

Intellectual Property Provisions (CDSB-115)
Cooperative Agreement - Special Data Statute
Research, Development, or Demonstration
Domestic Small Business

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NOTE: In reading these provisions, any reference to “contractor” shall mean “recipient,” and any reference to “contract” or “subcontract” shall mean “award” or “subaward.”

01. FAR 52.227-1 Authorization and Consent (DEC 2007) Alternate I (APR 1984)

(a) The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.

(b) The Contractor shall include the substance of this clause, including this paragraph (b), in all subcontracts that are expected to exceed the simplified acquisition threshold. However, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

(End of clause)

02. FAR 52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement (DEC 2007)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in the Contractor's possession pertaining to such claim or suit. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor shall include the substance of this clause, including this paragraph (c), in all subcontracts that are expected to exceed the simplified acquisition threshold.

(End of clause)

03. 2 CFR 910, Appendix A of Subpart D, Rights in Data - Programs Covered Under Special Data Statutes

(a) Definitions

Computer Data Bases, as used in this clause, means a collection of data in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

Computer software, as used in this clause, means

(i) computer programs which are data comprising a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations and

(ii) data comprising source code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the computer program to be produced, created or compiled. The term does not include computer data bases.

Data, as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to administration, such as financial, administrative, cost or pricing or management information.

Form, fit, and function data, as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability as well as data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements except that for computer

software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

Limited rights data, as used in this clause, means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged.

Restricted computer software, as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and confidential or privileged; or is published copyrighted computer software; including modifications of such computer software.

Protected data, as used in this clause, means technical data or commercial or financial data first produced in the performance of the award which, if it had been obtained from and first produced by a non-federal party, would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of 5 U.S.C. 552(b)(4) and which data is marked as being protected data by a party to the award.

Protected rights, as used in this clause, mean the rights in protected data set forth in the Protected Rights Notice of paragraph (g) of this clause.

Technical data, as used in this clause, means that data which are of a scientific or technical nature. Technical data does not include computer software, but does include manuals and instructional materials and technical data formatted as a computer data base.

Unlimited rights, as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose whatsoever, and to have or permit others to do so.

(b) Allocation of Rights

(1) Except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights in—

(i) Data specifically identified in this agreement as data to be delivered without restriction;

(ii) Form, fit, and function data delivered under this agreement;

(iii) Data delivered under this agreement (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this agreement; and

(iv) All other data delivered under this agreement unless provided otherwise for protected data in accordance with paragraph (g) of this clause or for limited rights data or restricted computer software in accordance with paragraph (h) of this clause.

(2) The Recipient shall have the right to—

(i) Protect rights in protected data delivered under this agreement in the manner and to the extent provided in paragraph (g) of this clause;

(ii) Withhold from delivery those data which are limited rights data or restricted computer software to the extent provided in paragraph (h) of this clause;

(iii) Substantiate use of, add, or correct protected rights or copyrights notices and to take other appropriate action, in accordance with paragraph (e) of this clause; and

(iv) Establish claim to copyright subsisting in data first produced in the performance of this agreement to the extent provided in paragraph (c)(1) of this clause.

(c) Copyright

(1) Data first produced in the performance of this agreement. Except as otherwise specifically provided in this agreement, the Recipient may establish, without the prior approval of the Contracting Officer, claim to copyright subsisting in any data first produced in the performance of this agreement. If claim to copyright is made, the Recipient shall affix the applicable copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including agreement number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For such copyrighted data, including computer software, the Recipient grants to the Government, and others acting on its behalf, a paid-up nonexclusive, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government, for all such data.

(2) Data not first produced in the performance of this agreement. The Recipient shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this agreement any data that are not first produced in the performance of this agreement and that contain the copyright notice of 17 U.S.C. 401 or 402, unless the Recipient identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (c)(1) of this clause; provided, however, that if such data are computer software, the Government shall acquire a copyright license as set forth in paragraph (h)(3) of this clause if included in this agreement or as otherwise may be provided in a collateral agreement incorporated or made a part of this agreement.

(3) Removal of copyright notices. The Government agrees not to remove any copyright notices placed on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) Release, Publication and Use of Data

(1) The Receipt shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Recipient in the performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided in this paragraph of this clause or expressly set forth in this contract.

(2) The Recipient agrees that to the extent it receives or is given access to data necessary for the performance of this agreement which contain restrictive markings, the Recipient shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(e) Unauthorized Marking of Data

(1) Notwithstanding any other provisions of this agreement concerning inspection or acceptance, if any data delivered under this agreement are marked with the notices specified in paragraph (g)(2) or (g)(3) of this clause and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this agreement, the Contracting Officer may at any time either return the data to the Recipient or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer shall make written inquiry to the Recipient affording the Recipient 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Recipient fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.

(iii) If the Recipient provides written justification to substantiate the propriety of the markings within the period set in subdivision (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be cancelled or ignored. If the Contracting Officer determines that the markings are authorized, the Recipient shall be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer shall furnish the Recipient a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Recipient files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (e)(1)(iii) until final resolution of the matter either by the Contracting Officer's determination become final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(2) The time limits in the procedures set forth in paragraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(f) Omitted or Incorrect Markings

(1) Data delivered to the Government without either the protected rights notice as authorized by paragraph (g) of this clause, the limited rights or restricted rights notice as authorized by paragraph (h) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Recipient may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Recipient's expense, and the Contracting Officer may agree to do so if the Recipient—

(i) Identifies the data to which the omitted notice is to be applied;

(ii) Demonstrates that the omission of the notice was inadvertent;

(iii) Establishes that the use of the proposed notice is authorized; and

(iv) Acknowledges that the Government has no liability with respect to the disclosure, use, or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) The Contracting Officer may also:

(i) Permit correction at the Recipient's expense of incorrect notices if the Recipient identifies the data on which correction of the notice is to be made, and demonstrates that the correct notice is authorized; or

(ii) Correct any incorrect notices.

(g) Rights to Protected Data

(1) The Recipient may, with the concurrence of DOE, claim and mark as protected data, any data first produced in the performance of this award that would have been treated as a trade secret if developed at private expense. Any such claimed "protected data" will be clearly marked with the following Protected Rights Notice, and will be treated in accordance with such Notice, subject to the provisions of paragraphs (e) and (f) of this clause.

Protected Rights Notice

These protected data were produced under agreement no. DE-EE0007897 with the U.S. Department of Energy and may not be published, disseminated, or disclosed to others outside the Government until five

(5) years from the date that data were produced, unless express written authorization is obtained from the recipient. Upon expiration of the period of protection set forth in this Notice, the Government shall have unlimited rights in this data. This Notice shall be marked on any reproduction of this data, in whole or in part.

(End of notice)

(2) Any such marked Protected Data may be disclosed under obligations of confidentiality for the following purposes:

(a) For evaluation purposes under the restriction that the "Protected Data" be retained in confidence and not be further disclosed; or

(b) To subcontractors or other team members performing work under the Government's program of which this award is a part, for information or use in connection with the work performed under their activity, and under the restriction that the Protected Data be retained in confidence and not be further disclosed.

(3) The obligations of confidentiality and restrictions on publication and dissemination shall end for any Protected Data:

(a) At the end of the protected period;

(b) If the data becomes publicly known or available from other sources without a breach of the obligation of confidentiality with respect to the Protected Data;

(c) If the same data is independently developed by someone who did not have access to the Protected Data and such data is made available without obligations of confidentiality; or

(d) If the Recipient disseminates or authorizes another to disseminate such data without obligations of confidentiality.

(4) However, the Recipient agrees that the following types of data generated under this Agreement are not considered to be protected and shall be provided to the Government when required by this Agreement without any claim that the data are Protected Data. Furthermore, the Recipient will not mark any data as protected that is inconsistent with the data management plan submitted as part of the application for this Agreement. The parties agree that notwithstanding the following list of types of data, nothing precludes the Government from seeking delivery of additional data in accordance with this Agreement, or from making publicly available additional non-protected data, nor does the following list constitute any admission by the Government that technical data not on the list is Protected Data.

(a) Relative improvements to reducing primary feedstock and increasing secondary feedstock consumption based on Institute goals and metrics and methodology of assessing the impact of improvements.

(b) Relative improvement to operating and performance characteristics of manufacturing processes for reuse, recycling and/or remanufacturing of materials, for example energy requirements, contaminant removal, sorting efficiency, primary and secondary feedstock consumption, recycled feedstock consumption and impact of improvements on Institute goals and metrics and methodology of assessing the impact of improvements.

