

**STATEMENT OF CONSIDERATIONS**

REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY  
PRAXAIR, INC., UNDER DOE AWARD NO. DE-FE0023543; W(A)2016-  
006, CH-1764

Petitioner, Praxair, Inc., has requested a waiver of: (a) domestic and foreign patent rights for all subject inventions conceived solely by Petitioner and (b) Petitioner's undivided interest, based on its employee's contributions, to joint domestic and foreign patent rights for all subject inventions conceived, arising under the above referenced award.

The award entitled "Oxygen Transport Membrane (OTM)-Enhanced Coal Syngas for Carbon Capture Power Systems and Fuel Synthesis Applications" is directed to the development of a process configuration to integrate Petitioner's gas transport membranes into fossil energy driven power plants. In particular, the aim of the research under the award is to enhance the quality of syngas produced by gasification, reduce the cryogenic oxygen demand of a plant, allow for coal and natural gas integration, and facilitate CO<sub>2</sub> capture.

The total anticipated cost of the award is \$9,850,000.00 including a cost share contribution of \$5,000,000.00, or about fifty-one percent (51%) of the total cost of the work under the award. This waiver is contingent upon Petitioner maintaining, in aggregate, the above cost sharing percentage over the course of the award. The period of performance is from 1 October 2014 to 30 March 2017, with a pending request for extension through 31 December 2017.

Referring to items 5-9 of the waiver petition, Petitioner has engaged in several decades of research and development of steam driven power production. Petitioner has previously performed as a subcontractor in two DOE cost share programs directly related to the present award, including providing more than \$1,000,000 in cost share. Petitioner has noted that granting of the petition will more effectively promote the continued development and utilization of any subject inventions. Accordingly, Petitioner has significant experience in developing technology within this field and will continue to further develop the contracted work.

Petitioner has agreed that this waiver will be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, set out in 35 U.S.C. 202-204. Further, Petitioner has agreed to the attached U.S. Competitiveness provision (paragraph (t)). The Petitioner further has agreed to the attached revised paragraph (h) to submit annual reports on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by Petitioner and any of its licensee or assignees. If sold or transferred this reporting obligation will pass on to the buyer or transferee.





Petitioner 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 Petitioner can show to the satisfaction of the DOE that it is not commercially feasible to do so. Petitioner has further agreed to make the above conditions binding on any assignee or licensee or any entity otherwise acquiring rights in the waived inventions, including subsequent assignees and licensees. Should Petitioner or other such entity receiving rights in a waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived inventions is suspended until approved in writing by DOE.

As set out in the attached waiver petition, Petitioner has also requested a waiver of patent rights in the subject inventions of its lower tier large business subcontractors. This waiver contemplates that the parties will allocate title or other rights to inventions among themselves as they deem appropriate during the course of their association consistent with the terms of this waiver. This waiver will only apply to such subcontractor(s) who provide a letter to DOE acknowledging their right to ask for a waiver. This waiver shall not impact the rights of those parties subject to Public Law 96-517, as amended, nor shall it grant any rights in inventions made by employees of the National Laboratories.

Referring to item 10 of the waiver petition, granting this waiver will not have an adverse impact on competition. Numerous companies participated in the initial multiple competitive award, indicating competitive interest in the specific research and design aim of this award. Additionally, the steam driven power production field as a whole is the focus of significant research from competitors of Petitioner. Thus, granting the Petition will not hinder competition in the field.

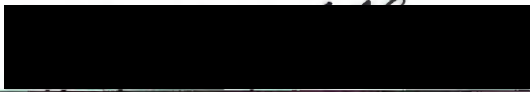
Considering the foregoing, it is believed that granting this waiver will provide Petitioner with the necessary incentive to invest its resources in the commercialization of the results of the agreement in a fashion which will make the technology available to the public in the shortest practicable time. 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.

  
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Timothy L. Harney  
Patent Attorney  
Intellectual Property Law Division  
DOE Chicago Office  
Date: September 19, 2017

  
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Michael Dobbs  
Deputy Chief Counsel  
Intellectual Property Law Division  
DOE Chicago Office  
Date: September 22, 2017


Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the U.S. and the general public will best be served by a waiver of patent rights of the scope described above, and therefore the waiver is granted. This waiver will 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:

  
\_\_\_\_\_  
Angelos Kokkinos  
Director of Office of Advanced  
Fossil Technology Systems

Date: Nov. 6, 2017

## APPROVAL:

  
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Brian J. Lally  
Assistant General Counsel for Technology  
Transfer and Intellectual Property, GC-62

Date: 11/8/17

## WAIVER ACTION - ABSTRACT

W(A)-2016-006

<u>REQUESTOR</u>	<u>CONTRACT SCOPE</u>	<u>RATIONALE FOR DECISION</u>
Praxair, Inc.	The project scope will encompass techno-economic process analysis to investigate the value proposition of Oxygen Transport Membranes in an Integrated Gasification Combined Cycle power plant.	Praxair is the largest domestic oxygen producer and technical leader of applied combustion technology. Praxair has an active worldwide IP portfolio of over 2,600 granted patents and 1,900 pending patents. Granting of the petition will more effectively promote the continued development and utilization of any subject inventions.



(f)(7)(iii) A copy of each patent issued by the U.S. Patent and Trademark Office on subject inventions.

(h) Reporting on utilization of subject inventions.

The Contractor agrees to submit annual reports on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor and any of its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceedings undertaken by DOE in accordance with paragraph (j) of this clause. To the extent data or information supplied under this paragraph is considered by the Contractor, its licensee or assignee to be privileged and confidential and is so marked, DOE agrees that, to the extent permitted by law, it shall not disclose such information to persons outside the Government.

(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.