\$600	Minimum 1:1 (50% Industry contribution is cash)	Up to 3 years
Technical Collaborations	< \$600	Minimum 1:1 (Large Industrial Entity Leads: 50% of contribution is cash)	Up to 2 years
Topic-Specific	NA	Minimum 1:1	Up to 1 year

### 5.1 Enterprise Projects

An Enterprise Project is one that has significant commercialization potential such as support from an Original Equipment Manufacturer (OEM) or by a large Tier 1 supplier. These projects have a strong focus in one or more of the five IACMI Technology Areas and will target composite material and manufacturing process development and validation for clean energy applications. A small number of value-chain members can jointly submit a proposal and the proposals must involve team collaboration, integration of multiple shared R&D facilities and have potential large economic and commercial impact while providing a platform for the growth of scientific knowledge by the project team. It is required that part of the project work will be executed at IACMI facilities by IACMI core partners participating on the project.

Enterprise Projects will support work to create new knowledge or solve problems for industrial members of the Institute. The projects must directly address commercialization opportunities for the IACMI industrial members and must demonstrate a strong connection to the IACMI technology roadmap.

Enterprise projects can span up to 3 years with an investment of greater than or equal to \$600k IACMI funds. There will be a requirement of a 1:1 ratio of IACMI funds to industry cost share.

Additionally, 50% of the total industrial cost share for an Enterprise project must be in the form of cash. The required industry cash cost share may come from multiple project partners or from a single project partner.

## 5.2 Technical Collaboration Projects

Technical Collaboration (TC) Projects are efforts designed to enable collaboration among industrial members. These projects help to develop concepts that may require some level of testing or validation and can result in new and innovative scientific knowledge.

It is required that part of the project work will be executed at IACMI facilities by IACMI core partners participating on the project. Technical Collaboration Projects will have a strong focus in one of the five IACMI Technology Areas and will align to the IACMI Technology Roadmap. Technical Collaboration projects will target composite material and manufacturing process development and validation for clean energy applications. These projects should have a focus on the development of broadly applicable scientific knowledge and/or technology that may be useful to all IACMI members. Additionally, TC Projects can serve to solve problems for industry or to develop technology improvements to equipment, processes or software that might be deployed within the facilities of the IACMI core partners in support of the IACMI mission.

Technical Collaboration projects can be executed by an individual industrial partner or through a small team (1-4) of industrial partners, but every project team will contain at least one IACMI core partner. Technical Collaboration projects can span up to 2 years with an investment of less than \$600k IACMI funds. There will be a requirement of a 1:1 ratio of IACMI funds to Industry cost share.

Projects led by large entities (> 500 employees) serving as the project lead in TC Projects will be required to provide 50% of their 1:1 matching cost share in the form of cash. The required industry cash cost share may come from multiple project partners or from a single project partner. Small and Medium Enterprise (SME) organizations leading projects must also provide a 1:1 cost share match (IACMI funds to industry cost share) but there is no cash requirement associated with that match.

## 5.3 Topic-Specific Projects

Topic-Specific Projects address IACMI issued, topics of interest regarding industry-wide technical challenges or opportunities explicitly identified in IACMI's technology roadmap, these projects will range in total cost and are targeted to be less than 1 year of effort. Topic Specific Projects will be focused on identified gaps in the Technology Roadmap, develop cross cutting broadly applicable technology that may be useful to all members, or develop technology improvements to equipment, processes or software that might be deployed within the IACMI core partner facilities to support the achievement of IACMI mission. Institute projects will target composite material and manufacturing process development and validation for clean energy applications, supporting technologies for automotive, wind and compressed gas storage such as design tools, modeling, and simulation software. Topic Specific projects may be a single entity or a small team of sub-recipients. Cash cost share may be required to support IACMI M&O as defined in the RFP.

## 6 PROPOSAL DOCUMENTATION & SUBMISSION

Project teams will work with the IACMI HQ staff and the IACMI Technology Area Directors (TADs) to put necessary documentation together for project review and contracting. The basic flow of documentation begins with an Idea Paper generated by the lead proposing institution. If an idea paper is approved on its technical merit it will be approved to go forward with the development of an IACMI Project Agreement (PA).

Additionally, any project team members who are not IACMI members will be required to finalize IACMI membership prior to the initiating the review of the developed Project Agreement. Once the PA is developed and approved through the IACMI review process the project team will be expected to resolve or address review comments prior to signing the project agreement.

More specific information on the purpose and requirements of these documents can be found in the following sections of the document.