(c) Relative improvements in embodied energy efficiency; sorting, separating, and contaminant removal; and reducing energy demand of secondary feedstock based on developed technologies based on Institute goals and metrics.

(e) Capabilities of modeling and simulation tools, results from generic case studies, validation results, and uncertainty quantification of the modeling and simulation tools.

(f) Metadata related to process models, material flow analysis, data analytics and prediction models, optimization models, use case models and results, and simulation models.

(g) Non-enabling illustrations or photographs of the finished manufacturing process equipment, analytical equipment, constituent materials, intermediate material forms and testbed components and infrastructure.

(5) The Government's sole obligation with respect to any protected data shall be as set forth in this paragraph (g).

(h) Protection of Limited Rights Data

- (1) When data other than that listed in paragraphs (b)(1)(i), (ii), and (iii) of this clause are specified to be delivered under this agreement and such data qualify as either limited rights data or restricted computer software, the Recipient, if the Recipient desires to continue protection of such data, shall withhold such data and not furnish them to the Government under this agreement. As a condition to this withholding the Recipient shall identify the data being withheld and furnish form, fit, and function data in lieu thereof.
- (2) Notwithstanding paragraph (h)(1) of this clause, the agreement may identify and specify the delivery of limited rights data, or the Contracting Officer may require by written request the delivery of limited rights data that has been withheld or would otherwise be withholdable. If delivery of such data is so required, the Recipient may affix the following "Limited Rights Notice" to the data and the Government will thereafter treat the data, in accordance with such Notice:

Limited Rights Notice

(a) These data are submitted with limited rights under Government agreement No. DE-EE0007897 (and subaward/contract No. ____, if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Recipient, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, if any, provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

(1) Use (except for manufacture) by Federal support services contractors within the scope of their contracts;

(2) This "limited rights data" may be disclosed for evaluation purposes under the restriction that the "limited rights data" be retained in confidence and not be further disclosed;

(3) This "limited rights data" may be disclosed to other contractors participating in the Government's program of which this Recipient is a part for information or use (except for manufacture) in connection with the work performed under their awards and under the restriction that the "limited rights data" be retained in confidence and not be further disclosed;

(4) This "limited rights data" may be used by the Government or others on its behalf for emergency repair or overhaul work under the restriction that the "limited rights data" be retained in confidence and not be further disclosed; and

(5) Release to a foreign government, or instrumentality thereof, as the interests of the United States Government may require, for information or evaluation, or for emergency repair or overhaul work by such government. This Notice shall be marked on any reproduction of this data in whole or in part.

(b) This Notice shall be marked on any reproduction of these data, in whole or in part.

(End of notice)

(i) Subaward/Contract

The Recipient has the responsibility to obtain from its subrecipients/contractors all data and rights therein necessary to fulfill the Recipient's obligations to the Government under this agreement. If a subrecipient/contractor refuses to accept terms affording the Government such rights, the Recipient shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subaward/contract award without further authorization.

(j) Additional Data Requirements

In addition to the data specified elsewhere in this agreement to be delivered, the Contracting Officer may, at any time during agreement performance or within a period of 3 years after acceptance of all items to be delivered under this agreement, order any data first produced or specifically used in the performance of this agreement. This clause is applicable to all data ordered under this subparagraph. Nothing contained in this subparagraph shall require the Recipient to deliver any data the withholding of which is authorized by this clause or data which are specifically identified in this agreement as not subject to this clause. When data are to be delivered under this subparagraph, the Recipient will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(k) The Recipient agrees, except as may be otherwise specified in this agreement for specific data items listed as not subject to this paragraph, that the Contracting Officer or an authorized representative may, up to three years after acceptance of all items to be delivered under this contract, inspect at the Recipient's facility any data withheld pursuant to paragraph (h) of this clause, for purposes of verifying the Recipient's assertion pertaining to the limited rights or restricted rights status of the data or for evaluating work performance. Where the Recipient whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if the inspection were made by a particular representative, the Contracting Officer shall designate an alternate inspector.

(End of clause)

04. 2 CFR 910, Appendix A of Subpart D, Patent Rights (Small Business Firms and Nonprofit Organizations)(as modified by the EERE/ARPA-E DEC)

(a) Definitions

Invention means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 *et seq.*).

Made when used in relation to any invention means the conception or first actual reduction to practice of such invention.

Nonprofit organization is defined in 2 CFR 200.70.

Practical application means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

Small business firm means a small business concern as defined at section 2 of Public Law 85-536 (16 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3 through 121.8 and 13 CFR 121.3 through 121.12, respectively, will be used.

Subject invention means any invention of the Recipient conceived or first actually reduced to practice in the performance of work under this award, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d) must also occur during the period of award performance.

(b) Allocation of Principal Rights

The Recipient may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this Patent Rights clause and 35 U.S.C. 203. With respect to any subject invention in which the Recipient retains title, the Federal Government shall have a non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the U.S. the subject invention throughout the world.

(c) Invention Disclosure, Election of Title and Filing of Patent Applications by Recipient

(1) The Recipient will disclose each subject invention to DOE within two months after the inventor discloses it in writing to Recipient personnel responsible for the administration of patent matters. The disclosure to DOE shall be in the form of a written report and shall identify the award under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to DOE, the Recipient will promptly notify DOE of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Recipient.

(2) The Recipient will elect in writing whether or not to retain title to any such invention by notifying DOE within two years of disclosure to DOE. However, in any case where publication, on sale, or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the U.S., the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Recipient will file its initial patent application on an invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the U.S. after a publication, on sale, or public use. The Recipient will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application, or six months from the date when permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications when such filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure to DOE, election, and filing under subparagraphs (c)(1), (2), and (3) of this clause may, at the discretion of DOE, be granted.

(d) Conditions When the Government May Obtain Title

The Recipient will convey to DOE, upon written request, title to any subject invention:

(1) If the Recipient fails to disclose or elect the subject invention within the times specified in paragraph (c) of this patent rights clause, or elects not to retain title; provided that DOE may only request title within 60 days after learning of the failure of the Recipient to disclose or elect within the specified times;

(2) In those countries in which the Recipient fails to file patent applications within the times specified in paragraph (c) of this Patent Rights clause; provided, however, that if the Recipient has filed a patent application in a country after the times specified in paragraph (c) of this Patent Rights clause, but prior to its receipt of the written request of DOE, the Recipient shall continue to retain title in that country;

(3) In any country in which the Recipient decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention; or

(4) Upon breach of paragraph (h) or paragraph (n) on this Patent Rights clause.

(e) Minimum Rights to Recipient and Protection of the Recipient Right To File

(1) The Recipient will retain a non-exclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Recipient fails to disclose the subject invention within the times specified

in paragraph (c) of this Patent Rights clause or breaches paragraph (h) or paragraph (n) of this Patent Rights clause. The Recipient's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Recipient is a party and includes the right to grant sublicenses of the same scope of the extent the Recipient was legally obligated to do so at the time the award was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Recipient's business to which the invention pertains.

(2) The Recipient's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR part 404 and the agency's licensing regulation, if any. This license will not be revoked in that field of use or the geographical areas in which the Recipient has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at discretion of the funding Federal agency to the extent the Recipient, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, the funding Federal agency will furnish the Recipient a written notice of its intention to revoke or modify the license, and the Recipient will be allowed thirty days (or such other time as may be authorized by DOE for good cause shown by the Recipient) after the notice to show cause why the license should not be revoked or modified. The Recipient has the right to appeal, in accordance with applicable regulations in 37 CFR part 404 and the agency's licensing regulations, if any, concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(f) Recipient Action To Protect Government's Interest

(1) The Recipient agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to:

(i) Establish or confirm the rights the Government has throughout the world in those subject inventions for which the Recipient retains title; and

(ii) Convey title to DOE when requested under paragraph (d) of this Patent Rights clause, and to enable the government to obtain patent protection throughout the world in that subject invention.

(2) The Recipient agrees to require, by written agreement, its employees, other than clerical and non-technical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Recipient each subject invention made under this award in order that the Recipient can comply with the disclosure provisions of paragraph (c) of this Patent Rights clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information requested by paragraph (c)(1) of this Patent Rights clause. The Recipient shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Recipient will notify DOE of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.

(4) The Recipient agrees to include, within the specification of any U.S. patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under DE-EE0007888 awarded by the U.S. Department of Energy. The Government has certain rights in this invention."

