

STATEMENT OF CONSIDERATIONS

REQUEST BY BAYER MATERIAL SCIENCE, LLC FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE AWARD NO. DE-EE0004571 W(A) 2011-007

The Petitioner, Bayer Materials Science, LLC (Bayer), has requested a waiver of domestic and foreign patent rights for all subject inventions arising from its participation under the above-referenced award entitled “River Devices to Recover Energy Using Advanced Materials,” which is an award under the Marine Hydrokinetic Technology (MHK) program. The goal of the MHK program is to sponsor the necessary research, development, test, evaluation, and demonstration of innovative water power technologies to effectively harness energy from waves, tides, currents, and ocean thermal gradients. The University of Pittsburgh is a subawardee to Bayer, and is not subject to this waiver petition.

The objective of this award is to develop engineering models and evaluate the performance of dielectric generators and develop a performance model for a potential hydrokinetic generator design. The generator, a Galloping Hydroelectric Energy Extraction Device (GHEED), will convert fast-moving river currents into an oscillating motion that will drive a dielectric elastomer generator (DEG). Bayer plans to 1) develop and design an oscillator, 2) characterize and model the performance of the DEG based on the oscillator design, and 3) create numerical models for construction of a system performance model and define operating capabilities for the GHEED. Accomplishing these three objectives will result in the creation of a model that can be used to fully define the operating parameters and performance capabilities of a generator based on the GHEED design. This information will be used in the next phase of product development, which will be the creation of an integrated laboratory scale generator to confirm model predictions.

The total anticipated cost of the agreement is \$445,727, with Bayer cost sharing \$153,839, or 35%, and the University of Pittsburgh cost sharing \$51,888¹. The total cost share between Bayer and the University is \$205,727, or 45%. This waiver is contingent upon Bayer maintaining the above cost share percentage.

As indicated in more detail in its petition, Bayer is a world leading manufacturer of polyurethane materials. Its headquarters and R&D center are located in Pittsburgh, Pennsylvania, with production facilities in Baytown, Texas, Charleston West Virginia, and New Martinsville, West Virginia. Bayer has a long history of innovation that supports growth of its U.S. manufacturing base. Bayer has recently acquired Artificial Muscle, Inc. (AMI), a leader in the development of electroactive polymers (EAPs). In addition to this acquisition, Bayer has a significant development program for EAPs at its research facilities in Leverkusen, Germany. AMI currently owns or has exclusive licenses to 46 issued patents and dozens of patent applications in the area of electroactive polymers, many of which relate to energy generation. Including the employees at AMI, Bayer employs over 30 people in the EAP field, 10 of whom devote the majority of their time to energy harvesting. Their work represents an annual

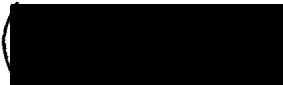
¹ Bayer based its petition on estimated cost share. The figures above are the actual budget figures and are slightly different from those given in Bayer’s response to Question 3 of its petition.

investment of approximately \$3 million dedicated to energy harvesting with EAP. Furthermore, Bayer and SBM Offshore, the management holding company of a group of international companies that supply offshore energy, have entered into an agreement to develop a flexible wave converter using EAP technology.

Bayer 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, Bayer has agreed to the U.S. competitiveness provisions as attached to this Statement. In brief, Bayer has agreed that products embodying intellectual property developed under this agreement shall be substantially manufactured in the United States, and that Bayer will not license, assign, or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements.

Referring to item 10 of the waiver petition, granting this waiver is not anticipated to have any adverse impact on competition. According to the petition, there will be competition in the marketplace from other hydrokinetic designs. Success in the marketplace will be determined by the cost of energy that can be produced by a particular device. Development of the design envisioned in this agreement is not expected to give Bayer an unfair advantage among potential competitors. Alternatives to the proposed technology will always exist.

Considering the foregoing, it is believed that granting this waiver will provide Bayer with the necessary incentive to invest its resources in commercializing the results of the agreement 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
Patent Counsel
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 best be 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 agreement, where through such modification or extension, the purpose, scope, or cost of the agreement has been substantially altered.

CONCURRENCE:

[Redacted signature]

Mark Higgins
Program Manager
Office of the Wind and Hydropower
Technologies Program

Date: [Redacted]

APPROVAL:

[Redacted signature]

John T. Lucas
Assistant General Counsel for Technology
Transfer and Intellectual Property

[Redacted signature]

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 DOE that it is not commercially feasible to do so. In the event 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 further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees. Should the Contractor or other such entity receiving rights in any waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in any waived invention is suspended until approved in writing by DOE.