

## STATEMENT OF CONSIDERATIONS

### REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY BMTS TECHNOLOGY GMBH UNDER DOE AWARD NO. DE-EE0009610; W(A) 2022-008

BMTS Technology GmbH based in Germany ("BMTS Germany") 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 "Durable and Efficient Centrifugal Compressor-Based Filtered Air Management System and Optimized BOP for HD Fuel Cell Applications." The award is to MAHLE Powertrain, LLC. BMTS Germany is a sub-awardee to MAHLE Powertrain, LLC.

BMTS Germany will conduct portions of its work under this award in Germany. This foreign work has been approved. BMTS Germany also will use its U.S. based subsidiary, BMTS Technology US Corporation ("BMTS US") to perform work under this award. BMTS Germany will assign any subject inventions from the work in Germany to BMTS US in order to consolidate all intellectual property made by BMTS US and BMTS Germany with BMTS US.<sup>1</sup>

The objective of the award is to develop fuel cell air management components with (a) increased efficiency, durability, and flexibility and (b) lower the cost of such components to achieve DOE's 2030 heavy-duty fuel cell air compression system targets. BMTS Germany's and BMTS US's joint role is to design, build, and test an electrically assisted turbocharger ("e-Turbo") for a heavy duty on-highway fuel cell application. The work will rely on Germany-based experts that have the ability to conduct advanced engineering functions including performance simulations with proprietary and industry-used computer-aided engineering tools; prototype machining; assembly and balancing; and hot gas test bench flow measurements. BMTS US will deliver an e-Turbo to MAHLE Powertrain, LLC and support testing the e-Turbo at a MAHLE Powertrain, LLC facility in the U.S.

The total cost for the award is \$2,240,672. The total cost of the sub-award to BMTS Germany is \$657,355 including \$494,355 federal funds and \$163,000 cost share. The cost share includes the estimated total foreign labor of \$106,359. This patent waiver is conditioned on BMTS Germany maintaining at least 20% cost share. The period of performance for the sub-award is 30 months with a projected start date of October 2022.

BMTS Germany has produced 10 million turbochargers since 2012. It sold 2.5 million turbochargers in 2019 and is on track to double that by 2024. Together, BMTS Germany and BMTS US have the in-house expertise to design, build and test e-Turbos. They have provided e-Turbos for testing by many OEMs, *e.g.*, Stellantis, Audi, and Daimler. They have many patents in turbochargers, bearings, bearing seals, and e-Turbos. They have invested \$2 million to develop e-Turbos in 2020 and 2021. They also have a \$1 million project with University of Michigan to test an e-Turbo in an engine test cell with a Ford I.SL engine. The bearing seal

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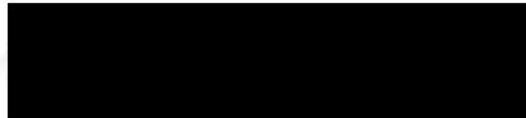
<sup>1</sup> This waiver only applies to BMTS Germany. MAHLE Powertrain, LLC and BMTS US are both domestic large businesses and governed by the EERE Class Patent Waiver for Domestic Large Businesses W(C) 2016-004.

technology to be used under the award has been under development by BMTS Germany since 2021, including testing bearing samples for General Motors Global Propulsion Systems.

While the some of the work under the award will be performed in Germany, BMTS Germany has agreed to the same U.S. competitiveness provision that applies to other project team members under the class patent waiver, *i.e.*, any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless BMTS Germany can show to the satisfaction of DOE that it is not commercially feasible to do so. In addition to U.S. competitiveness provision, this advance patent waiver will include the same terms and conditions as the class patent waiver. For example, it will 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.

Referring to item 10 of the waiver petition, BMTS Germany does not believe this waiver will limit competition due to other technologies that dominate the industry by larger competitors, especially larger Chinese competitors. This waiver should support BMTS Germany efforts to introduce another e-turbo into the marketplace against those competitors.

Considering the foregoing, it is believed that awarding this waiver will provide BMTS Germany 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 granted.

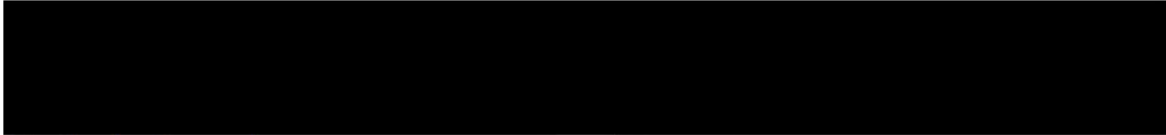
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Glen Drysdale  
Patent Attorney  
Golden Field Office

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 granted. 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:

APPROVAL:



Dr. Sunita Satyapal  
Director  
Hydrogen and Fuel Cell Technologies  
Office (HFTO)

Brian Lally  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

Date: 12/19/22

Date: 1/11/20