(g) Subaward/Contract

(1) The Recipient will include this Patent Rights clause, suitably modified to identify the parties, in all subawards/contracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or nonprofit organization. The subrecipient/contractor will retain all rights provided for the Recipient in this Patent Rights clause, and the Recipient will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractors' subject inventions.

(2) The Recipient shall include Patent Rights (Domestic Large Businesses): Terms and Conditions of Class Patent Waiver W(C) 2014-003 as modified to incorporate U.S. Manufacturing Plan of DE-EE0007897, attached to these IP provisions as Attachment 1, suitably modified to identify the parties, in all subawards/contracts, regardless of tier, for experimental, developmental or research work to be performed by a domestic large business.

(3) Pursuant to Advance Patent Waiver W(A) 2021-004, the Recipient may include the same Terms and Conditions of Class Patent Waiver W(C) 2014-003 as modified to incorporate U.S. Manufacturing Plan of DE-EE0007897, attached to these IP provisions as Attachment 1, for Kingston Process Metallurgy in the subaward agreement for project 20-01-RR-4010 entitled "Selective Recovery of Elements from Molten Aluminum Alloys."

(4) The Recipient will include in all other subawards/contracts, regardless of tier, for experimental, developmental or research work, the patent rights clause required by 2 CFR 910.362(c).

(5) In the case of subawards/contracts at any tier, DOE, the Recipient, and the subrecipient/contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subrecipient/contractor and DOE with respect to those matters covered by the clause.

(h) Reporting on Utilization of Subject Inventions

The Recipient agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Recipient or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Recipient, products that embody or are made through the use of the subject invention, manufacturing locations of such products and such other data and information as DOE may reasonably specify. The Recipient also agrees to provide additional reports in connection with any march-in proceeding undertaken by DOE in accordance with paragraph (j) of this Patent Rights clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without the permission of the Recipient.

(i) Preference for United States Industry.

Notwithstanding any other provision of this Patent Rights clause, the Recipient agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the U.S. unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the U.S. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Recipient or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the U.S. or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in-Rights

The Recipient agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with procedures at 37 CFR 401.6 and any supplemental regulations of the Agency to require the Recipient, an assignee or exclusive licensee of a subject invention to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances and if the Recipient, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that:

(1) Such action is necessary because the Recipient or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Recipient, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Recipient, assignee, or licensee; or

(4) Such action is necessary because the agreement required by paragraph (i) of this Patent Rights clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the U.S. is in breach of such agreement.

(k) Special Provisions for Awards With Nonprofit Organizations

If the Recipient is a nonprofit organization, it agrees that:

(1) Rights to a subject invention in the U.S. may not be assigned without the approval of DOE, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Recipient;

(2) The Recipient will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when DOE deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

(3) The balance of any royalties or income earned by the Recipient with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific or engineering research or education; and

(4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms and that it will give preference to a small business firm if the Recipient determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided that the Recipient is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Recipient. However, the Recipient agrees that the Secretary of Commerce may review the Recipient's licensing program and decisions regarding small business applicants, and the Recipient will negotiate changes to its licensing policies, procedures or practices with the Secretary when the Secretary's review discloses that the Recipient could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4).

(l) Communications

All communications required by this Patent Rights clause should be sent to the DOE Patent Counsel address listed in the Award Document.

(m) Electronic Filing

Unless otherwise specified in the award, the information identified in paragraphs (f)(2) and (f)(3) may be electronically filed.

(n) U.S. Manufacturing Plan

(1) The Recipient agrees that a purpose of this contract is to provide substantial benefit to the U.S. economy. In exchange for the benefits and rights received under this contract, the Recipient agrees to comply with the U.S. Manufacturing Plan that is attached to these IP provisions as Attachment 3 and was submitted as part of its proposal upon which this contract is based, including, but not limited to, the following commitments:

- (i) Any products embodying intellectual property developed under the REMADE Institute shall be substantially manufactured in the United States unless the Member can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event that DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's etc. The Subrecipient agrees that it will not license, assign or otherwise transfer any REMADE IP to any entity unless that entity agrees to these same requirements.

- (ii) Process, services, and improvements thereof which are covered by Intellectual Property developed under the Institute shall be initially be demonstrated at the Member's manufacturing facilities in the United States either prior to or simultaneously with demonstrations that may take place outside the United States.

(2) The requirement and enforcement of the U.S. Manufacturing Plan is in accordance with the Determination of Exceptional Circumstances (DEC) executed by DOE on September 11, 2013. A copy of the DEC is attached to these IP provisions as Attachment 2. As set forth in 37 CFR 401.4, the Recipient has the right to appeal the imposition of the DEC within 30 working data from the time it receives a copy of it.

(End of clause)

Attachment 1 – Patent Rights (Domestic Large Businesses): Terms and Conditions of Class Patent Waiver W(C) 2014-003 as modified to incorporate U.S. Manufacturing Plan of DE-EE0007897

(a) Definitions.

As used in this clause:

Background patent means a domestic patent covering an invention or discovery which is not a Subject Invention and which is owned or controlled by the Contractor at any time through the completion of this contract:

- (i) Which the Contractor, but not the Government, has the right to license to others without obligation to pay royalties thereon, and
- (ii) Infringement of which cannot reasonably be avoided upon the practice of any specific process, method, machine, manufacture or composition of matter (including relatively minor modifications thereof) which is a subject of the research, development, or demonstration work performed under this contract.

Contract means any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work, and includes any assignment or substitution of parties.

DOE patent waiver regulations means the Department of Energy patent waiver regulations at 10 CFR Part 784.

Invention as used in this clause, means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code or any novel variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

Made when used in relation to any invention means the conception or first actual reduction to practice of such invention.

Nonprofit organization means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

Patent Counsel means the Department of Energy Patent Counsel assisting the procuring activity.

Practical application means to manufacture, in the case of a composition or product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

Secretary means the Secretary of Energy.

Small business firm means a small business concern as defined at Section 2 of the Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.

Subject invention means any invention of the Contractor conceived or first actually reduced to practice in the course of or under this contract, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act (7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(b) Allocation of principal rights.

Whereas DOE has granted a waiver of rights to subject inventions to the Contractor, the Contractor may elect to retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 202 and 203. With respect to any subject invention in which the Contractor elects to retain title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(c) Invention disclosure, election of title, and filing of patent applications by Contractor.

(1) The Contractor shall disclose each subject invention to the Patent Counsel within six months after conception or first actual reduction to practice, whichever occurs first in the course of or under this contract, but in any event, prior to any sale, public use, or public disclosure of such invention known to the Contractor. The disclosure to the Patent Counsel shall be in the form of a written report and shall identify the inventors and the contract under which the invention was made. It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale, or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the Patent Counsel, the Contractor shall promptly notify the Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.

(2) The Contractor shall elect in writing whether or not to retain title to any such invention by notifying the Patent Counsel at the time of disclosure or within 8 months of disclosure, as to those countries (including the United States) in which the Contractor will retain title; provided, that in any case where publication, on sale, or public use has initiated the 1-year statutory period wherein valid patent protection can still be obtained in the United States, the period of election of

title may be shortened by the Agency to a date that is no more than 60 days prior to the end of the statutory period. The Contractor shall notify the Patent Counsel as to those countries (including the United States) in which the Contractor will retain title not later than 60 days prior to the end of the statutory period.

(3) The Contractor shall file its United States patent application on an elected invention within 1 year after election, but not later than at least 60 days prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor shall file patent applications in additional countries (including the European Patent Office and under the Patent Cooperation Treaty) within either 10 months of the corresponding initial patent application or 6 months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where foreign filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure to the Patent Counsel, election, and filing may, at the discretion of DOE, be granted, and will normally be granted unless the Patent Counsel has reason to believe that a particular extension would prejudice the Government's interest.

(d) Conditions when the Government may obtain title notwithstanding an existing waiver.

The Contractor shall assign and hereby assigns to DOE, upon written request from DOE, title to any subject invention--

(1) If the Contractor elects not to retain title to a subject invention;

(2) If the Contractor fails to disclose or elect the subject invention within the times specified in paragraph (c) of this clause (provided that DOE may only request title within 60 days after learning of the Contractor's failure to report or elect within the specified times);

(3) In those countries in which the Contractor fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Contractor has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of DOE, the Contractor shall continue to retain title in that country;

(4) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention;

(5) If the waiver authorizing the use of this clause is terminated as provided in paragraph (p) of this clause; or

(6) Upon a breach of paragraph (h) or paragraph (t) of this clause.