### 6.1 Idea Paper

Each project team will create a short document that summarizes the high-level information in the project and serves as a “concept paper”. This document submitted by the lead organization (Proposed Project Lead) will be known as an **Idea Paper**. This document will contain a brief project description containing the relevant technical information needed to be able to determine alignment with IACMI’s technical objectives and to determine originality of the project idea. The Idea Paper will also include information such as the project team participants (including all IACMI core partners), a rough budget (high-level) and schedule, and how it aligns with the IACMI Roadmap.

The general direction is to submit the Idea Paper for review to a IACMI Technology Area Director (TAD) that is on the project team, but it can also be submitted directly to other IACMI staff with whom the team has been working. If the Idea Paper needs more refinement or information, the Project Lead will be notified so that there is an opportunity to revise prior to being reviewed.

The review of the Idea Paper will take place during internal IACMI project meetings every other week. IACMI leadership, DOE representation, and the Federal Technology Advisory Board (TAB) members will be invited to review the Idea Papers during these meetings.

Once the Idea Paper is reviewed, the project team will be notified of the result. If the Idea Paper is approved, the project team will be notified to develop their Project Agreement (PA) and will be notified of any comments that arose from the review that should be considered as they develop their PA. If an Idea Paper is not approved, the project team can evaluate the feedback to see if they would like to revise their project idea or can choose to not pursue the project any further.

A template of the Idea Paper can be found in Appendix A and is on the IACMI website at <https://iacmi.org/projects>.

## 6.2 Project Agreement

A **Project Agreement (PA)** is the contract between the partners on the project to do the proposed work and is required for every project. The PA will also contain information that is needed for the DOE’s review and approval of the project. Once an Idea Paper has been approved, IACMI staff will schedule an orientation with the project team to discuss the elements of the Project Agreement and to answer any questions on the format and components.

The PA contains cover pages that include the project title, project participants, requested recusal of reviewers that present a COI, a budget summary, and a space for project team participant signatures. Once the PA has been assembled by the project team, it will be submitted to IACMI for review. IACMI will check it to make sure it contains the appropriate information and if it is deemed compliant. If the PA does not contain the appropriate information, IACMI will work with the project team to update the information accordingly prior to beginning the review process.

The Project Agreement will be reviewed by IACMI staff and DOE. If the project is an Enterprise project, it will also be reviewed by the IACMI Board of Directors. Once the PA is deemed complete and DOE has no further comments to address, it will be sent to the project team participants for signature. The completion of all signatures on the PA in conjunction with DOE’s formal approval of the project will mark the official execution of the project.

A template of the Project Agreement along with the information that is required in the Project Agreement can be found in Appendix B and is on the IACMI website at <https://iacmi.org/projects>.

## 7 PROJECT DEVELOPMENT PROCESS

The general process for the development of a project is shown below in Figure 1 and described below.

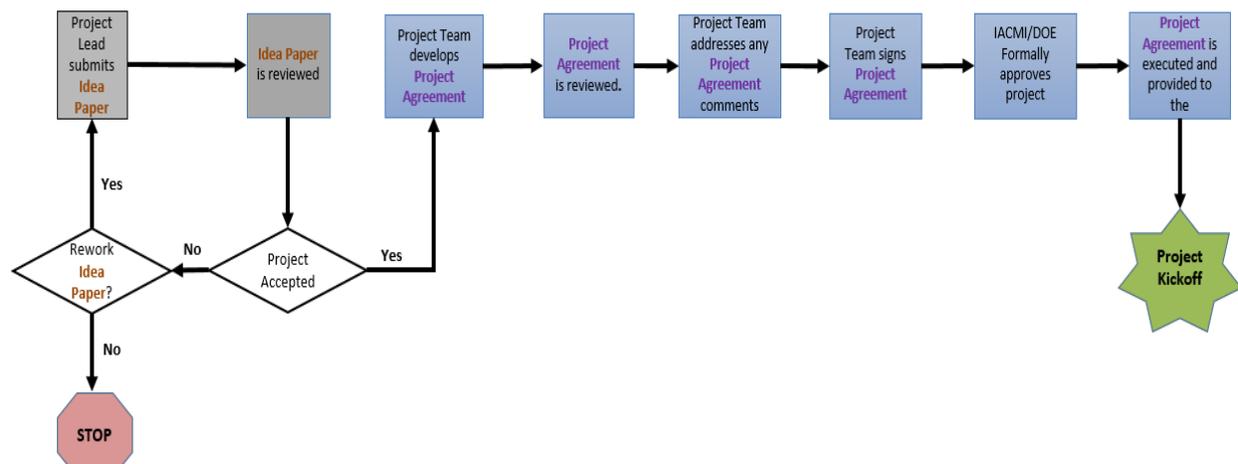


Figure 1. Project Development process

- 1) The Project Team generates the **Idea Paper** and submits to IACMI.

