

STATEMENT OF CONSIDERATIONS

ADVANCE CLASS WAIVER OF PATENT RIGHTS FOR TECHNOLOGY DEVELOPED UNDER THE INDUSTRIAL TECHNOLOGIES PROGRAM (ITP) FUNDING OPPORTUNITY ANNOUNCEMENT, "RECOVERY ACT: ENERGY EFFICIENT INFORMATION AND COMMUNICATION TECHNOLOGY", DE-FOA-0000107, W(C) 2009-014

This advance waiver will expedite implementation of the American Recovery and Reinvestment Act of 2009 ("Recovery Act") and is intended to apply to inventions of all current and future recipients and subrecipients awarded under the Funding Opportunity Announcement (FOA), "*Recovery Act: Energy Efficient Information and Communication Technology*," regardless of tier, except recipients eligible to obtain title pursuant to P.L. 96-517, as amended, and National Laboratories.

The Department of Energy (DOE) is providing federal assistance under its Industrial Technologies Program (ITP) to cost-effectively improve the energy efficiency of the U.S. economy by developing innovative technologies that, when deployed commercially, would reduce the energy intensity of information and communication technology (ICT) systems and facilities. The energy used by our nation's vital telecommunications and data centers is growing at an alarming rate. As information technology and communications services continue to converge, the data center and telecommunications industries face increasingly similar challenges to control the power usage of their microprocessors or servers and supporting power and cooling systems. In the face of growing global energy demand, uncertain energy supplies, and volatile energy prices, innovative solutions are needed to radically advance the energy efficiency of these systems, which represent the engine of the American economy today. Enhanced energy efficiency in the central offices and data centers supporting our ICT systems will enhance U.S. energy and economic security.

This FOA seeks to develop new technologies to dramatically improve energy efficiency in ICT systems with an emphasis on new technologies that can be commercialized within the next three to five years, and to demonstrate through field testing highly energy efficient, emerging technologies that are ready for or are in the initial stage of commercial introduction. The FOA has the following three areas of interest: (I) Concept Definition Studies for Energy Efficient Information and Communication Technology; (II) Information and Communications Technologies R&D for Energy Efficiency; and (III) Demonstration and Field Testing of Highly Energy Efficient and Emerging Technologies for Data Center or Telecommunication Use.

Under the first area, the proposed concept-definition studies will focus on specific, promising ICT technology that offers the potential for major energy, carbon, and economic benefits. While the focus technology must be in the early stages of research, each study will also indicate how the technology will eventually fit into commercial markets. The study will identify the technical barriers and critical R&D paths for

developing a commercial application or product that addresses a significant market opportunity.

The second area is directed to research and development in one of the following categories: (1) equipment and software, (2) power supply chain, and (3) cooling. The key theme and approach for the first category is to minimize heat generated from the computing hardware and software of the server-based data and telecommunications centers. Energy will be saved by developing novel systems that generate less heat or are impervious to heat, or by the use of optics. The second category is directed to improving power supply efficiencies by researching and developing high-efficiency power conversion circuits which optimize server-based data center and telecom equipment; special purpose chips, multiphase clocking, ternary/other processing modes, and lower-power chips; the use of optical switching to eliminate many conversion steps and losses; superconducting components; and efficient optimized control systems for power conversion. The third category is directed to improving the energy efficiency associated with the cooling of server-based telephone central offices and data centers by addressing advanced component level cooling technologies; mitigation techniques configured to reduce the probability of failures associated with "free" cooling; and effective uses of low-quality waste heat generated.

The third area, demonstration and field testing, includes establishing demonstration sites that will be early adopters of the technologies and will share information about the cost-benefit results of the field-tested technology projects so as to encourage more rapid market acceptance of the technologies. The sites shall supply performance data to enable DOE to prepare independent performance validations and case studies.

Cost share for the first and second areas is required to be 20% or higher. However, an applicant may propose a cost share as low as 10% using the Secretary's statutory authority under the Recovery Act to reduce cost-share requirements. Cost share for the third area is required to be 50% or more. However, an applicant may propose a cost share as low as 25% using the Secretary's statutory authority under the Recovery Act to reduce cost-share requirements.

