

STATEMENT OF CONSIDERATIONS

REQUEST BY LINDE, INC FOR AN ADVANCE WAIVER OF PATENT RIGHTS TO INVENTIONS MADE UNDER COOPERATIVE AGREEMENT DE-FE0007453; W(A)-2012-016 ; CH-1658

Linde, Inc. (Linde), requests an advance waiver of domestic and foreign patent rights for all subject inventions made under the above cooperative agreement for work entitled, "Slipstream Pilot-Scale Demonstration of a Novel Amine-Based Post-Combustion Process Technology for CO₂ Capture from Coal-Fired Power Plant Flue Gas". Under this agreement, Linde, along with BASF, Santee Cooper, Southern Company, and the Electric Power Research Institute (EPRI), as well as Linde Engineering Dresden GmbH will demonstrate the Linde-BASF post-combustion capture technology by incorporating BASF's novel-amine-based process in a 1 MW slipstream pilot plant and achieving at least 90% carbon dioxide (CO₂) removal from coal-derived flue gas while demonstrating significant progress toward achievement of the DOE target of less than a 35% increase in the levelized cost of electricity (LCOE). To accomplish this, the team will design, build, and operate the pilot plant at a coal-fired power plant host site providing the flue gas as a slipstream. The initial task will be to perform a techno-economic assessment of a conceptual 550 MWe pulverized coal-fired power plant incorporating the new amine-based post-combustion CO₂ capture technology in development by Linde and BASF. Further details of the project are provided in response to question 2 of the attached waiver petition. The waiver is to apply to Linde's and its subcontractors' employee subject inventions, except inventions made by subcontractors eligible to retain title to inventions pursuant to P.L. 96-517 as amended.

The work under this subcontract is expected to take place from December 1, 2011 through November 30, 2015, at a total cost of \$18,490,456. Linde will provide \$3,698,091 or 20% cost share. DOE will provide the remaining 80% or \$14,792,365.

In response to question 5 of its waiver petition, Linde and BASF state that the current post-combustion capture technology in development is an extension of several gas treatment process technologies that BASF has developed over the past decade and Linde has optimized the process application in various scales including very large commercial plants. BASF gas treatment technology is applied in over 300 reference plants on the globe and captures more than 100 million tons of CO₂ annually. Linde has been involved in the process development and optimization of a number of gas treatment technologies using physical and chemical solvents. BASF and Linde have attached relevant patents and patent applications (Exhibits 1 and 2 to the petition) evidencing their technical capabilities in the subject matter of this project. In addition, several joint publications of Linde and BASF related to post-combustion CO₂ capture technology are attached as Exhibit 3. Linde has demonstrated its technical competency in the field of gas treatment processes.

In response to question 10 of its waiver petition, Linde states that grant of the waiver will not have an adverse effect on competition. The technology area of post-combustion capture is represented by a number of companies, including Fluor, Mitsubishi, Alstom, and Siemens. In addition, a large number of post-combustion capture technologies based on solvents, sorbents and membranes are in various development stages. Due to the large number of players, it is not expected that a single technology provider can achieve a preferred or dominant position in this market. Therefore grant of the waiver will have a positive effect on competition and market concentration.

This advance waiver of the Government's rights in inventions is subject to the usual advance patent waiver licensing provisions, and the government license, march-in rights, and preference for U.S. industry provisions set out in 35 U.S.C. 202-204. The contractor agrees to submit copies of issued U.S. Patents and annual reports every 12 months from the date of the contract 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 licensee or assignees.

The advance patent waiver also includes the attached U.S. Competitiveness clause (paragraph t) which requires products embodying any waived invention or produced through the use of any waived invention be manufactured substantially in the United States unless the participant can show to the satisfaction of DOE that it is not commercially feasible to do so. The contractor further agrees to make the above condition binding on any assignee, licensee or other entity 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 the waived invention is suspended until approved in writing by DOE.

In view of the cost sharing and other equities between Linde and its subcontractors, it is anticipated that the parties will develop an appropriate allocation of patent rights among the participants to facilitate the expeditious development of the technology forming the subject matter of the agreement. Accordingly, DOE will waive title to all subject inventions made by Linde's employees and its subcontractors' employees, regardless of tier, except inventions made by subcontractors eligible to retain title pursuant to P.L. 96-517, as amended, or National Laboratories, to Linde or its subcontractors, as mutually agreed by the parties. Except as otherwise approved in writing by DOE Patent Counsel, a party's acceptance of a subcontract under this agreement, at any tier, shall constitute Linde's certification that it has provided that party with a copy of this Statement of Considerations and that party's notice to DOE that it accepts the terms and conditions of this advance waiver. Furthermore, a subcontractor has the right to request a waiver from DOE in its own right, rather than having to pass through the contractor to acquire title to subject inventions. Additionally, subcontractors who receive title under this waiver shall notify DOE Patent Counsel in writing of such disposition of patent rights.

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 Part 784, all of which have been considered, it is recommended that the requested waiver be granted.

Mark

Dvorscak

Mark P. Dvorscak
Deputy Chief Counsel
Intellectual Property Law Division

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Date: April 12, 2012

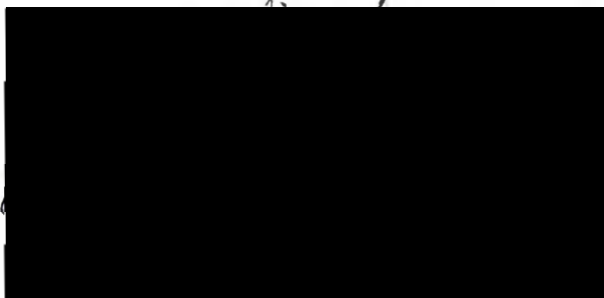
Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the United States and the general public will best be served by a waiver of patent rights of the scope described above, and therefore the waiver is granted. This waiver will not apply to any modification or extension of the cooperative agreement, where through such modification or extension, the purpose, scope or cost of the cooperative agreement has been substantially altered.

CONCURRENCE:



Mark Ackiewicz
Division of Advanced Energy Systems
Office of Fossil Energy, FE-221

Date: 5/31/2012



APPROVAL:



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

Date: 6/6/2012

(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.

(h) Reporting on utilization of subject inventions.

The Contractor agrees to submit annual reports every 12 months (or such longer period as may be specified by the Patent Counsel) from the date of the contract 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 licensee or assignees. Such reports may 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. However, DOE agrees to permit periodic discussions with the Contractor, on the possibility of alternative report contents or reporting schedules which the DOE deems sufficient to provide the necessary information on utilization of the subject inventions. 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. The Contractor agrees to submit the annual reports for (10) ten years following the completion of the project period or until the patent is allowed to lapse or expire, whichever comes first. If sold or transferred this reporting obligation will pass on to the buyer or transferee for completion of the ten year period of time.