*(The general direction is to submit the Idea Paper to a IACMI Technology Area Director (TAD) that is on the project team, but it can also be submitted directly to other IACMI staff with whom the team has been working.)*

- 2) The **Idea Paper** is reviewed.

*(The Idea Paper is reviewed by IACMI staff, DOE, and the Federal TAB Members.)*

- a. Approved—Project team will be notified and will move to Project Agreement Development (*Go to #3*)
- b. Rework/Revise—Project team will be notified of addition information needed or comments that need addressed. (*Go back to #1*)
- c. Decline—Project team will be notified that the idea will not go forward.

- 3) The Project Team develops the **Project Agreement**.

*(See Appendix B for template and general instructions. IACMI HQ staff will set up a quick orientation with the Project Team to discuss the template and answer any questions.)*

- 4) The **Project Agreement** is reviewed.

*(The Project Agreement is reviewed by IACMI staff and DOE (see Appendix C for review criteria). If the project is an Enterprise project, it will also be reviewed by the IACMI BOD. The Project Team will be given all comments and will need to address comments or make edits necessary to satisfy the reviewers.)*

- 5) **Project Agreement** is sent to the Project Team to sign.

*(This happens in parallel to DOE incorporating the project into the Cooperative Agreement they have with IACMI.)*

- 6) Once the Project Team has signed the **Project Agreement** and DOE has finalized the addition of the project to IACMI's Cooperative Agreement, the Project Agreement will be signed by the IACMI CEO and the University of Tennessee.

*(The executed (fully-signed) Project Agreement will be provided to the project team as a record that the project has been fully approved.)*

- 7) IACMI staff will schedule a kick off meeting with the Project Team and the project will commence.

## 8 PROJECT DEVELOPMENT TIMELINE

IACMI has implemented a timeline for project submittals in Budget Period 4 (April 2018 through March 2019). This will enable project teams to better plan for Idea Paper submittals, the development of project information (such as the Statement of Project Objectives (SOPO) and budgets), and final approval for project start.

As discussed in Section 6, Idea Papers are submitted to IACMI for review as part of a bi-monthly review cycle. If the Idea Paper is approved the submission of the draft and final Project Agreement is due by the dates listed below. The anticipated project start dates takes into consideration time for all partners to complete membership agreements, execute master sub-agreements (MSAs), receive final approval by DOE, and procure Project Agreement signatures by all parties.

Project Agreements that are not submitted by the draft and final deadlines may not be approved for start until the next approval cycle.

These Project Cycle deadlines include review time by DOE and IACMI and will help project teams plan for the time needed to get final and approved documentation, as well as help the IACMI leadership manage overall project portfolio for the remainder of the IACMI award.

### 2018 Project Cycle 1 Timing

Last day for Idea Paper Submittal for Consideration in this Project Cycle	3/16/2018
Draft Project Agreement (SOPO and Budgets) Due to CCS	4/11/2018
Final Project Agreement (SOPO and Budgets) Due to CCS	5/1/2018
Anticipated Project Approval to Start	6/26/2018

### 2018 Project Cycle 2 Timing

Last day for Idea Paper Submittal for Consideration in this Project Cycle	7/20/2018
Draft Project Agreement (SOPO and Budgets) Due to CCS	8/31/2018
Final Project Agreement (SOPO and Budgets) Due to CCS	9/21/2018
Anticipated Project Approval to Start	11/16/2018

### 2018 Project Cycle 3 Timing

Last day for Idea Paper Submittal for Consideration in this Project Cycle	11/9/2018
Draft Project Agreement (SOPO and Budgets) Due to CCS	12/31/2018
Final Project Agreement (SOPO and Budgets) Due to CCS	1/18/2019
Anticipated Project Approval to Start	3/29/2019

## 9 PROPRIETARY AND CONFIDENTIAL INFORMATION

The IACMI Intellectual Property Management Plan (IPMP) covers the IP terms for all project types (Enterprise, Topic-Specific and Technical Collaboration Projects) and is included in the Master Sub Award (MSA) that all project participants are required to execute before a project can begin.

