

## STATEMENT OF CONSIDERATIONS

REQUEST BY PPG INDUSTRIES, INC. (PPG) FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE AWARD NO. DE-FG36-08GO18033; W(A)2008-008

The Petitioner, PPG, has requested a waiver of domestic and foreign patent rights for all subject inventions arising from its participation under the above referenced cooperative agreement entitled "High-Value Mirrors (HVM) for Concentrating Solar Power (CSP) Applications."

The objective of the agreement is to develop and commercialize large-area mirrors that are superior in value, in terms of cost and performance, to existing mirrors available on the market today. This objective will be accomplished through research and development activities into alternate materials, structures, and fabrication processes for reflector components as described in Topic 3 of DOE's Funding Opportunity Announcement. To successfully produce mirrors with high performance targets requires that this project deliver a high transmission glass for the superstrate, optional functional layers that deliver the performance required, an inorganic coating that protects the functional layers from chemical attack, an organic coating that protects the functional layers from mechanical attack, and a cost-effective fabrication process.

The total anticipated cost of the agreement is \$3,638,503 with Petitioner providing 39.9% cost share, totaling \$1,453,038. This waiver is contingent upon the Petitioner maintaining, in aggregate, the above cost sharing percentage over the course of the agreement.

Petitioner is recognized worldwide as a leader in flat glass manufacturing technology, has been manufacturing glass for over one hundred years, and is the largest flat glass manufacturer in North America. Currently, Petitioner operates nine lines in six different locations in the U.S. Two plants, located in Wichita Falls, Texas and Fresno, California, are well positioned to produce glass for CSP system installations in the southwest. The Petitioner has vacuum coating capabilities consisting of five lines located in the U.S. in three plants. Petitioner also has a proven record in design, development, commercialization, and mass production of large-area silver-based films for low-emissivity coatings on glass used in architectural applications. The architectural market has critical specifications regarding the desired optical spectra to achieve the color demanded by home and commercial building owners. To address this need, Petitioner has developed expertise in modeling and fabrication of optical interference coatings. This expertise was used to design and produce high-reflectivity mirrors.

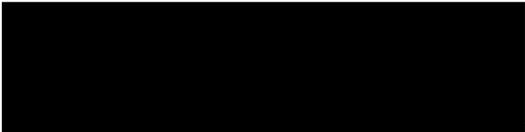
Petitioner has a long history and continues to develop competencies in the areas of glass melting and forming, properties control through glass chemistry, functional coatings, coating design and fabrication for optics and solar control, lamination, tempering, complex bending, insulated glass unit technology, and surface treatments for hydrophobic and hydrophilic functionality. Petitioner's Performance Glazing R&D group has nearly 30 years experience in depositing functional coatings with both chemical vapor deposition and magnetron sputtered vapor deposition technologies. In those technologies, areas of development have included

discovery of new materials and materials combination, precursor and targets fabricated from these materials, new and improved methods for depositing these materials in a uniform and controlled manner over large areas, applying optical physics to the design of thin film structures to control the optical and other functional properties of those coatings, and scaling, transferring, and support for these products and processes into manufacturing. Petitioner holds many patents in the areas of glass, glass manufacturing, and coating for glass.

Petitioner 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, Petitioner has agreed to the U.S. competitiveness provisions as attached to this Statement. In brief, Petitioner has agreed that products embodying intellectual property developed under this agreement shall be substantially manufactured in the United States, and that Petitioner 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, in granting this waiver, Petitioner may be able to reduce solar system production costs over the long term, improving the marketplace economics and spurring the development of similar and competing technologies. Petitioner historically has made new technologies available to the marketplace via licensing, partnering, through vertical integration, and working with suppliers, customer, and competitors. Also, any anti-competitive effects of the waiver would be reduced by competitive technologies. Petitioner's major competitors are also carrying out research and development on the economically viable applications which maintain a competitive environment.

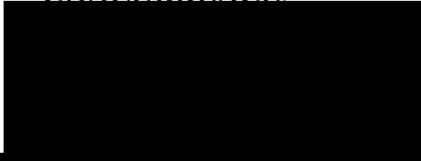
Considering the foregoing, it is believed that granting this waiver will provide Petitioner with the necessary incentive to invest its resources in commercializing the results of the agreement in a manner that will make the above technology available to the public in the shortest time. Therefore, upon 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 Attorney  
Golden Field Office

Date: July 28, 2008

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:



John Lushetsky, Program Manager  
Solar Energy Technology  
EE-3A

Date: 8-2-08

APPROVAL:



Paul A. Gottlieb  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

Date: 8-7-08

## **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.