STATEMENT OF CONSIDERATIONS

Request by Ford Motor Company Research and Advanced Engineering Laboratory for an Advance Waiver of Domestic and Foreign Invention Rights under DOE Cooperative Agreement No.DE-FC26-07NT43276; W(A)-08-002,CH-1429

The Petitioner, Ford Motor Company Research and Advanced Engineering Laboratory (Ford), was awarded this cooperative agreement for the performance of work entitled "E85 Optimized Engine Application." The goal of the cooperative agreement is to develop practical technology which improves vehicle *fuel* efficiency using E85 and which is feasible for production implementation in the short term. Ford will: 1) utilize the favorable knock suppression properties of ethanol to build upon and enhance the recent technical development of spark ignition turbocharged direct injection gasoline engines; and 2) increase the "fun-to-drive" attribute normally associated with diesel vehicles in Europe. The technical approach will include an overlay of the Ethanol Boosting Systems (EBS) concept, which combines gasoline port fuel injection (PFI) with E85 direct injection (DI), where gasoline PFI is used for starting/cold start emissions and low-medium load operation and the amount of ethanol is increased as a function of load to prevent knock. Further details of the research to be conducted under this agreement are provided in response to question 2 of the waiver petition.

The total estimated cost of the cooperative agreement is $6,438,584, with the DOE share being $3,219,292, or 50%. Cost sharing of the project by Ford is thus $3,209,292 or fifty percent (50%). The length of this agreement is fifteen (15) months, from October 1, 2007 to December 31, 2008.

In its response to questions 5 and 6 of the attached waiver petition, Ford has described its technical competence in the technological field of this cooperative agreement. Specifically, Ford states that it has comprehensive knowledge and experience in Flexible Fuel Vehicles (FFV) applications in production. The proposed efforts build in a progressive manner on the work described above. Ford has previously tested direct injection of spark ignition engines using E85 as a fuel at differing compression ratios, and performed detailed kinetic modeling. Ford states that the research will be conducted in a manner comparable to other Ford pre-production advanced engine programs, citing recent examples. Ford has a long history of developing innovative and environmental friendly engines that meet or exceed emission regulations. Ford's technological experience and financial investment demonstrate its commitment to further development and improvement of E85 engine applications.

From its response to question 10, Ford states that if technology developed under this agreement is commercialized, it most likely would become one of several competitors in the field who are presently engage in similar powertrain research and development. Ford has generally licensed it patents on a non-exclusive basis, which results in an even greater increase in competition. *It* is unlikely that competition will be adversely affected by grant of the waiver.

The subject cooperative agreement will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which Ford agrees to substantial U.S. manufacture of subject inventions (attached hereto). Additionally, Ford 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.

[redacted]

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

Date Nov. 21, 2008

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 and consent to assignment 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:

[redacted]

Patrick Davis
Acting Program Manager
Office of Vehicle Technologies Program,
EE-2G

Date 1/4/12

APPROVAL:

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

Date 1/9/2012

(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.