(e) Minimum rights to Contractor when the Government retains title.

(1) The Contractor shall retain a nonexclusive, royalty-free license throughout the world in each subject invention to which the Government obtains title under paragraph (d) of this clause except if the Contractor fails to disclose the subject invention within the times specified in paragraph (c) of this clause or breaches paragraph (h) or (t). The Contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions in 37 CFR part 404 and DOE licensing regulations. This license shall not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE shall furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor shall be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable agency licensing regulations and 37 CFR part 404 concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(f) Contractor action to protect the Government's interest.

(1) The Contractor agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to:

(i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and

(ii) convey title to DOE when requested under paragraphs (d) and (n)(2) of this clause, and to enable the Government to obtain patent protection throughout the world in that subject invention.

(2) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file

patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by paragraph (c)(1) of this clause. The Contractor shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Contractor shall notify DOE of any decision not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.

(4) The Contractor agrees to include, within the specification of any United States patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under (identify the contract) awarded by DOE. The Government has certain rights in this invention."

(5) The Contractor shall establish and maintain active and effective procedures to assure that subject inventions are promptly identified and disclosed to Contractor personnel responsible for patent matters within 6 months of conception and/or first actual reduction to practice, whichever occurs first in the course of or under this contract. These procedures shall include the maintenance of laboratory notebooks or equivalent records and other records as are reasonably necessary to document the conception and/or the first actual reduction to practice of subject inventions, and records that show that the procedures for identifying and disclosing the inventions are followed. Upon request, the Contractor shall furnish the Patent Counsel a description of such procedures for evaluation and for determination as to their effectiveness.

(6) The Contractor agrees, when licensing a subject invention, to arrange to avoid royalty charges on acquisitions involving Government funds, including funds derived through Military Assistance Program of the Government or otherwise derived through the Government; to refund any amounts received as royalty charges on the subject invention in acquisitions for, or on behalf of, the Government; and to provide for such refund in any instrument transferring rights in the invention to any party.

(7) The Contractor shall furnish the Patent Counsel the following:

(i) Interim reports every 12 months (or such longer period as may be specified by the Patent Counsel) from the date of the contract, listing subject inventions during that period and certifying that all subject inventions have been disclosed or that there are no such inventions.

(ii) A final report, within 3 months after completion of the contracted work, listing all subject inventions or certifying that there were no such inventions, and listing all subcontracts at any tier containing a patent rights clause or certifying that there were no such subcontracts.

(8) The Contractor shall promptly notify the Patent Counsel in writing upon the award of any subcontract at any tier containing a patent rights clause by identifying the subcontractor, the applicable patent rights clause, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Patent Counsel, the Contractor shall furnish a copy of such subcontract, and no more frequently than annually, a listing of the subcontracts that have been awarded.

(9) The Contractor shall provide, upon request, the filing date, serial number and title, a copy of the patent application (including an English-language version if filed in a language other than English), and patent number and issue date for any subject invention for which the Contractor has retained title.

(10) Upon request, the Contractor shall furnish the Government an irrevocable power to inspect and make copies of the patent application file.

(g) Subcontracts.

(1) Unless otherwise directed by the Contracting Officer, the Contractor shall include Patent Rights (Small Business Firms and Nonprofit Organizations)(as modified by the EERE/ARPA-E DEC) (suitably modified to identify the parties), in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed by a small business firm or nonprofit organization. The Contractor shall not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) The Contractor shall include this clause (suitably modified to identify the parties), in all subawards/contracts, regardless of tier, for experimental, developmental or research work to be performed by a domestic large business.

(3) In all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work, the Contractor shall include the patent rights clause at 48 CFR 952.227-13 (suitably modified to identify the parties).

(4) In the case of subcontractors at any tier, the Department, the subcontractor, and Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the Department with respect to those matters covered by this clause.

(5) The Contractor shall promptly notify the Contracting Officer in writing upon the award of any subcontract at any tier containing a patent rights clause by identifying the subcontractor, the applicable patent rights clause, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Contracting Officer, the Contracting Officer shall furnish a copy of such subcontract, and, no more frequently than annually, a listing of the subcontracts that have been awarded.

(h) Reporting on utilization of subject inventions.

(1) The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of each waived subject invention or on efforts at obtaining such utilization that are being made by the Contractor and any of its licensees or assignees including compliance with paragraph (t) of this clause. Each report shall include information regarding the status of development, date of first commercial sale or use, products that embody or are made through the use of the waived such invention, manufacturing locations of such products and such other data and information as DOE may reasonably specify. The report shall further include a certification from the Contractor that the Contractor, including its licensees, is in compliance with the requirements of this clause.

(2) The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceedings undertaken by DOE in accordance with paragraph (j) of this clause.

(3) To the extent data or information supplied under this paragraph is considered by the Contractor, its licensee or assignee to be privileged and confidential and is so marked, DOE agrees that, to the extent permitted by law, it shall not disclose such information to persons outside the Government.

(i) Preference for United States industry.

Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in rights.

The Contractor agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with the procedures in 48 CFR 27.304-1(g) to require the Contractor, an assignee, or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that--

(1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or

(4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Background Patents [reserved]

(l) Communications.

All reports and notifications required by this clause shall be submitted to the Patent Counsel unless otherwise instructed.

(m) Other inventions.

Nothing contained in this clause shall be deemed to grant to the Government any rights with respect to any invention other than a subject invention, except with respect to Background Patents, above.

(n) Examination of records relating to inventions.

(1) The Contracting Officer or any authorized representative shall, until 3 years after final payment under this contract, have the right to examine any books (including laboratory notebooks), records, and documents of the Contractor relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this contract to determine whether--

(i) Any such inventions are subject inventions;

(ii) The Contractor has established and maintains the procedures required by paragraphs (f)(2) and (f)(5) of this clause; and

(iii) The Contractor and its inventor have complied with the procedures.

(2) If the Contracting Officer determines that an inventor has not disclosed a subject invention to the Contractor in accordance with the procedures required by paragraph (f)(5) of this clause, the Contracting Officer may, within 60 days after the determination, request title in accordance with paragraphs (d)(2) and (d)(3) of this clause. However, if the Contractor establishes that the failure to disclose did not result from the Contractor's fault or negligence, the Contracting Officer shall not request title.

(3) If the Contracting Officer learns of an unreported Contractor invention which the Contracting Officer believes may be a subject invention, the Contractor may be required to disclose the invention to DOE for a determination of ownership rights.

(4) Any examination of records under this paragraph shall be conducted in such a manner as to protect the confidentiality of the information involved.

(o) Withholding of payment.

NOTE: This paragraph does not apply to subcontracts or grants.

(1) Any time before final payment under this contract, the Contracting Officer may, in the Government's interest, withhold payment until a reserve not exceeding \$50,000 or 5 percent of the amount of the contract, whichever is less, shall have been set aside if, in the Contracting Officer's opinion, the Contractor fails to--

- (i) Establish, maintain, and follow effective procedures for identifying and disclosing subject inventions pursuant to paragraph (f)(5) of this clause;
- (ii) Disclose any subject invention pursuant to paragraph (c)(1) of this clause;
- (iii) Deliver acceptable interim reports pursuant to paragraph (f)(7)(I) of this clause;
- (iv) Provide the information regarding subcontracts pursuant to paragraph (f)(6) of this clause; or
- (v) Convey to the Government, using a DOE-approved form, the title and/or rights of the Government in each subject invention as required by this clause.

(2) Such reserve or balance shall be withheld until the Contracting Officer has determined that the Contractor has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause.

(3) Final payment under this contract shall not be made before the Contractor delivers to the Patent Counsel all disclosures of subject inventions required by paragraph (c)(1) of this clause, an acceptable final report pursuant to paragraph (f)(7)(ii) of this clause, and all past due confirmatory instruments, and the Patent Counsel has issued a patent clearance certification to the Contracting Officer.

(4) The Contracting Officer may decrease or increase the sums withheld up to the maximum authorized above. If the maximum amount authorized above is already being withheld under other provisions of the contract, no additional amount shall be withheld under this paragraph. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(p) Waiver Terminations.

