

STATEMENT OF CONSIDERATIONS

REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY THE UNIVERSITY OF PORTSMOUTH UNDER NREL SUBCONTRACT NO. NEV-5-52031-01; W(A) 2018-009

The University of Portsmouth ("University"), located in the United Kingdom, has requested a waiver of patent rights of the United States of America for all subject inventions arising from its work under the above referenced subcontract number NEV-5-52031-01 under DOE Contract No. DE-AC36-08GO28308, the Management and Operating Contract between the U.S. Department of Energy and the Alliance for Sustainable Energy, LLC, as the Contractor for the National Renewable Energy Laboratory. The subcontract is entitled "Valorization of Non-Traditional Biological Substrates Utilizing Direct Manipulation of Biosynthetic Pathways Through Enzyme Engineering."

The overall objective of the work under the subcontract is to support ongoing efforts funded by EERE's Bioenergy Technologies Office, namely, the Biological Pyrolysis Oil Upgrading and Lignin Utilization projects. The technical goal is to identify, characterize, and engineer a key set of catabolic enzymes that currently represent rate limiting reactions in the depolymerization and catabolism of lignin and pyrolysis oil-derived substrates for the economic conversion of these "waste" streams to fuels and high-value chemicals. This work has resulted in an invention jointly made by NREL and the University and set forth in a U.S. provisional patent application 62/636,594, and a publication describing the production, characterization, and engineering of a polyethylene terephthalate (PET) degrading enzyme (PETase). The University seeks a waiver to cover this and other inventions that may be made under this subcontract.

The total anticipated cost of the subcontract is \$300,407, with the University providing \$220,407 in cost share, for a cost share percentage of 73%. The waiver is contingent upon the University maintaining the above cost sharing percentage over the course of the subcontract. The project period is four years, beginning July 2015 and ending July 2019.


As noted in the waiver petition, the University has invested significant resources to support this effort and plans to invest an additional £316,000 for a subsequent study with NREL, and has budgeted a further \$1,200,000 over the next five years to develop and commercialize this technology. The University is investing in the creation of a Centre for Enzyme Innovation, for which development of the PETase enzyme is a key priority. In addition to its financial investment, the University is investing staff resources to further develop this technology, including providing tenureship to a key member of the research staff and providing dedicated operational and commercialization staff resources. The Centre is actively engaging with multiple commercial partners, and is supported by the University's commercialization team, and utilizing the University's business engagement facilities and infrastructure.

The University has 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 University has agreed to the attached U.S. Competitiveness provision, paragraph (t). In brief, the University has agreed that products embodying a waived

invention or produced through the use of a waived invention will be manufactured substantially in the United States unless the University can show to the satisfaction of the DOE that it is not commercially feasible to do so.

Referring to item 10 of the waiver petition, the University does not believe the waiver would have an adverse effect on competition. The goal of this effort is to further develop and optimize the enzyme and its production so it can be further utilized by industry. Such further effort will require collaboration with numerous technology developers to enhance the enzyme's efficiency and ensure that it works in an industrial setting. The market for biodegradation offers multiple usage avenues and offers diverse solutions. Therefore, development of this intellectual property will drive competition and further developments within this area. Granting of this petition will therefore not hinder competition in the field or sector.

Considering the foregoing, it is believed that awarding this waiver will provide the University 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.


Julia Cook Moody
Deputy Chief Counsel for Intellectual Property
Golden Field Office

Date: 20 March 2019.

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:



Jonathan Male
Director
Bioenergy Technologies Office

Date: 03/20/2019

APPROVAL:



Brian Lally
Assistant General Counsel for Technology
Transfer and Intellectual Property

Date: 3/20/19

(t) U.S. COMPETITIVENESS

The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the 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 investment, etc. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.