

## STATEMENT OF CONSIDERATIONS

### REQUEST BY 3M COMPANY ("3M") FOR AN ADVANCE WAIVER OF PATENT RIGHTS UNDER DOE AWARD NO. DE-EE0002980; W(A) 2012-010

3M has requested a waiver of patent rights of the United States of America for all subject inventions arising from its participation under the above referenced award entitled "An Industry/Academe Consortium for Achieving 20% Wind by 2030 Through Cutting-Edge Research and Workforce Training." The University of Minnesota is the prime awardee. 3M is a subawardee of the University of Minnesota.

The purpose of the award is to develop a combination of full-scale and laboratory-scale wind energy research facilities that will allow the cost-effective development and then real-world testing and demonstration of a wide range of wind turbine technologies and the related collection of field-scale data sets for validating computational models, and then using these facilities to develop a research agenda driven by the industry's need for more efficient and reliable wind turbines. Under its subaward, 3M will provide riblet film for wind energy research facilities, and to test anti-soiling properties. The purpose of the subaward is to develop and test passible flow control techniques based on riblets and vortex generators to maximize the recovery of potential energy at a given site by increasing peak efficiency and broadening the operating envelope of the rotor. In addition, research efforts will attempt to maximize the recovery of potential energy at a given site by reducing turbine down time and mitigate the reduction in capacity factors caused by ice accumulation on blades, and increase wind plant safety by mitigating ice throws.

The total anticipated cost of the project is \$7,981,677 with a total cost share of \$3,077,816. In the subaward between the University of Minnesota and 3M, the subaward amount is \$495,000, with 3M's cost share of \$123,750<sup>1</sup>, or 25%. This waiver is contingent upon 3M maintaining, in aggregate, a cost sharing percentage of at least 25% during the course of the grant. The period of performance for the grant is July 1, 2010 through December 31, 2012.

As noted in the waiver petition, 3M has significant technical competence in the field riblet films, which help reduce aerodynamic drag and are therefore useful in the area of wind energy. 3M has many patents covering the processes for making and using riblet films. 3M also has experience in anti-soiling and anti-icing technologies, in microstructured materials, and in commercialization of various products based on these technologies. 3M's experience in these technologies facilitated 3M's development of experimental riblet films that reduce turbulence and drag. Under this award, 3M will explore the applications of novel durable films to increase the wind turbine efficiency by reducing drag and mitigating icing or soiling to reduce maintenance needs.

3M has made multi-million dollar investments in capital equipment for film manufacturing for many commercial applications related to riblet film technology. In late 2008, 3M established a Renewable Energy Division to focus on industry needs and opportunities. Since mid-2007, 3M has invested in a manufacturing capacity and commercialization efforts to bring film products to renewable energy markets. At the present time, 3M maintains multiple

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<sup>1</sup> The budget has been updated since the petition was filed, and the figures herein are current.

technical efforts involving over 15 skilled persons working on multiple film products for this market.

3M 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, 3M has agreed to the attached U.S. Competitiveness provision, paragraph (t). In brief, 3M 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 3M 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, granting this waiver is anticipated to have a minimal effect on limiting competition. Competitors already sell a variety of anti-soiling and anti-icing products. Therefore, other known solutions are available to compete with those developed under this award.

Considering the foregoing (*e.g.*, 3M's technical experience and competence and past and on-going investments in this technology), it is believed that granting this waiver will provide 3M with the necessary incentive to invest its resources in commercializing the results of the grant 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: 3/19/12

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 grant, where through such modification or extension, the purpose, scope, or cost of the grant has been substantially altered.

CONCURRENCE:

APPROVAL:



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Program Manager  
Wind and Hydropower Technologies  
EE-2B

*J. Lucas*  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

Date: 3/2/2013

Date: 4/3/2013

(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.