Any waiver granted to the Contractor authorizing the use of this clause (including any retention of rights pursuant thereto by the Contractor under paragraph (b) of this clause) may be terminated at the discretion of the Secretary or his designee in whole or in part, if the request for waiver by the Contractor is found to contain false material statements or nondisclosure of material facts, and such were specifically relied upon by DOE in reaching the waiver

determination or the cost share requirement as set forth in the applicable statement of considerations is not met. Prior to any such termination, the Contractor will be given written notice stating the extent of such proposed termination and the reasons therefor, and a period of 30 days, or such longer period as the Secretary or his designee shall determine for good cause shown in writing, to show cause why the waiver of rights should not be so terminated. Any waiver termination shall be subject to the Contractor's minimum license as provided in paragraph (e) of this clause.

(q) Atomic Energy.

No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this contract.

(r) Publication.

It is recognized that during the course of work under this contract, the contractor or its employees may from time to time desire to release or publish information regarding scientific or technical developments conceived or first actually reduced to practice in the course of or under this contract. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the contractor, approval for release of publication shall be secured from Patent Counsel prior to any such release or publication. In appropriate circumstances, and after consultation with the contractor, Patent Counsel may waive the right of prepublication review.

(s) Forfeiture of rights in unreported subject inventions.

(1) The contractor shall forfeit and assign to the Government, at the request of the Secretary of Energy or designee, all rights in any subject invention which the contractor fails to report to Patent Counsel within six months after the time the contractor:

- (i) Files or causes to be filed a United States or foreign patent application thereon; or
- (ii) Submits the final report required by paragraph (f)(7)(ii) of this clause, whichever is later.

(2) However, the Contractor shall not forfeit rights in a subject invention if, within the time specified in paragraph (n)(1) of this clause, the contractor:

- (i) Prepares a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the contract and delivers the decision to Patent Counsel, with a copy to the Contracting Officer; or
- (ii) Contending that the subject invention is not a subject invention, the contractor nevertheless discloses the subject invention and all facts pertinent to this contention to the Patent Counsel, with a copy to the Contracting Officer, or
- (iii) Establishes that the failure to disclose did not result from the contractor's fault or negligence.

(3) Pending written assignment of the patent application and patents on a subject invention determined by the Contracting Officer to be forfeited (such determination to be a Final Decision under the Disputes clause of this contract), the contractor shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this paragraph shall be in addition to and shall not supersede any other rights and remedies which the Government may have with respect to subject inventions.

(t) U. S. Competitiveness

In lieu of the standard U.S. Competitiveness Provision of W(C) 2014-003, the contractor agrees to comply with the U.S. Manufacturing Plan that is attached to these IP provisions as Attachment 3 and was submitted as part of its proposal upon which this contract is based including, but not limited to, the following commitments:

(i) Any products embodying intellectual property developed under the REMADE Institute shall be substantially manufactured in the United States unless the Member can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event that DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's etc. The Subrecipient agrees that it will not license, assign or otherwise transfer any REMADE IP to any entity unless that entity agrees to these same requirements.

(ii) Process, services, and improvements thereof which are covered by Intellectual Property developed under the Institute shall be initially be demonstrated at the Member's manufacturing facilities in the United States either prior to or simultaneously with demonstrations that may take place outside the United States..

(End of clause)



Department of Energy

Washington, DC 20585

September 9, 2013

DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES UNDER THE BAYH-DOLE ACT FOR ENERGY EFFICIENCY, RENEWABLE ENERGY, AND ADVANCED ENERGY TECHNOLOGIES

Under the Bayh-Dole Act, 35 U.S.C. §§ 200-12 ("Bayh-Dole"), Federal agencies may determine that "exceptional circumstances" exist such that a modification in the patent rights disposition provided under the Act would better promote its objectives. The Department of Energy ("DOE") has determined that exceptional circumstances exist for disposition of patent rights arising under research, development, demonstration, and market transformation projects involving energy efficiency, renewable energy, and advanced energy technologies as described in Title IX, Subtitles A through D of the Energy Policy Act of 2005 (42 U.S.C. 16191 through 16256), and Title V, Section 5012 of the America COMPETES Act of 2007 (as amended by Title IX, Section 904 of the America COMPETES Act of 2010)(42 U.S.C. 16538) to better promote U.S. manufacturing.

These technologies are (1) energy efficiency, storage, integration, and related technologies, including (as examples only) for buildings, transportation, and energy-intensive industries; (2) renewable energy technologies, including (as examples only) for wind power, water power, photovoltaic, solar thermal, geothermal power, hydrogen power, biomass power, biofuel power, and fuel cells; and (3) advanced energy technologies, including transformational, breakthrough energy technologies in a variety of technical areas that have the potential to lead to revolutionary advances in the marketplace, including (as examples only) projects for advanced components and materials.

To better meet the objectives of Bayh-Dole, which include the goal of promoting commercialization of inventions by United States industry and labor, DOE proposes the use of U.S. Manufacturing Plans in funding agreements that support research, development, and demonstration of energy efficiency, renewable energy, and advanced energy technologies. The U.S. Manufacturing Plans consist of commitments proposed by applicants in response to funding opportunity announcements (FOAs), would be used by DOE during its evaluation and selection process, and would be formally incorporated into funding agreements following award negotiations. DOE may require the submission of U.S. Manufacturing Plans by all types of applicants, including large businesses, small businesses, and non-profit organizations. Once incorporated into a funding agreement, U.S. Manufacturing Plans may be enforced, among other possible remedies, through forfeiture of rights to subject inventions. Except for the U.S.



Manufacturing Plans and the enforcement mechanism, the patent rights granted to certain funding recipients under Bayh-Dole remain the same. In accordance with 37 C.F.R. 401.3(e), DOE makes the following determination of exceptional circumstances, along with the supporting statement of facts and analysis.

I. *The patent rights provided by Bayh-Dole may be modified to better promote the objectives of the Act when an agency determines that “exceptional circumstances” exist.*

a. *Bayh-Dole provides a standard set of patent rights to recipients of federal funds under a funding agreement.*

Rights to inventions that contractors, subcontractors, as well as recipients and sub-recipients of grants and cooperative agreements (“funding recipients”) conceive or first actually reduce to practice in performance of work under a funding agreement (“subject inventions”) are governed by Bayh-Dole and the federal regulations that implement Bayh-Dole.¹ A “funding agreement” is “any contract, grant, or cooperative agreement entered into by any Federal agency . . . and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government.”²

Bayh-Dole allows certain non-profit organizations and domestic small businesses who are recipients of a funding agreement (“Bayh-Dole entities”) to elect title to their subject inventions subject to limited government rights, and further provides that the recipients must comply with certain disclosure, patent prosecution, and other requirements.³ In order to comply with Bayh-Dole, Federal agencies are required to use a standard patent rights clause for funding agreements with Bayh-Dole entities.⁴

b. *Standard patent rights under Bayh-Dole may be modified when “exceptional circumstances” exist and a modification would better promote the Act’s objectives.*

A Federal agency may restrict, eliminate, or otherwise modify rights provided to Bayh-Dole entities and implemented through the standard patent rights clause in “exceptional circumstances” when the Federal agency determines that a restriction, elimination, or modification of the rights and requirements provided by Bayh-Dole would better promote the

¹ 35 U.S.C. §§ 200-212; 37 C.F.R. Part 401.

² 35 U.S.C. § 201 (b).

³ Bayh-Dole does not provide large business recipients the right to elect title to subject inventions under DOE statutory authorities. 42 U.S.C. §§ 2182 and 5908. Bayh-Dole also does not apply to Technology Investment Agreements, under DOE’s Other Transactions Authority. 42 U.S.C. § 7256.

⁴ 37 C.F.R. § 401.3(a).

Act's objectives.⁵ The degree or scope of the modification should only be to the extent necessary to address the exceptional circumstances.⁶

- II. *Promoting domestic manufacture of products derived from federally-funded research is a primary objective of Bayh-Dole.*

A fundamental objective of Bayh-Dole is to promote U.S. manufacturing by encouraging the domestic manufacture of products derived from federally-funded research. Among the listed objectives of Bayh-Dole is "to promote the commercialization and public availability of inventions made in the United States by United States industry and labor."⁷

Bayh-Dole was enacted in 1980, in part, to address a growing concern regarding the ability of U.S. manufacturing to compete in an increasingly globalized marketplace. The House Report filed by the Judiciary Committee when Bayh-Dole was presented to Congress identified the need for legislation to address the "failure of American industry to keep pace with the increased productivity of foreign competitors."⁸ Bayh-Dole's passage was spurred in part by the President's Advisory Committee on Industrial Innovation, convened in 1978 to study the possibilities for encouraging increased productivity in the United States. Chief among the recommendations of the committee was a legislative proposal to promote industrial innovation through the commercial manufacture of federally-funded technologies. The legislative proposal led to Bayh-Dole.⁹

- III. *DOE has determined that exceptional circumstances exist because Bayh-Dole's objective of promoting U.S. manufacturing of federally-funded research is not fully being met with respect to energy efficiency, renewable energy, and advanced energy technologies.*

The current state of domestic manufacturing for energy efficiency, renewable energy manufacturing, and advanced energy technologies makes clear that the objective of promoting U.S. manufacture of U.S. inventions has not been adequately achieved.