IACMI will protect proprietary information and shall not use such proprietary information for purposes other than evaluation of a proposal and subsequent project administration. For an Enterprise project that necessitates a BOD review, project participants can request the recusal of any BOD reviewer of their Project Agreement that they feel pose a potential Conflict of Interest (COI).

## 10 PROJECT EXECUTION AND COMMUNICATION

### 10.1 Project Kickoff

Upon execution of the Project Agreement, a kickoff meeting will be scheduled for the project. The project team participants, IACMI HQ project team, and DOE will be invited to the project kickoff meeting. In addition to discussing the project itself, project reporting expectations will also be a focus of the kickoff meeting.

While all project budgets require DOE approval prior to the start of work, there are some project costs which require specific prior approvals before costs can be reimbursed or used as cost share towards the project. Please refer to 2 CFR 200.407 “Prior written approval (prior approval)” for all requirements around prior approvals. A few common prior approvals that are required for project costs (including cost share) are listed below for your reference:

- All costs associated with foreign travel
- All costs associated with work performed outside of the United States
- All Equipment purchases

### 10.2 Project Reporting

During the period of performance of the project, the Project Team Lead will coordinate (**at a minimum**) monthly project team meetings. The project team participants, IACMI HQ project team, and DOE will be invited to the monthly project team meetings. The project team will submit monthly progress reports to the IACMI Project Controls Manager by the end of the 3rd week after each month’s end. These reports will highlight information such as project accomplishments, milestone progress, current budget versus actual spending, assessment of any identified risks, and plans for the next month. **If a project team falls more than 3 months behind in reporting, IACMI leadership will meet to decide whether to put the project on hold until it comes into compliance.**

Additionally, project teams will be required to submit a PowerPoint slide to the IACMI Project Controls Manager each quarter that contains non-confidential project information such as

achievements, impact, work details, and next steps along with pictures/graphs as appropriate. This slide will be due the 3<sup>rd</sup> Friday following the end of each quarter.

As mentioned in the previous section, there are costs that need to be reported to DOE prior to being incurred in order to obtain approval for those expenditures. This includes any foreign travel, work outside the United States (U.S.), or equipment purchases. If any of these may apply to the project, notify the IACMI Finance Manager when developing the budgets.

Reporting requirements during the project:

- Monthly progress reports
- Monthly Invoices
- Monthly Cost Share forms
- Quarterly slide containing non-confidential project accomplishments/next steps
- Notification of any foreign travel, work outside the U.S., or equipment purchases

### **10.3 Project Completion and Final Report**

After the period of performance of the project, the project team will be required to submit a final report to IACMI within 30 days of the end of the project. This report should contain information that can be shared publicly and as such the project team will be advised to not include proprietary information. The final report will also be submitted to DOE for their review and uploaded to the OSTI website by CCS.

Additionally, all invoices and cost share forms associated with a project are required to be received by IACMI no later than 90 days after the projects ends (i.e., the final period of performance date as defined in the project agreement document).

**APPENDIX A—IDEA PAPER TEMPLATE**

*It is strongly recommended for project teams to work with the Lead IACMI Technology Area Director (TAD) to formulate a project idea. The Lead IACMI TAD will submit this Idea Paper, along with their qualification of the project, to the IACMI Project Director and the IACMI Project Controls Manager to initiate the review process.*

**Date:**

**Project Title:**

**Project Partner Lead Organization:**

POC Name:

E-mail:

Phone:

**Lead IACMI Technology Area:**

POC Name:

E-mail:

Phone:

**Additional Industrial Project Partners:**

**Additional IACMI Core partners:**

**Project Summary (2-3 paragraphs):**

Provide a short summary of the project (i.e., problem to be solved, need for a solution, market opportunity that solving this will create).

**Please answer the following questions (1-2 pages total):**

Which IACMI goals does this project idea support (cost, energy, recycling, new materials)? And how does this project idea contribute to the IACMI goals as described in the RFP? (i.e. *What is the project trying to achieve?*)

What is the specific scientific/technical challenge limiting the idea from working now (i.e., What is the problem—why can't we do it today)?

What is the technical approach to solve the challenge (i.e., How are we going to overcome or fix the problem identified)?

What is new or innovative about this project idea (i.e., How is it different than what has been done before)?