Five to fifteen awards are anticipated under this FOA. Teaming arrangements among the recipients under each award is strongly encouraged and anticipated. Where appropriate, each team may be composed of a prime recipient and one or more subrecipients. It is anticipated that each of the teams will develop an appropriate allocation of patent rights among the recipients to facilitate the commercial development of the respective technical areas forming the subject matter of each award, pursuant to the Bayh-Dole Act. All types of domestic entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center, and nonprofit organizations engaged in lobbying activities.

It is the purpose of this class waiver to vest title to the parties' inventions with the recipients and subrecipients in a fashion enabling them to expediently commercialize the

various technologies. Accordingly, DOE will waive the Government's title to subject inventions, other than inventions made by Bayh-Dole recipients pursuant to P.L. 96-517, as amended, or National Laboratories, to the respective recipient or other recipients as may be designated by the parties agreeing to the terms of this waiver.

This advance class waiver of the Government's rights in inventions is subject to the usual Government license, march-in rights, and preference for U.S. industry provisions set out in 35 U.S.C. 202-204. The class waiver also includes the attached U.S. Competitiveness clause, paragraph t, which requires that products embodying any waived invention or produced through the use of any waived invention be manufactured substantially in the United States unless the recipient demonstrates to the satisfaction of DOE Field Patent Counsel, with the concurrence of the cognizant DOE program, that it is not programmatically or commercially feasible to do so. Field Patent Counsel, for good cause shown in writing, may grant a deviation from this U.S. Competitiveness clause in advance of contracting. The recipient further agrees to make the above condition binding on any entity acquiring rights to any waived invention, including subsequent assignees or licensees. Should the recipient 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.

The grant of this class waiver is not expected to have any adverse effects on competition or market concentration. Rather, the waiver should enhance competition and growth of ITP's mission in having the U.S. industry lead the world in energy efficiency and productivity. In any event, if a recipient who has obtained title is not making reasonable efforts to utilize a waived invention, DOE can exercise march-in rights.

This advance class waiver shall apply to each of the recipients under the teaming arrangements upon the Contracting Officer's written notice to Field Patent Counsel that the recipient is obligated to provide cost sharing as set forth in the applicable FOA, and shall remain in effect for so long as such cost sharing is maintained over the term of the agreement.

In addition to the above, all recipients under this FOA, other than recipients which are domestic small businesses or non-profit organizations under P.L. 96-517, as amended, or National Laboratories, shall give DOE written notice of their acceptance of the terms and conditions of this class waiver prior to entering into any agreement incorporating the terms of this waiver. Except as otherwise specifically approved by DOE Patent Counsel, a recipient's acceptance of an agreement under this award, at any tier, shall constitute that recipient's notice to DOE of its acceptance of the terms and conditions of this class waiver.

In the event a recipient which is a member of a teaming arrangement does not participate in subsequent phases of its project, the remaining recipients in that recipient's team shall retain, as a minimum, a royalty-free, nonexclusive license throughout the world, with the right to grant sublicenses, in each subject invention held by such recipient

pursuant to this class waiver, except as otherwise approved by DOE Field Patent Counsel. However, in no event will recipients eligible to obtain title pursuant to P.L. 96-517, as amended, or National Laboratories be required to license other recipients its subject inventions.

Considering the foregoing, and in view of the statutory objectives to be obtained and the factors to be considered under DOE's statutory waiver policy, all of which have been considered, it has been determined that this class waiver as set forth above will best serve the interest of the United States and the general public. It is recommended that the waiver be granted.



Glen R. Drysdale
Patent Counsel, Golden Field Office

Date: 10/08/09

Based upon the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by a waiver of the United States and foreign patent rights as set forth herein, and, therefore, the waiver is granted. This waiver shall not affect any waiver previously granted.

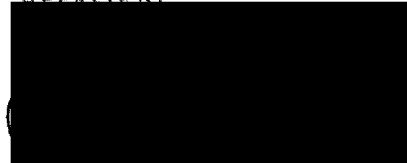
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Date: 11/9/09

APPROVAL:



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Intellectual Property, GC-62

Date: 11-10-09

(i) 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.