⁵ 35 U.S.C. § 202(a)(ii); 37 C.F.R. § 401.3(a).

⁶ 37 C.F.R. § 401.3(b).

⁷ 35 U.S.C. § 200.

⁸ H.R. REP. 96-1307, 1, 1980 U.S.C.C.A.N. 6460, 6460 ("Need for the Legislation: Many analysts of the U.S. economy have warned that the roots of the current recession lie in a longer term economic malaise which arises out of a failure of American industry to keep pace with the increased productivity of foreign competitors.").

⁹ *Id.* at 6462. See U.S. DEPT. OF COMMERCE, ADVISORY COMMITTEE ON INDUSTRIAL INNOVATION: FINAL REPORT (Sept. 1979).

- a. *The U.S. has made significant investments in energy efficiency, renewable energy, and advanced energy technologies through DOE.*

The United States is a leader in the research and development of energy efficiency, renewable energy, and advanced energy technologies. America's leadership in research and development has been maintained in part due to DOE's significant and strategic investments in these types of technologies. The investments are made primarily through two DOE organizations: (1) the Office of Energy Efficiency and Renewable Energy (EERE) and (2) the Advanced Research Projects Agency-Energy (ARPA-E).

EERE works to strengthen the United States' energy security, environmental quality, and economic vitality in public-private partnerships. It supports this goal through (1) enhancing energy efficiency and productivity; and (2) bringing clean, reliable and affordable energy technologies to the marketplace. EERE partners with business, industry, universities, national laboratories, consumers, federal energy managers, inventors, states, and tribes to research, develop, and advance energy efficiency and renewable energy technologies. EERE funds R&D in programs that include building technologies, advanced manufacturing, vehicle technologies, weatherization technologies, bio-energy technologies, fuel cell technologies, geothermal technologies, solar energy technologies, and wind and water power technologies. EERE programs are focused on developing next-generation energy efficiency and renewable energy technologies and lowering the associated cost so that these technologies are broadly adopted and used across the United States. EERE has invested \$28.8 billion in energy efficiency and renewable energy technologies over the last ten years.

ARPA-E is dedicated to advancing energy technologies that have the potential to be transformational in the marketplace. ARPA-E works to identify high-risk, high-reward technical areas of interest to advance the agency's three mission areas: to enhance our nation's economic security, enhance our nation's energy security, and reduce energy-related emissions. ARPA-E enters into funding agreements with businesses, non-profit research organizations, universities, and national laboratories to research, develop and advance energy technologies that industry and other government programs are not likely to support because of technical and financial uncertainty.

In its first four years of operation, ARPA-E has invested more than \$777 million in advanced energy technologies, including approximately 285 research and development projects selected under 14 targeted FOAs and two open FOAs. In addition, ARPA-E has undertaken robust technology transfer and outreach activities to maximize the return on taxpayer investment through ARPA-E-funded technologies meeting their full commercial potential. Critical success in ARPA-E projects has spurred millions of dollars in follow-on private-sector funding, and a number of ARPA-E awardees have formed start-up companies as a result of ARPA-E funding.

- b. *Despite DOE's significant investment in energy efficiency, renewable energy, and advanced energy technologies research, development, and deployment, U.S. clean energy manufacturing lags behind other nations.*

Notwithstanding its leadership in research, development, and deployment of energy efficiency, renewable energy, and advanced energy technologies, the U.S. lags behind other nations in the manufacturing of those technologies. For example, China has 711 commissioned renewable energy manufacturing plants, five times as many as the U.S.¹⁰ China has an additional 13 partially commissioned plants and 122 under construction, for a total of 60% of all renewable energy plants on record.¹¹ The U.S. has only an additional 5 partially commissioned plants and 18 under construction.¹² More particularly, in the field of solar technologies, China currently has 523 fully commissioned solar manufacturing plants (44% of world total) and Germany has 96 (8% of world total), while the US has 87 (7% of world total).¹³ In the area of wind power technology, China has 109 wind manufacturing plants, or 41% of the world total.¹⁴ India has 34 wind manufacturing plants, or 14% of the world's total.¹⁵ The U.S. has only 23 plants, or 10% of the world total.¹⁶ According to consulting firm MAKE Consulting, U.S. manufacturing capacity to produce wind turbine components is insufficient, in many cases, even to keep up with U.S. demand, much less demand in foreign markets.¹⁷

- c. *Congress has expressly recognized the need to improve the level of U.S. manufacturing from DOE's investments in energy efficiency, renewable energy, and advanced energy technologies.*

In the accompanying House Report for the 2013 Energy and Water Appropriations Bill, the Committee on Appropriations identified the specific need for DOE to take a leadership role in improving U.S. manufacturing and domestic intellectual property retention:

The Department's research and development efforts yield several thousand patents and licenses each year, and taxpayers expect their support to result in commercialized technologies that benefit both American consumers and American industry. This expectation is not met when intellectual property that

¹⁰ *Industry Intelligence*, BLOOMBERG NEW ENERGY FINANCE, <http://www.bnef.com/> (last visited Feb. 12, 2013).

¹¹ *Id.*

¹² *Id.*

¹³ Bloomberg New Energy Finance, *supra* note 10.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ Whitehouse.gov "Promoting Clean, Renewable Energy: Investments in Wind and Solar" 2010 <http://www.whitehouse.gov/recovery/innovations/clean-renewable-energy#19>

was developed with public funding is commercialized only by foreign manufacturers. The Committee believes that intellectual property policies offer substantial opportunities to encourage domestic manufacturing without obstructing commercial efficiency, eroding the value of intellectual property, or under-mining free trade. The technology transfer efforts of the Department should support domestic manufacturing wherever possible and the Department must take proactive steps to ensure taxpayer-funded research and development result in domestic jobs and revenues.¹⁸

The Committee requested that DOE examine what authorities are available to control intellectual property, specifically including the Bayh-Dole Act.¹⁹

Congress has also emphasized the importance of U.S. manufacturing through the authorizing statute for ARPA-E. Specifically, Congress established ARPA-E through the passage of the America Competes Act of 2007 and, among other things, charged ARPA-E with accelerating “the research and development of manufacturing processes for novel energy technologies.”²⁰ As a reflection of Congress’s focus on U.S. manufacturing, ARPA-E responsibility regarding research and development of manufacturing was modified in the America Competes Reauthorization Act of 2010 to state the following: “research and development of advanced manufacturing process and technologies for the *domestic manufacturing* of novel energy technologies.” (emphasis added)²¹

It is critical that energy efficiency, renewable energy, and advanced energy technologies funded by DOE support manufacturing in the United States, particularly in view of the necessity of creating and maintaining jobs, including manufacturing jobs, in the U.S. The objectives of DOE’s research and development programs are to decrease the dependence of the U.S. on foreign energy supplies, enhance U.S. economic and energy security, increase the export of renewable generation equipment from the U.S., and ensure that the United States maintains a technological lead in developing and deploying next-generation energy technologies.²² A strong and vibrant domestic manufacturing base is needed for these objectives to be met. If the U.S. cannot maintain a manufacturing base for energy efficiency, renewable energy, and advanced energy technologies then it will remain dependent on foreign energy supplies and fail to achieve economic, energy, and national security.

¹⁸ H.R. Rep. No. 112-462 (May 2, 2012) at 81.

¹⁹ *Id.* at 82.

²⁰ America COMPETES Act, Pub. L. 110-69, § 5012 (2007).

²¹ America COMPETES Reauthorization Act of 2010, Pub. L. 111-358, § 904 (2010).

²² 42 U.S.C. § 16231(a).