**Expected Duration (months)\*:**

**Rough Order Magnitude Budget Summary (this is not a formal budget)\*:**

Industry in-kind:

Industry cash:

IACMI (state/federal):

Total:

**Review of Idea Paper will include IACMI Senior Leadership Team and the Federal Advisors of the Technology Advisory Board. If an industrial TAB member has expertise that could of benefit, they may be asked to review the Idea Paper.**

The industrial TAB members are listed at the following link: <https://iacmi.org/technical-advisory-board/>.

**If the Project Lead feels that any represent a potential Conflict of Interest, please list them here so that they may be recused:**

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**APPENDIX B—PROJECT AGREEMENT TEMPLATE**

Master Research SUBAWARD  
 SUBAWARD #: A16-0349-SXXX  
**PROJECT AGREEMENT #: PA16-0349-X.X-01**

The Project contemplated by this PROJECT AGREEMENT is of mutual interest and benefit to the Parties and will further the research objectives of the PROJECT PARTNERS, IACMI and CCS CORP.

Upon execution by the parties below, the Project specified will be awarded and performed in accordance with the Master Research SUBAWARD (“Master SUBAWARD”) # A16-0349-SXXX, [#XXXX-XXX, etc. as needed] which is incorporated herein by reference and was executed among CCS CORP., UNIVERSITY and each SUBRECIPIENT. The project specifications shall include the following:

1. Project Title: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
2. PROJECT PARTNERS (lead PROJECT PARTNER indicated in **bold**): \_\_\_\_\_
3. PROJECT PARTNER PI(s) (lead PI indicated in **bold**): \_\_\_\_\_
4. PROJECT AGREEMENT Period of Performance:  
 Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_
5. Funding
  - Federal funding for this ACTION \$ \_\_\_\_\_
  - Amount from previous actions \$ \_\_\_\_\_
  - Total federal funding for this PA to date \$ \_\_\_\_\_
6. Cost Sharing
  - Cost sharing for this ACTION \$ \_\_\_\_\_
  - Cost sharing from previous actions \$ \_\_\_\_\_
  - Total Amount of cost sharing for this PA to date \$ \_\_\_\_\_
7. Total Project Cost
  - Project Cost \$ \_\_\_\_\_
  - Amount from previous actions \$ \_\_\_\_\_
  - Total project cost to date \$ \_\_\_\_\_
  - Disbursement of federal funds pursuant to cost share commitments will require proof that PROJECT PARTNERS have expended their portion of such cost share commitment.

8. Invoicing and Cost Share Reporting Frequency: Invoices and cost share reports shall be submitted monthly. In the event any invoice or cost share report is not submitted within forty-five (45) days of the close of the applicable month, CCS CORP. may, in its sole discretion, issue a stop work order halting all performance of work under this PROJECT AGREEMENT. Final invoices must be received no later than forty-five (45) days following the End Date (as defined in line 4 above) of this PROJECT AGREEMENT. Any obligation to pay or reimburse any final invoice received later than forty-five (45) days following the End Date shall become void upon receipt of written notice provided by either CCS CORP. or UNIVERSITY to the applicable PROJECT PARTNER.

Cash Cost share commitments will be spent on a one to one (1:1) ratio of IACMI funds to industry cash cost share.

9. Technical Reporting Requirements: Monthly reporting required for Project Partners on progress of the project to include updates on accomplishments, milestone completion, schedule tracking, etc. A final close-out meeting will be scheduled at the completion to summarize the project with a draft of the final project report provided to IACMI within 30 days after the project concludes. The final publishable project report will be submitted to IACMI with all changes incorporated no later than 90 days after the project concludes (template to be provided to project team lead by IACMI).

10. Required Documents:

- Attachment (1): Statement of Work w/ Milestones (REQUIRED)
- Attachment (2): Detailed Budget Forms (REQUIRED-- each individual Project Partner)
- Attachment (3): Background Intellectual Property (Not Required—As Needed)
- Attachment (4): Use of Facilities (REQUIRED)
- Attachment (5): New Equipment Purchase (REQUIRED)
- Attachment (6): Commercialization Plan (REQUIRED)
- Attachment (7): Alternative IP Arrangement (Not Required—As Needed)
- Attachment (8): Conflict of Interest Certification (REQUIRED—Completion via PA Signature)

11. Restrictions on Confidential Information (if applicable)

The Parties agree to restrict the sharing of Information (as defined by, and in accordance with, the Non-Disclosure Agreement contained in Exhibit 04 of the Master SUBAWARD) under the scope of this Project Agreement to the Partners, with any exceptions, as follows:

[Project specific restrictions]

12. Equipment

No Equipment, as defined under 2 CFR § 200.33 and incorporated by reference in the Master SUBAWARD, may be purchased for use under, and/or be considered “cost share” for, this PROJECT AGREEMENT or the Master SUBAWARD by a PROJECT PARTNER without prior written approval from CCS CORP. Notwithstanding the foregoing, CCS CORP. may retroactively approve any Equipment purchased for cost share purposes. However, under no circumstances shall approval by CCS CORP of Equipment for cost share purposes be considered approval for any other purpose. For purposes of this PROJECT AGREEMENT, written approval includes fax, electronic mail, or other electronic means. CCS CORP. may withhold approval under this paragraph in its sole discretion.

