

STATEMENT OF CONSIDERATIONS

REQUEST BY UNITED TECHNOLOGIES CORPORATION (“UTC”) FOR AN ADVANCE WAIVER OF PATENT RIGHTS UNDER DOE AWARD NO. DE-EE0006108; W(A) 2013-003

UTC has requested a waiver of patent rights of the United States of America for all subject inventions arising from its participation under the above referenced award entitled “High-Efficiency Commercial Cold Climate Heat Pump.”

The purpose of the award is to design, develop, and demonstrate a prototype high performance commercial cold climate heat pump system that meets or exceeds DOE’s capacity and efficiency targets at all conditions and is scalable, cost-effective, and simple relative to the state of the art. The work will include design, analysis, fabrication, and commissioning of component test rigs to facilitate proof of concept testing of proposed technologies, and demonstrating the benefits of a commercial cold climate heat pump system.

The total anticipated cost of the project is \$1,866,182, with UTC cost sharing \$373,236. This waiver is contingent upon UTC maintaining a cost sharing percentage of at least 20% during the course of the award. The period of performance for the award is March 1, 2013 to May 31, 2015.

As noted in the waiver petition, UTC is a U.S.-based, global corporation with recognized expertise in many markets, including air conditioning components and systems produced by Carrier Corporation; high performance, low-emission gas turbine engines for military and commercial aero engines and ground power gas turbines produced by Pratt & Whitney; and high performance electrical generators and converters produced by Hamilton Sundstrand. UTRC, as the central research and development center, has broad experience in the development of technology and its transition into practice, supporting the breadth of UTC’s business units. Key capabilities include high-fidelity modeling analysis and system design for environmentally friendly thermal systems, turbo machinery and heat exchange devices, rapid prototyping, and processes and tools for the optimization of sub and full scale systems.

UTC invested \$1.77 billion in 2008 to develop new technology for products in all business units. UTRC directly receives approximately \$50 million annually from UTC for new technology tools and development. Approximately 15% of this value has been assigned to the development of tools, technologies, and capabilities to help improve energy efficiency of Carrier products. UTC has invested over \$5 million in research and development for advanced cycles and refrigerants. The technology that will be developed under this award falls within UTC’s core competencies. Granting this waiver will provide UTC with the intellectual property rights that it needs to successfully market the resulting products.

UTC 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, UTC has agreed to the attached U.S. Competitiveness provision, paragraph (t). In brief, UTC 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 UTC can show to the satisfaction of the DOE that it is not commercially feasible to do so.

Referring to item 10 of the waiver petition, granting this waiver is anticipated to have a minimal effect on limiting competition. Work performed under this award will develop and demonstrate new technologies that will meet DOE's efficiency and capacity targets at the coldest ambient temperature of -13 degrees Fahrenheit while meeting a payback period of less than three years. These targets are consistent with UTC's goals for a growth product in a niche market. Granting this waiver will enable UTC to become a more significant participant in this niche market, thus increasing competition in this area.

Considering the foregoing (*e.g.*, UTC's technical experience and competence and past and on-going investments in this technology), it is believed that awarding this waiver will provide UTC with the necessary incentive to invest its resources in commercializing the results of the award 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 awarded.



Julia Cook Moody
Deputy Chief Counsel for Intellectual Property
Golden Field Office

Date: 4/3/13

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 be best served by a waiver of patent rights of the scope determined above, and therefore the waiver is awarded. This waiver shall 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.

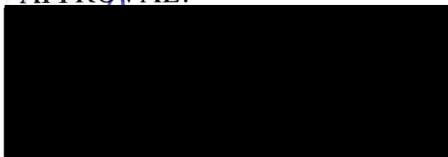
CONCURRENCE:



Roland J. Risser
Program Manager
Building Technologies Office

Date: 5/1/13

APPROVAL:



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

Date: 5/7/2013

(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.