

STATEMENT OF CONSIDERATIONS

REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY PHINIX, LLC (PHINIX) AND KINGSTON
PROCESS METALLURGY (KPM) UNDER DOE AWARD NO. DE-EE0007897;
W(A) 2021-004

REMADE is one of the Manufacturing USA Institute. REMADE works in partnership with industry, academia, and national labs to enable the research and development of technologies focused on reducing the embodied energy and carbon emissions associated with industrial-scale materials productions and processing. REMADE is funded and operated in part by DOE Cooperative Agreement No. DE-EE0007897 between DOE's Office of Energy Efficiency and Renewable Energy (EERE) Advance Manufacturing Office (AMO) and the Substantiable Manufacturing Innovation Alliance Corp. (SMIA).

PHINIX and KPM have requested a waiver of worldwide patent rights of the United States of America for all subject inventions made by KPM under a subaward agreement of REMADE for project 20-01-RR-4010 entitled "Selective Recovery of Elements from Molten Aluminum Alloys." The waiver is limited to subject inventions made by KPM under this subaward. Inventions made by PHINIX and SMIA are covered by the Bayh-Dole Act.

The subaward project is directed to improving aluminum recycling processes. The use of recycled aluminum saves more than 90% of the energy, as compared to primary aluminum. The objective of the subaward is to identify candidate materials for removing undesirable elements Fe, Cu, Si, Mn and Zn from molten-scrap based secondary aluminum melts and develop reactive extraction fluxes (REF) with the materials to be used for commercial plant trials.

PHINIX is the project lead and has partnered with KPM, a privately owned Canadian company. KPM will support generating data through modeling and experimental validation activities. KPM will also perform experimental validation of the removal of various elements from an aluminum melt at its Canadian facility. There is no U.S. facility available to provide these services that are critical to this project. AMO has approved the participation of KPM in the project including performing work outside of the U.S.

KPM provides contract research and development services under which the client typically owns the resulting intellectual property. Both KPM and PHINIX request this patent waiver for KPM so KPM can assign any patentable subject inventions to PHINIX. This is consistent with KPM's business model and it will better promote the licensing and commercialization of the resulting technology by consolidating ownership of the intellectual property to a U.S. company.

The REMADE cooperative agreement is for \$140 million with a 50% cost share requirement from 1/13/2017-1/11/2022 which may be extended for another two years. The anticipated cost for the subaward project is \$1,453,402 including \$650,467 of federal funds and \$802,935 of cost share or approximately 55% cost share. The performance period of the subaward project is approximately two years.

Since 2008, PHINIX has been developing and commercializing metal technologies in U.S. manufacturing plants and has invested \$2 million in the technology development. It has been involved in five EERE and ARPA-E funded projects in the past. It has partnered with U.S. companies to further pursue the technology of the subaward project if successful and is discussing possible collaboration with other U.S. companies as well. The project PI and PHINIX principal Dr, Subodh Das has extensive experience in developing and commercializing technologies, including as part of Logan aluminum start-up team through ARCO aluminum (now Tri-Arrows), a leading supplier of rolled aluminum sheet in North America. He has over 45 years of experience in the global metals and manufacturing industry.

PHINIX and KPM have agreed that this waiver shall be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, comparable to those set out in 35 U.S.C. 202-204. Further, the patent waiver will be conditioned on the U.S. Manufacturing Plan of REMADE that requires products embodying intellectual property developed under REMADE work to be substantially manufactured in the U.S. and process, services and improvements shall be incorporated in U.S. manufacturing facilities either prior to or simultaneously with implementation at facilities outside the U.S. A copy of the U.S. Manufacturing Plan is attached.

Referring to item 10 of the waiver petition, PHINIX does not believe the waiver would place it in a dominant position due to competing technologies being developed by different companies. Also, PHINIX is willing to license the technologies to all interested U.S. primary and secondary aluminum companies.

Considering the foregoing, it is believed that awarding this waiver will provide PHINIX with the necessary incentive to invest its resources in commercializing the results of the award in a manner that will make the above technology available to the public in the shortest time. Therefore, upon evaluation of the waiver petition and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.



Glen Drysdale
Patent Attorney
Golden Field Office

Date: _____

Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the United States and the general public will be best served by a waiver of patent rights of the scope determined above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of the award, where through such modification or extension, the purpose, scope, or cost of the award has been substantially altered.

CONCURRENCE:

APPROVAL:



Dr. Michael McKittrick
Director (Acting)
Advanced Manufacturing Office (AMO)

Brian Lally
Assistant General Counsel for Technology
Transfer and Intellectual Property

Date: _____

Date: 9.15.2021 _____

(t) U.S. Manufacturing 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.