## Statement of Considerations

REQUEST BY BALLARD POWER SYSTEMS CORPORATION FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN RIGHTS IN SUBJECT INVENTIONS MADE IN THE COURSE OF OR UNDER UT-BATTELLE, LLC SUBCONTRACT NO. 4000029752 UNDER PRIME CONTRACT NO. DE-AC05-000R22725; DOE WAIVER DOCKET W(A)-04-055 [ORO-790]

Ballard Power Systems Corporation (Ballard) has made a timely request for an advance waiver of worldwide rights in Subject Inventions made in the course of or under UT-Battelle, LLC Subcontract No. 4000029752, entitled, "Research and Development of Fuel Cell & Advanced Vehicle Power Electronics and Machinery Applications" under UT-Battelle Prime Contract No. DE-AC05-00OR22725. The scope of work involves designing, developing, testing and delivering 4 prototype high voltage to 14V dc-to-dc converters for automotive use, and developing high volume manufacturing plans and cost estimates. The work is sponsored by the Office of FreedomCar and Vehicle Technologies.

The dollar amount of the subcontract is \$3,011,867.00 with Ballard cost sharing \$1,505,933.00, or 50.00% of the subcontract. The period of performance is February 1, 2004 through September 29, 2006.

Ballard will contribute significant engineering development personnel as well as testing and development facilities during the performance of this contract.

The work under the Research and Development of Fuel Cell & Advanced Vehicle Power Electronics and Machinery Applications will be managed by Ballard Power Systems Corporation in Dearborn, Michigan.

Ballard manufactures and sells to automotive original equipment manufacturers (OEMs) [including Ford Motor Company, DaimlerChrysler, Volkswagen, and others] similar power electronic products, including dc-to-dc converters embedded within the integrated power train systems used by these manufacturers for their fuel cell vehicle fleets being developed and sold in limited quantities. In addition, Ballard sells to several companies UPS power electronic dual-inverters for grid and stand-alone operation. Ballard's products also include electric powertrains and accessories for airport ground support equipment and manufacturing plant electric tow tractors. Ballard designs and develops custom power electronics as well for other applications to meet customer needs. Ballard's patent position is significant, as evidenced by a submitted list of nearly 50 U.S. patents. Ballard is a member of the Center for Power Electronics Systems, an NSFfunded national center of excellence for power electronics research; they are also a member of the Wisconsin Electric Machines and Power Electronics Consortium, a University of Wisconsin-Madison based consortium of electric drives and related equipment manufacturers. Many of Ballard's employees are published authors in technical journals concerned with the advancement of the state of technology in this area.

Ballard's commercial position is tightly integrated to several automotive OEMs in the relatively small current market for automotive dc-to-dc converters. Ballard also supplies similar dc-to-dc converters to other power electronic product customers. Ballard supplied the traction motor drive systems for the Ford Electric Ranger and Postal Delivery Vehicle to Ford Motor Company. This vehicle is the world's highest volume on-road electric vehicle to date. Ballard has invested millions of dollars in the development

of phase inverters, dc-to-dc converters, motors, and traction drive systems for the emerging electric vehicle market and alternative energy market.

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Ballard is seriously engaged in the fuel cell enabling marketplace, as well as being a fuel cell developer. Ballard is committed to helping move the world toward a hydrogen economy by being one of the vibrant and competitive suppliers working diligently to develop innovative and efficient products for automotive applications and other fields of use. The protections and competitive advantages provided by patent rights are key to success in this field as well as key to the maturation of the market.

If the requested waiver is approved, the Patent Rights-Waiver clause will be included in the subcontract. Petitioner has accepted the Patent Rights-Waiver clause including march-in rights, retention by the government of a license, and preference for U.S. industry.

In addition, Ballard agrees that any product, process or service using any intellectual property arising from the performance of this subcontract, including that resulting from a Subject Invention, shall be manufactured, practiced or provided substantially in the United States, unless Ballard can demonstrate that it is not commercially feasible or reasonable to do so. In the event that Ballard does not manufacture products embodying waived inventions substantially in the United States, Ballard and the DOE shall agree on terms and conditions appropriate to DOE's investment in the waived inventions not substantially manufactured in the United States.

Granting of the waiver should have little effect on competition since there is a diversity of market participants ranging from large corporations to small startups. Given the diversity of power electronic products within the emerging electric and fuel cell electric vehicle market, it is unlikely that one company will come to dominate. Small and midsized companies like Ballard should tend to nurture further competitive and innovative development in the field.

Grant of the requested waiver should serve as encouragement to other DOE contractors that significant cost sharing will be recognized as an acceptable consideration for granting greater rights in Subject Inventions.

In view of the acceptable level of cost sharing by Ballard and the objectives and considerations set forth in 10 CFR 784.4, all of which have been considered, it is recommended that the requested waiver for worldwide rights be granted.

Esther L. Roberts

Patent Attorney

Date 3. 11. 2005

Based on the foregoing Statement of Considerations and the representations in the attached Waiver Petition, it is determined that the interest of the United States and the general public will best be served by a waiver of U.S. and foreign patent rights, and therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the cost-shared subcontract where, through such a modification or extension, the purpose, scope or cost of the subcontract has been substantially altered.

CONCURRENCE:

**APPROVAL:** 

Edward Wall

Program Manager FreedomCar and Vehicle Technologies

-5-05

Date

Paul A. Goylleb / Assistant General Counsel for Technology Transfer and Intellectual Property

-9-01

Date