IV. *EERE and ARPA-E will implement U.S. Manufacturing Plans to further promote the U.S. manufacture of inventions resulting from Federally-funded research.*

- a. *U.S. Manufacturing Plans may be required under a FOA and may be used as a basis for selection.*

Depending on the nature of the FOA, EERE and ARPA-E may require a U.S. Manufacturing Plan from each applicant of the FOA as part of its application. The U.S. Manufacturing Plan will represent the applicant's measurable commitment to support U.S. manufacturing of the technologies related to its EERE or ARPA-E funding agreement. The Plans shall apply equally to all types of applicants, including large businesses, small businesses, and non-profit organizations. Once incorporated into a funding agreement, the U.S. Manufacturing Plan will provide that it may be enforced, among other possible remedies, through forfeiture of rights to subject inventions. Except for the U.S. Manufacturing Plan proposed by the applicant and the enforcement mechanism, the patent rights of funding recipients granted by Bayh-Dole remain the same.

The nature and specificity of the applicants' U.S. Manufacturing Plans will vary based on the FOA and the program issuing the FOA. A higher level of specificity may be required in the U.S. Manufacturing Plans for technologies at higher technology readiness levels due to the greater certainty surrounding the commercialization of these technologies. U.S. Manufacturing Plans submitted in response to FOAs targeting technologies at high technology readiness levels or demonstration activities should include specific commitments to manufacturing in the U.S. For example, the U.S. Manufacturing Plan may specify products related to the funding agreement that will be manufactured in the U.S. or may identify investments in U.S. facilities to support product manufacture. U.S. Manufacturing Plans submitted in response to FOAs directed at technologies at lower technology readiness levels may have fewer specific manufacturing details and may focus more on licensing and other strategies to promote U.S. manufacturing.

The weight given to the U.S. Manufacturing Plans during the review and selection process likely will also vary based on the particular FOA and may be part of the evaluation or merit criteria. For example, the U.S. Manufacturing Plans may constitute 30% of the overall merit review score of the proposals. Alternatively, the U.S. Manufacturing Plans may be treated as a qualitative program policy factor, thereby allowing the selecting official to give preference to applications based on the U.S. Manufacturing Plans. FOAs directed to technologies at high technology readiness levels or demonstration type activities may require greater consideration of applicants' U.S. Manufacturing Plans.

Following selection and award negotiations, the U.S. Manufacturing Plan will be incorporated into the funding agreement. The funding agreement may further require that the

funding recipient submit annual reports to DOE (including after expiration of the funding period) to demonstrate compliance with the U.S. Manufacturing Plan.

The funding agreement terms and conditions will further provide for the remedies upon breach of the U.S. Manufacturing Plan. Individual FOAs, for example, may specify remedies such as repayment (including repayment with interest) of the DOE funding received under the funding agreement. Remedies may also include a loss of all rights to subject inventions by the funding recipient, including title reverting back to DOE if the funding recipient had title to the subject inventions.

- b. The standard patent rights clause will be modified to allow U.S. Manufacturing Plans to be enforceable and to serve as a basis for selection.*

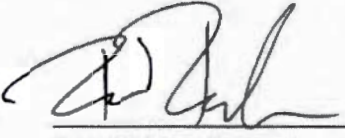
To the extent that a U.S. Manufacturing Plan is connected to subject inventions or that the remedy for a breach of a U.S. Manufacturing Plan is connected to subject inventions (e.g., title reverts back to DOE), the standard patent rights clause for Bayh-Dole entities will be modified accordingly. The modification would be necessary to implement and enforce the U.S. Manufacturing Plan proposed by the Bayh-Dole entity and was in part the purpose for selecting the Bayh-Dole entity's proposal.

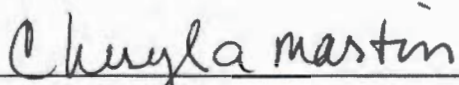
The funding recipient, including any Bayh-Dole entity, may request a waiver or modification of the U.S. Manufacturing Plan from DOE upon a satisfactory showing that the original U.S. Manufacturing Plan is no longer economically feasible and where the funding recipient can demonstrate an alternate net benefit to the U.S. economy notwithstanding the requested waiver or modification.

V. *Conclusion*

EERE and ARPA-E have determined that exceptional circumstances exist for energy efficiency, renewable energy, and advanced energy technologies. The U.S. Manufacturing Plan strategy described herein would better promote the objectives of Bayh-Dole by providing stronger support to U.S. manufacturing. Moreover, DOE is not imposing additional restrictions, requirements, or modifications from the standard patent rights clause beyond what is necessary to address the exceptional circumstances.

Any Bayh-Dole entity affected by this determination of exceptional circumstances has the right, and will be informed of that right, to appeal it.²³

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²³ See 35 U.S.C. § 202(b)(4); 37 C.F.R. § 401.4.



U.S. Manufacturing Plan

Introduction

This U.S. Manufacturing Plan provides the strategy by which the REMADE Institute will meet its goal of strengthening U.S. manufacturing competitiveness while engaging a wide range of stakeholders that may include foreign participants.

By delivering technology innovations that reduce primary material consumption in energy-intensive industries, developing pathways toward feed- stock “better than cost and energy parity” for key materials, and facilitating the widespread application of new enabling platform technologies across multiple industries, REMADE will directly transform the energy and emissions foot-print of U.S. manufacturing. Thanks to the lower cost structure, cheaper feedstock’s, and increased production capacity that REMADE innovations will enable, materials manufacturers in energy-intensive industries will find themselves more globally competitive.

Because the focus of the REMADE Institute is Manufacturing Readiness Level (MRL) 4 through MRL 7, and recognizing that it can often take two to three years for a technology to move from MRL 7 to full production, in addition to the specific commitments of the plan detailed below, the Institute will incorporate the following mechanisms into to its operations to deliver benefit to U.S. manufacturing.

Educational

- Provide education and tools to help manufacturers recognize currently available technologies to reduce energy intensity and material consumption.

Strategic Investment Planning

- Evaluate technologies identified in the DOE Bandwidth Studies for potential inclusion into the REMADE Institute technology roadmap.
- Engage key manufacturers as part of the annual strategic investment plan (SIP) update in order to increase awareness of and buy-in for the technology roadmap.
- Validate that topics selected for inclusion in the SIP will deliver benefits aligned to the six key technical performance metrics (TPMs) prior to release of the SIP.
- Obtain buy-in from manufacturers confirming their interest in investing in technologies the Institute is developing assuming project teams can meet their technology milestones.

Project Selection/Project Award

- Confirm details of the required project technology transition plans with project teams to identify potential gaps in the technology transition plans that will need to be addressed and ensure the plan is designed to deliver benefit to the U.S. economy.

Project Execution

- Perform Critical Technology Element (CTE)/ Technology Readiness Level (TRL) assessments for each REMADE project to facilitate active management of the Institute's product portfolio.
- Incorporate MRL transition agreements between project teams and pilot facilities/manufacturers for projects expected to achieve MRL6 or MRL7.

Technology Portfolio Management

- As part of the Institute's annual report, include a summary of the starting, current and pending MRL for each project and actively manage the portfolio to achieve Institute goals.
- Perform annual evaluations of Institute's success in selecting projects that deliver benefits aligned with the TPMs, managing project execution, transitioning technology.
- Engage the DOE and Institute members as part of the annual review process. Where performance gaps exist, modify technology management strategy to improve execution.

By focusing on technology transition considerations as part of the annual SIP update, project selection, and project execution, the Institute will ensure that there is sufficient buy-in for the technologies that are developed. Furthermore, projects will be positioned for further scale-up, delivering substantive impacts to Institute members and U.S. manufacturers.

Provide Education and Tools. As part of the DOE Bandwidth Studies, two categories of opportunities were called out: (a) State-of-the-Art (SOA) energy consumption, and (b) Practical Minimum (PM) energy consumption. SOA energy consumption identified the minimum amount of energy required assuming the adoption of the best technologies and practices available worldwide. Although these technologies are sufficiently mature that they would fall outside of the REMADE technology portfolio, as part of our engagement with U.S. manufacturers and the DOE, we will vigorously work to highlight those state-of-the-art energy consumption opportunities that represent adoption of the best technologies and practices available worldwide. By exposing U.S. manufacturers to these opportunities, many of which could occur independent of REMADE Institute activities, we will help facilitate the transformation of energy-intensive industries.

Leverage DOE Bandwidth Studies During Preparation of the SIP. The second category of opportunities called out in the DOE Bandwidth Studies is the practical minimum (PM) technologies, which are technologies currently under development worldwide. As part of the annual SIP update, the REMADE Institute will consider these as potential development topics to be pursued. Where appropriate, REMADE may consider pursuit of joint technology programs with organizations where development efforts are underway.