13. Foreign Travel

No employee, contractor, or other agent of a PARTY hereto may travel outside the United States of America (including its commonwealths, territories, and possessions) (“Foreign Travel”) for work, services or other activities contemplated hereunder without prior written approval from CCS CORP. CCS CORP. may withhold approval of Foreign Travel in its sole discretion.

The PARTIES agree to be bound by the terms and conditions of this PROJECT AGREEMENT as indicated by their signatures below. This PROJECT AGREEMENT may be signed in two or more counterparts, each of which shall be deemed an original, and all of which taken together shall be deemed one and the same instrument.

**CCS CORP.**

**PROJECT PARTNER 1**

By \_\_\_\_\_

By \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**UNIVERSITY**

**PROJECT PARTNER N**

By \_\_\_\_\_

By \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**Attachment 1  
STATEMENT OF WORK w/ MILESTONES**

**Project Summary:**

In this section, please give an overview of the project. Essentially it should describe the challenge that is to be addressed, the approach that will be taken, and the expected impact. This section should be between 1/2 page to 1 page in length and should strive to answer the following:

- *The goal of this Project is to...*
- *Fundamentally what don't you know now about the process or materials that you expect to learn from a technical perspective?*
- *What new knowledge at a scientific/technical level will we gain from this work?*

**Subtask X.1: Project Management *(Do Not Edit This Section)***

**Task Summary**

This task will provide for the tracking of the project outcomes with respect to the stated deliverables, milestones and go/no-go decision points. Furthermore, this task will provide the required financial and schedule reporting to Recipient and to DOE to ensure compliance with the project objectives and the goals of the Institute and the FOA.

**Subtask X.2: Title of Project Work Task *(Repeat for each Work Task---Subtask X.3, Subtask X.4, etc.)***

<b>Supports IACMI Technical Goal: <i>(Choose 1 or more—delete others)</i></b>
<p>(1) <b>Reduced Production Cost of Carbon Fiber Composites and molding cycle time</b></p> <p>(2) <b>50% reduction in CFRP embodied energy</b></p> <p>(3) <b>Technologies that reduce embodied energies and GHG emissions of CF</b></p> <p>(4) <b>Increase recyclability &amp; reuse of CFRP composites</b></p>
<b>Expected Outcome: 1-2 Sentences that describe the expected outcome of this work task.</b>
<b>Unique Innovation: 1-2 Sentences on <u>new</u> information, knowledge or activities that will precipitate in this work task.</b>

**Subtask Summary**

**Provide 1-3 paragraphs describing the specific work to be performed under this work task including the issues it will address and the expected outcome of this work.**

**Milestones and Go/No-Go** (*Include in the work tasks that they support*):

**Milestone:**

**Responsible partner(s)**

**Completion (month/year)**

**Go/No-Go**

**Responsible partner(s)**

**Completion (month/year)**

***Milestone and GNG Guidance***

- *Include at the end of the appropriate work task*
- *A project should contain at least 1 Milestone per quarter and 1 Go/No-Go per year.*
- *Milestones should be specific and measurable to be able to show that they have been completed/achieved.*
- *Will identify partner(s) responsible for completion.*
- *Will identify expected completion month/year*

**Attachment 2**  
**DETAILED BUDGET FORMS**

Each project partner will submit a detailed budget information using the most current version of Department of Energy Budget Form (EERE 335) which includes the Budget Information for Non-Construction Programs (SF424A).

The EERE 335 Budget Form will be provided to the project team by IACMI upon approval to go forward with developing this Project Agreement.

**Attachment 3**  
**BACKGROUND INTELLECTUAL PROPERTY**  
 (NOT REQUIRED—As Needed)

If a project partners has any background IP that they wish to disclose, they should insert that in this attachment.

If there is no background IP disclosed, mark table as NA.

