

STATEMENT OF CONSIDERATIONS

REQUEST BY ADA ENVIRONMENTAL SOLUTIONS, FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN INVENTION RIGHTS IN SUBCONTRACTOR SHAW ENERGY & CHEMICALS, UNDER DOE COOPERATIVE AGREEMENT NO. DE-FE0004343, W(A)-2011-048, CH-1625

The Petitioner, ADA Environmental Solutions, LLC (ADAES) was awarded this cooperative agreement for the performance of work entitled, "Evaluation of Solid Sorbents as a Retrofit Technology for CO₂ Capture". ADAES is a small business, having the right to elect title to its inventions pursuant to the "Patent Rights-Small Business Firms and Nonprofit Organizations" clause of its contract. It is petitioning for rights to inventions of its large business subcontractor, Shaw Energy and Chemicals. A letter from Shaw agreeing to this disposition of invention rights is attached to the petition. According to the response to question 2 of the waiver petition, the overall objective of this project is to validate solid sorbent-based post combustion CO₂ capture through slipstream pilot testing. Results from pilot testing will be used to develop a preliminary full-scale commercial design in preparation for demonstration at the next scale, where the detailed engineering for a full-scale commercial system can be directly developed. The goals of the program are to achieve a 90% CO₂ capture a less than a 35% increase in COE, and be available for commercial deployment beginning in 2020.

The total estimated cost of the cooperative agreement is \$18,750,000 with DOE providing 80% of the cost, or \$15,000,000. ADAES is cost sharing 20% or \$3,750,000. The period of performance is from October 1, 2010 through December 31, 2014.

In its response to question 5 of the attached waiver petition, ADAES described its and Shaw's technical competence in the field of retrofitting technology for CO₂ capture. It states that Shaw has technical competence in several areas including application of fluidized-bed technology to chemical reactor designs; process designs for various chemical processes (e.g. Fisher-Tropsch Synthesis, Iron Oxide Reduction); design of heat recovery and temperature control systems; catalyst and particle testing and adaption for fluidized bed reactors; and, solids transport and storage systems. ADAES lists its technical expertise in application of solid sorbents for various gas separation technologies; process design and application of multiple emission control technologies for flue gas streams derived from combustion of fossil fuels, sorbent development and techno-economic assessment of solid sorbent applications. Further descriptions of Shaw's and ADAES' technical competencies are listed in response to question 2 of the petition. ADAES' response demonstrates its technical competency in the field of technologies for CO₂ capture.

In its response to question 10 of the attached waiver petition, ADAES states that grant of the waiver is not expected to reduce competition or concentrate the existing market. The entire arena of reduction of carbon dioxide from coal burning power plants is an emerging market requiring new technology to achieve the goals. There are several technologies currently under development that would potentially compete with the technology being developed under this project. The effect on competition is unlikely to constrict prices, service or availability as a world-wide competition will emerge as success is achieved in the capability of controlling carbon dioxide in coal burning power plants. Therefore grant of the waiver will have a positive effect on competition and market concentration.

The subject contract will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12, wherein ADAES has agreed to the provisions of 35 U.S.C §§ 202, 203, and 204. ADAES agrees to submit copies of issued U.S. Patents resulting from waived

obtaining such utilization that are being made by ADAES or any of its licensees or assignees. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which ADAES agrees to substantial U.S. manufacture of subject inventions (attached hereto). Additionally, ADAES agrees not to transfer subject inventions to any other entity unless that other entity agrees to these same requirements.

Considering the foregoing, it is believed that granting the waiver will provide the Petitioner with the necessary incentive to invest resources in the commercialization of the results of the agreement in a fashion which will make the agreement's benefits available to the public in the shortest practicable time. In addition, it would appear that grant of the above requested waiver would not result in an adverse effect on competition nor result in excessive market concentration. Therefore, 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, as set forth above, be granted.

MPD



Mark P. Dvorscak
Deputy Chief Counsel
Office of Intellectual Property Law

Date: *September 30, 2011*

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

CONCURRENCE:



Mark Ackiewicz, FE-223
Division of Carbon Capture &
Storage Research
Office of Fossil Energy

Date: *1/18/2012*

APPROVAL



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

Date: *1/18/2012*

(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.