Engage Key Manufacturers During Development of the SIP. In 2010, there were about 15 BF/BOF steelmaking facilities operated by five companies and 112 EAF steelmaking facilities operated by

over 50 companies in the U.S. (U.S.GS 2012a). In addition, in 2010, there were nine primary aluminum smelter facilities in operation by five companies (U.S.GS 2011c). As part of the annual SIP update, the REMADE Institute will engage these companies, as well as others across energy-intensive industries, to identify barriers these manufacturers experience. Doing so may identify potential pathways to market for the technologies that the Institute will develop. Where these companies are not already members, this activity will provide an additional opportunity for recruitment.

These engagements will help the REMADE Institute understand where manufacturers' pain points are, how they experience the barriers called out in the REMADE FOA, and how technology that the Institute might develop will fit into their eco-systems, including their internal qualification processes and adoption by their customers.

Validate Alignment Between Potential SIP Topics and Six Technical Performance Metrics. To deliver impact to U.S. manufacturing, it is imperative that the REMADE Institute identify projects that will deliver substantive impact against the six TPMs called out in the FOA. Using the analysis framework and tools to be developed by the Systems Integration and Analysis node, the REMADE Institute will assess the potential impact of each concept being considered for inclusion in the SIP at the outset. As the SIP is translated into project calls, this same level of rigor will be applied.

Seek Technology Transition Partners Early. As difficult as it may be to traverse the so-called "valley of death", it is equally important to generate pull with the manufacturers that may adopt the technologies developed by the REMADE Institute. Rather than waiting until a project is near completion, the identification of technology partners must start as soon as projects are launched (or before). This approach of engaging with manufacturers will also provide the Institute an opportunity to identify where there is sufficient technology pull to warrant further action.

Clarify Technology Transition Plans Prior to Project Award. In the same manner that the REMADE Institute will develop consistent protocols, data harmonization, and evaluation frameworks for assessing the energy, material, and GHG impact of various technologies, the Institute will also apply a consistent framework for evaluation of the technology transition plans developed by proposal teams. With members across industry, academia, and the national labs, this will be an important part of actively managing the REMADE technology portfolio. Preliminary commercialization and/or transition plans will be part of the project selection criteria. Further, once a project is selected for award, the REMADE Institute will require presentation of a more detailed technology transition plan within the first three months of the project, as well as an update to this plan at project completion.

Conduct CTE/TRL Assessments. A critical part of Technology Readiness Assessments (TRAs) or Manufacturing Readiness Assessments (MRAs) is the identification of the CTEs for each project individually and for the institute as a whole. Equally important, there needs to be a consistent process for evaluating the TRL/MRL for each project.

Evaluation of the CTE/TRL for each project selected for award will enable the institute to

understand the critical technologies that are being developed and enable Institute leadership to understand how to disseminate the project results to other Institute members and how to scale or commercialize the technology. The REMADE Institute intends to initiate this activity at the outset.

Incorporate Manufacturing Readiness Level Transition Agreements. The determination of the MRL requires evaluation of many factors beyond technology. It also incorporates design, cost and funding, materials, process capability, quality, workforce, facilities, and manufacturing management. To insure development robust technology transition planning, industry frequently uses MRL transition agreements, which detail the requirements between the manufacturing technology developer and the customer. By going element by element through the MRL checklist, both parties identify the issues that each of them must address before the technology is ready to be transitioned. MRL transition agreements formalize these requirements early in a project, thereby giving each party sufficient time to prepare for a successful transition. The REMADE Institute will utilize transition agreements for all projects expected to reach MRL 6 or MRL 7 by the end of the project.

Actively Manage the Institute's Technology Portfolio. Similar to a business, the REMADE Institute's ability to achieve sustainability requires an active process for managing its current and future technology portfolio. Utilizing many of the elements described earlier in this Manufacturing Plan, the REMADE Institute will prepare an annual report that summarizes the following information about the project portfolio:

- Summary of the starting, current and pending MRL for each project
- Project management performance for each project, highlighting how well each project is performing relative to the project plan and evaluation of changes required for more effective project management
- Technology performance for each project, detailing whether the project is on track to deliver the benefits against the six TPMs
- Technology transition performance, reviewing whether technology transition plans are in place and how effectively technology transition is occurring
- Financial performance, highlighting how Institute funds are being allocated and whether adjustments need to be made to the current portfolio or future project calls
- Recommendations for actions the Institute will take to improve performance in the coming year.

Involve DOE and Institute Membership During Annual Reviews. To position the REMADE Institute for long-term success, the annual review process must also engage the DOE and institute membership. Their active involvement, best-practice sharing, and continued feedback on what the Institute can do more effectively will be critical.

The Plan

As a condition of membership, all members of the REMADE Institute are required to agree to this U.S. Manufacturing Plan, including the following standard U.S. Competitiveness Provision of the Department of Energy (DOE) Award. This plan will also be included in the award terms and conditions of any REMADE subcontract awards.

The Members agree that a goal of the REMADE Institute is to provide substantial benefit to the U.S. economy. In exchange for the benefits received through the Institute, the Member agrees to the following:

- (1) Products embodying Intellectual Property developed under the Institute (i.e. REMADE IP as defined in the REMADE Institute Intellectual Property Management Plan (IPMP)) shall be substantially manufactured in the United States; and
- (2) Process, services, and improvements thereof, which are considered REMADE IP as defined in the REMADE Institute IPMP shall be incorporated into the Member's manufacturing facilities in the United States either prior to or simultaneously with implementation outside the United States. Such processes, services, and improvements, when implemented outside the United States, shall not result in reduction of the use of the same processes, services, or improvements in the United States; and
- (3) Process, services, and improvements thereof, which are considered REMADE IP as defined in the REMADE IPMP, shall be initially demonstrated at the Member's manufacturing facilities in the United States or at a REMADE Institute testbed, prior to demonstrations that may take place outside the United States.

Exceptions to the above may be made for a specific REMADE Project where a Member cannot agree to the above provisions as written. Part of the process for finalizing the Project Agreement (and related project specific appendices, as applicable) (i.e. Subaward) for said REMADE project(s) will include developing legally-binding language, based on a Net Benefit Statement, that is acceptable to DOE and commits Member to provide some other benefit to the U.S. economy, which will then be made a part of the Project Agreement in lieu of the standard clause.

The following questions will assist a REMADE subrecipient in developing an acceptable Net Benefit Statement that will be reviewed and approved by DOE.

Net Benefits Statement Worksheet

Project Title:

Contact Person (e.g., Patent Counsel), phone number, and e-mail address:

Briefly describe your business model.

The description may include plans for manufacturing domestically and offshore. Briefly explain why you need to manufacture in the locations you discuss.

Future Benefits to the U.S. economy when creating and implementing Intellectual Property developed under the Subaward:

What work under Subaward do you plan to do in the U.S.?

Work may include manufacturing, R&D, administration. If you have built or will build a plant or R&D facility, what are the capacity and approximate number and type of employees? What is the timeframe of the U.S.-based work? Will you begin work in the U.S. right away, with later global diversification, or will the work be spread over several locations for the entire period of the Subaward? Will your efforts result in the creation of new U.S. jobs? If so, describe them.

Participant makes the following specific commitments to U.S. investment:

(You may list these in bullet or numbered form, or in paragraph form. Be aware that DOE will require specific commitments. You may include existing or planned facilities in the U.S. (if so, please describe what they'll be and how many and what type of employees they may have)). In addition, what is the projected timeline for building and operating the facilities?

How will your work under the Subaward further the U.S. development of the technology?

What commitments do you make to significantly reinvest profits from the Commercialization of the intellectual property resulting from the work under this Subaward in the U.S. economy?

What other benefits will your work have on the U.S. economy?

Such benefits may include one or more of the following:

- Direct or indirect investment in U.S.-based plant and equipment.
- Creation of new and/or higher-quality U.S.-based jobs.
- Enhancement of the domestic skills base.
- Further domestic development of the technology.
- Significant reinvestment of profits in the domestic economy.
- Positive impact on the U.S. balance of payments in terms of product and service exports as well as foreign licensing royalties and receipts.
- Appropriate recognition of U.S. taxpayer support for the technology; e.g., a quid-pro-quo commensurate with the economic benefit that would be domestically derived by the U.S. taxpayer from U.S.-based manufacture.
- Cross-licensing, sublicensing, and reassignment provisions in licenses which seek to maximize the benefits to the U.S. taxpayer.