Background IP	Project Partner Owner

**Attachment 4  
NEW EQUIPMENT PURCHASE  
(REQUIRED)**

An estimate will need to be provided for any equipment valued at \$50,000 or above that is included in a project partners individual budget (Attachment 2).

Additionally, please summarize all new equipment purchases ( $\geq$  \$50,000) in the table below and identify the task(s) that the new equipment will support. If there is none, mark the table as “NA”.

<b>Equipment Description</b>	<b>Estimated Cost</b>	<b>Project Partner</b>	<b>Task Use</b>

**Attachment 5  
USE OF FACILITIES  
(REQUIRED)**

Please provide a list of facilities that will be utilized during the project, and which work tasks (Attachment 1) they will support.

Facility	Project Partner	*Existing or New?	Task Use

**Attachment 6**  
**COMMERCIALIZATION PLAN**  
**(REQUIRED)**

Please provide 2-3 paragraphs describing advancements that will be implemented and commercialized due to this project's success.

Which PARTNER(S) will make the needed investments to bring the outcomes of the project to production? How long after the project end will first revenues be generated? What are the short and long-term impacts in terms of market penetration?

**Attachment 7**  
**ALTERNATIVE IP ARRANGMENT**  
(NOT REQUIRED—As Needed)

Alternative IP terms may be negotiated by Project Partners if desired.

If there will be no alternative IP arrangements made, mark this attachment as “NA”.

**Attachment 8**  
**CONFLICT OF INTEREST CERTIFICATION**  
**(REQUIRED—Completion Via Project Agreement Signature)**

**Organizational Conflict of Interest Statement in Response to Project XXXXX**

By signing this Project Agreement, I am certifying that I am not aware of any activities at my organization that would create any actual, potential, or apparent organizational conflicts of interest relative to work to be performed under this Project # XXXXXXXX.

If an actual, potential, or apparent organizational conflict of interest does exist I certify that I have notified Collaborative Composite Solutions Corporation at the following email address, [info@iacmi.org](mailto:info@iacmi.org), and have provided all necessary documentation to CCS Corp. prior to signing this Project Agreement.

If an actual, potential, or apparent organizational conflict of interest come to my attention during the course of the project I will promptly notify Collaborative Composite Solutions Corporation at the following email address: [info@iacmi.org](mailto:info@iacmi.org). Notice of such conflict of interest shall also be sent to Collaborative Composite Solutions Corporation at the following mailing address:

Collaborative Composite Solutions Corporation  
c/o Zack R. Gardner, Assistant General Counsel  
2360 Cherahala Boulevard  
Knoxville, TN 37932

## APPENDIX C—ADDITIONAL PROJECT AGREEMENT GUIDANCE

The following provides supplemental information to help complete the attachments in the Project Agreement:

### SOW and Milestones (Attachment 1)

- **Project Summary that highlights:**
  - The proposed technology innovation and how it is unique;
  - How the proposed project creates new knowledge or solves industry’s problem;
  - The proposed commercialization approach including information such as target metrics, product or manufacturing process opportunities, commercialization deployment time line, U.S. Manufacturing, barriers to market penetration, etc.;
  - Key risks such as those that present a technical challenge or those that may interfere with commercialization.
  - Relevance to how the project supports IACMI’s clean energy mission and technical metrics, targets specified markets, and enables technologies such as composites recycling and modeling and simulation.
  - A description of any workforce development activities or benefits anticipated as a result of the project’s execution.
- **Work Tasks and Milestones**
  - Statement of work (SOW) broken down by tasks including descriptions of the work within those tasks (what the work is and the team member(s) associated with that work).
    - ✓ Project Milestones following the SMART format in Table 2. The guidance is to include 1 Milestone per quarter of the project, at a minimum. Milestones should be listed under the work task to which they correspond.
    - ✓ Project Go/No-Go’s (GNGs) following the SMART format in Table 2. The guidance is to include 1 GNG per year of the project, at a minimum. GNGs should be listed under the work task to which they correspond.

### Budget (Attachment 2)

- A breakdown of the budget for each project partner using an EERE 335 form by the IACMI Finance Coordinator (FC). The budget does not need to be considered “final” before the PA goes through the review process but should be within 10% of what the final PA will include. The IACMI Finance Director will formally approve all budgets prior to being sent to the DOE Contracting Office in Golden, Colorado.
- Any required cash cost share should be accounted for through the identified cost share that the industrial members are providing (either by one industrial project partner or through a combination of the industrial project partners).

