## STATEMENT OF CONSIDERATIONS

REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY CANMETENERGY Ottawa, UNDER DOE AWARD NO. DE-FE0025160; W(A)-2016-013, CH-1771

Petitioner, CANMETENERGY Ottawa ("CANMET"), has requested a waiver of: (a) domestic and foreign patent rights for all subject inventions conceived solely by Petitioner under sub-award with GTI 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 objective of the sub-award is to test three technologies at pilot scale to demonstrate improved economics and reduce scale-up risk, such that they shall all be ready for inclusion in commercial demonstrations of Oxy-fuel Pressurized Fluidized Bed combustor (Oxy-PRBS) technology in the 2020- 2025 timeframe. The technologies include an in-bed Supercritical Carbon Dioxide (SC02) Heat Exchanger, Staged Coal Combustion and Isothermal Deoxidation Reactor. CANMET will perform component acquisition, fabrication, assembly and installation of the SC02 heat exchanger, and component acquisition and fabrication for the Staged Coal Combustion and Isothermal Deoxidation Reactor. In addition, CANMET will perform test planning for development of test sequences and objectives.

The total anticipated cost of the award is \$2,610,350.00 including the prime contractor's contribution of \$613,619.00, or about twenty-three percent (23%) of the total cost of the work under the award. Petitioner anticipates receiving in compensation from the prime contractor an amount of \$1,170,395.00 including the Petitioner's contribution of \$325,360.00, or about twenty percent (27.8%) 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 2 September 2015 to 2 September 2017.

Referring to items 5-9 of the waiver petition, Petitioner, as the Government of Canada's energy technology research and development lab, has extensive expertise with oxygen-fired fluidized bed combustion and both pressurized and oxygen-fired pilot-scale technology demonstrations and retains significant documented know-how in these fields. Further, Petitioner is working with GTI to act as commercializing licensee to bring the Subject Invention technologies to market and intends to seek commercializing entities for the proposed developed and ensuing technologies. The Government of Canada has expended approximately over \$5.45 million in related technology. The Government of Canada intends to continue funding oxygen-fired fluidized bed combustion and both pressurized and oxygen-fired pilot-scale technology project investments and opportunities. CANMET's legislative obligations under Canadian law stipulate that the ownership of intellectual property created wholly or in part by employees of the Crown and/or utilizing Crown assets and resources must remain the property of the Crown. However, CANMET is working with GTI to ensure that it has worldwide commercialization rights under license to CANMET's intellectual property and technologies.

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.

Referring to item 10 of the waiver petition, granting this waiver will not have an adverse impact on competition. It is intended that GTI and other potential technology licenses will receive non-exclusive non-discriminatory licenses of the technology. 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.

Karen L. Blouin

Patent Attorney Intellectual Property Law Division

Date: 23 May 2017

Michael J. Dobbs Assistant Chief Counsel Intellectual Property Division 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 of extension of the award, where such modification or extension, the purpose, scope or cost of the award has been substantially altered.

CONCURRENCE:

APPROVAL:

Angelos Kokkinos Director Office of Advanced Fossil Technology Systems, Fossil Energy, FE-22

Date: Tuly 24, 2017

Brian Lally
Assistant General Counsel for
Technology Transfer and Intellectual Property,

Date: 8/1/17

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