

STATEMENT OF CONSIDERATIONS

REQUEST BY SCHOTT NORTH AMERICA, INC. (SCHOTT) FOR AN ADVANCE
WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE GRANT NO.
DE-FG36-07GO17001; W(A)-08-007

The Petitioner, Schott, has requested a waiver of domestic and foreign patent rights for all subject inventions arising from its participation under the above referenced grant entitled "Hydrogen Production from Biomass Gasification." The Petitioner will be collaborating with the Gas Technology Institute (GTI), a nonprofit, NETL, Arizona State University, and Wah-Chang, none of which are subject to this waiver request.

The objective of the grant is to determine the technical and economic feasibility of using a membrane-based gasifier to produce hydrogen from biomass. The project team members will evaluate potential membranes (metal, ceramic, and glass) suitable for high temperature, high pressure, and the harsh environment of a biomass gasification system. The best performing membranes will be selected for preliminary reactor design and cost estimates. The overall economics of hydrogen production from this new process will be assessed and compared with traditional hydrogen production technologies from biomass. The final deliverable of the project will be a gasification membrane reactor system that is expected to meet or exceed DOE's cost target for hydrogen production from biomass. This will be demonstrated by a bench scale gasification membrane reactor that can process approximately 2-10 kg/hr of woody biomass for hydrogen production. Petitioner's contributions to this effort will be in the area of glass-ceramic membrane development and optimization of the selected candidate membranes.

The total anticipated cost of the grant is \$ 3,396,186, with DOE funds totaling \$2,396,949, and a total non-federal share of \$679,237. Schott's subaward is \$358,803, with Schott providing a 20% cost share of \$75,000, including material, equipment, and labor¹. This waiver is contingent upon the Petitioner maintaining the above cost sharing percentage over the course of the grant.

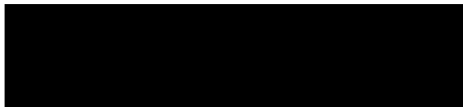
As noted in its waiver petition, Petitioner is one of the world's largest and oldest producers of technical and optical glasses and glass-ceramics for a wide range of applications. Petitioner has been awarded hundreds of patents over many decades covering such topics as glass formulations, glass and glass-ceramic processing, and application-specific disclosures. Petitioner has a well-established commercial position in the specialty glass market and manufactures and sells a wide variety of glass and glass-ceramic articles, including low thermal expansion glass-ceramics for countertops, fire glazing, and telescope mirror substrates. In addition, crystallizable glasses have been developed for electronic applications. The application for this particular grant is novel, however. At present, there are no existing high-temperature stable glass-ceramic membranes appropriate for hydrogen separation. The glass-ceramic development that is the subject of this grant will be performed using Petitioner's equipment.

¹These figures are based on the final agreement, so they differ somewhat from the figures in the waiver petition, which were based on pre-award cost estimates.

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 grant 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, granting this waiver is not anticipated to have any adverse impact on competition because it will not substantially change Petitioner's position in the marketplace. Further, the success of Petitioner and its partners, under this grant, can be expected to stimulate further investment and competition in this technology.

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 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.

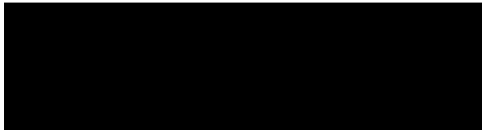


Julia Cook Moody
Patent Attorney
Golden Field Office

Date: 12 June 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 grant, where through such modification or extension, the purpose, scope, or cost of the grant has been substantially altered.

CONCURRENCE:



Jo Ann Milliken, Program Manager
Hydrogen, Fuel Cells & Infrastructure
Technologies
EE-2H

APPROVAL:



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

Date:

6/25/08

Date:

6-26-08

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.