### Supplemental (Attachments 3-8)

- Identification of any “Background” Intellectual Property (IP) that is being brought to the project by any project partner.
- A table of any proposed equipment purchases over \$50K and the task on which they will be used.
- Identification of the facilities that will be used on the project. Any existing facilities that will be used should be identified so that a NEPA determination can be made.
- Discussion (2-3 paragraphs) describing how the advancements in the project will be implemented/commercialized.
- Alternative IP Arrangements—if the team chooses to arrange IP terms different than what is covered by their Master Sub Awards.

<b>Acronym</b>	<b>Further Clarification</b>
S = Specific	Focused on a specific deliverable to avoid misinterpretation. Should include measure 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	Fits into the organization's constraints and is cost-effective.
T = Timely	Time of completion is associated with each milestone.

**Table 2. SMART Milestone Guidance**

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## APPENDIX D—PROJECT AGREEMENT EVALUATION CRITERIA

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IACMI will perform a compliance review of all documents to ensure that applicants meet eligibility requirements and that the documents contain the required information asked for in the template.

Compliant Project Agreements will be reviewed by the IACMI Technology Area Directors, the IACMI COO, CTO, and CEO, the DOE Technology Manager, and the DOE Technical Project Officer. In the case of Enterprise Projects, there will also be a review by the IACMI Board of Directors due to the larger financial commitment and longer duration. The project team lead will be informed of the outcome of each stage of the review process and will be provided with all comments that need to be addressed.

All participants in the project review and selection process will conduct their work in strict compliance with IACMI's Conflict of Interest (COI) Plan and guidance documents specifying stringent personal and organizational COI standards. Additionally, a project team on an Enterprise Project has the option to request the recusal of any BOD reviewer where they feel a COI could be present. The Project Agreement will contain a section where a project team can identify this for Enterprise Projects.

IACMI will utilize all or a subset of the following criteria to evaluate project agreements:

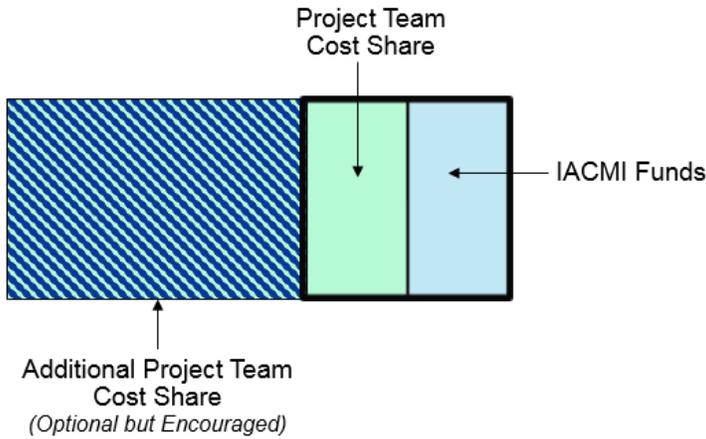
- *Technical Merit & Relevance:* The proposed technology must be technically meritorious and support IACMI's mission/goals as stated in Section 1.1
  - The proposed work is technically viable and based on sound scientific principles
  - The proposed work will create new knowledge or solve an industry problem.
  - The degree of innovation of the proposed work
- *Impact:* A proposal's impact is measured in the way a project:
  - Shows innovation in target application areas
  - R&D that results in key learnings or science that has never been done before
  - Engages Small and Medium Enterprises (SME)
  - Commercialization of concept delivers public benefit (workforce development, tools, etc.)
  - Impact to achieving IACMI's energy and environmental targets
- *Resources:* Considerations in the evaluation of the Resource criterion include:
  - A project's financial viability (adequate cost share including cash)
  - The viability of the plan to execute the work
  - Quality of the resources and capabilities of the team to execute the proposed work
  - Integration of multiple capabilities across multiple IACMI Technology Areas
- *Other Evaluation Factors:* These include:
  - Use of available IACMI funds to achieve the Institute objectives
  - Portfolio Balance including: diversification of technical, market, organizational risks, investment among target applications, etc.

**APPENDIX E—COST MODEL EXAMPLES**

**Technical Collaboration Project (SME Lead)**

*For every \$1 of IACMI Funds:*

- *\$1 Industry Cost Share*
- *Additional Industry Cost Share Encouraged*



**Enterprise Project or Technical Collaboration Project (Large Entity Lead)**

*For every \$1 of IACMI Funds:*

- *\$0.50 Industry Cash Cost Share*
- *\$0.50 Industry In-Kind Cost Share*
- *Additional Industry Cost Share Encouraged*

