Prof. R. John Hansman,

In response to your email dated February 26th, 2018 in which you asked members of the different subcommittees to provide you with response to the recently released 2019 budget proposal which had a significant reduction in the FAA RED funding (from \$175M to \$74M). I thank you for the opportunity to provide you with what we in the Subcommittee on Environment and Energy believe are some of our major concerns and possible consequences of these proposed budget cuts:

The Office of Environment and Energy (AEE-3) have proven over decades to be very good stewards of taxpayer money. They have used their budgeted amounts to conduct and coordinate the research necessary to produce informed policies, facilitate technological advances in the aviation industry, and produced models and data that have positioned the U.S. as both a State leader at ICAO CAEP and on the global aviation stage. The Subcommittee is very supportive of the work that AEE does and believes that the E&E R&D portfolio is well managed and well balanced.

For years AEE staff have been able to do more with less, (i.e. they are short staffed), and they have been able to effect and maintain U.S. leadership at a global level. This has been accomplished by working collaboratively with private industry, major universities through the Partner and ASCENT Centers of Excellence, other Federal Departments and Foreign Governments. Three quarters of E&E R&D funds generate 100% plus cost matching from non-federal partners (CLEEN, CAAFI, and ASCENT). This leverages scarce FAA R&D funds to accomplish significant advances and improvements. In addition, government funding has been used effectively to lower the risk of new and emerging technologies such that they can be adopted by industry.

The draconian reduction in funding of approximately \$95 million (more than 50%) in 2019 and subsequent years is obstructive to the FAA being able to meet its goals and being able to maintain current research, or evaluate the impact of new entrants on the environment. Decreased funding will undoubtedly reduce the FAA's ability to respond to domestic needs, such as those regarding noise and the U.S. position on a global scale. Slowing maturation of environmental technologies that deliver improved environmental performance will have a negative impact on aviation system growth with significant economic impacts. The inefficiencies of slowing or stopping projects that have already made progress thru multi-year investments also end up costing more to accomplish the same objectives. Moreover, the lack of funding will definitely affect private industry in the U.S. These budget cuts would also require a reduction in staffing of approximately 50%. Staff will be required to maintain the same level of research to inform decision making and advance solutions such that the FAA can attain its goals. This is not possible with less financial and personnel resources. AEE cannot accomplish more with less.

The elimination of funding for the Alternative Jet Fuel (AJF) Program will have a catastrophic effect on the maturation of this fledging industry. It is the position of this Subcommittee that the work on Alternative Jet Fuels is critical to the U.S. aviation industry and should not be eliminated. In fact, it is our view that these new companies and the industry that is being created will not be able to continue the work without government funding and the policies and procedures that are currently in place. Alternative fuels are a critical component of the emissions reduction puzzle if industry is to get to their carbon neutral growth goals after 2020 or their emissions reduction goals by 2050. We strongly

recommend that either A13.a or A13.b have an allocation for the continuation of research on AJF. Even at a reduced level it is important to maintain a core competency in the government to be able to recognize and react to changes in this field. A complete reduction of alternative fuels research in AEE will ensure that other countries can dictate the future global standards for alternative fuels, which would leave the U.S. in a vulnerable position where we could not respond with scientific data to support the U.S. industry.

Lessons should be learned from examples of previous programs as to the challenges in recovering a program that had their funding either cut or significantly reduced. We believe one such example is when the priorities changed at NASA a number of years ago regarding its hypersonic capabilities (both personnel and facilities). Rather than eliminating this program there was a minimal amount of money approved to support key research competencies and facility to stay active. This strategy of maintaining a lower level of support proved to be significant since the demand for research in this area recently dramatically increased. Rapidly changing global conditions affected the overall priority of this area and NASA was quickly able to ramp up the activity because key elements were preserved and they were able to quickly respond to meet a key National need. Demand for NASA expertise and access to these key facilities is now at or above capacity.

The Subcommittee does not believe that these proposed budget reductions will allow the FAA and the U.S. to maintain its current leadership position at ICAO CAEP and on the global aviation stage. These reductions will have a negative impact on the advancement of the U.S. aviation industry and the many related and supporting private business entities. The U.S. will likely be in a position where we will cede leadership in policy setting based on scientific data and could be in a much weakened position to effectively respond and protect U.S. interest when it comes to international aviation standards.