

GE Aviation

One Neumann Way, Cincinnati, Ohio 45215-1988 USA

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Applied Science & Technology Research Organization of America (ASTRO America) 6701 Democracy Blvd., Suite 300 Bethesda, Maryland 20817

Re: AM Forward

GE Aviation is pleased to join the federal government in implementing AM Forward— a voluntary compact aimed at strengthening U.S. supply chains by supporting U.S. based suppliers' adoption and deployment of additive manufacturing (AM), or industrial 3D printing capabilities.

Additive manufacturing is a leading-edge production technology that is foundational to U.S. global competitiveness; it has a number of benefits, including forming geometries that are unattainable through any other medium. Aerospace and defense companies use this technology to significantly consolidate part counts and design high-performing components across a number of platform-types, ranging from hypersonics to aircraft engines.

Additive manufacturing also has the potential to improve the agility of casting and forging supply chains where legacy processes are often resource and time intensive. If appropriately qualified and applied, additive manufacturing can be used to reduce part lead times substantially, even under current supply chain conditions. Doing so will require considerable support to suppliers—especially small and medium sized enterprises.

Through AM Forward, GE Aviation aims to ensure that within a 12-24 month period multiple U.S.-based suppliers have increased their ability to additively produce parts, enhancing their competitiveness, agility, and productivity. Such an initiative will demonstrate clear, consistent, and growing demand for additively produced parts, provide training to suppliers' workers to support broad additive capabilities, engage in standards development, and offer technical assistance. We appreciate the federal government's support of these efforts through U.S. Government financing programs, capacity building, workforce development initiatives and other mechanisms.

Specifically, GE Aviation will support the goals of AM Forward by committing to:

- Targeting small/medium sized suppliers to compete on 50% of the request for quotes that are sent out on products manufactured using additive or related technologies
- Targeting 30% of total external sourcing of additively manufactured parts to be purchased from a small/medium sized supplier

- Improved payment terms to allow small/medium sized suppliers timely access to resources for operational or infrastructure investments
- Support for qualifying small/medium sized suppliers and training to meet GE qualification requirements

We look forward to delivering on these commitments in partnership with the federal government.

In order to achieve the foregoing objectives, GE Aviation is committed to working with the other participants in AM Forward, and in concert with U.S. Government agencies, to improve the capability, agility, and competitiveness of our supply base. This activity will require engagement at both a working level and a senior executive level along with government officials and other industry peers to support a range of activities by industry, government and non-profits. We understand as an AM Forward participant, we will be supported with staff coordination from 501(c)(3) nonprofit organizations including the Applied Science & Technology Research Organization of America (ASTRO America) and Gettysburg College's Eisenhower Institute.

Additionally, as an industry participant, GE Aviation will support efforts by suppliers within our sourcing network to take part in key U.S. government programs associated with AM Forward. For example, we believe that various federal agencies can play an important role in accelerating small and medium sized manufacturer (SMM) access to necessary capital, workforce training, technical assistance and technology transition support.

We know that the competitiveness of the U.S. industrial base, including GE Aviation, relies on the capability of tens-of- thousands of SMMs producing and post-processing critical aerospace parts. However, we recognize that over the last several decades many SMMs have lacked access to resources to upgrade their technology, and thus improve productivity. Through AM Forward, we can work with you to accelerate AM adoption at scale, increasing the agility, capacity, and resiliency of U.S. supply chains and supporting good-paying jobs across the United States.

Thank you for your leadership on this important initiative.

Sincerely,

M. Kauffin

Mike Kauffman Vice President & General Manager Global Sourcing GE Aviation

CC: Mr. Brian Deese Director, National Economic Council