

FAA REDAC Subcommittee on Environment and Energy

March 2019 Meeting

Findings and Recommendations

The Environment and Energy (E&E) Subcommittee of the FAA Research, Engineering and Development Advisory Committee (REDAC) met in Washington, DC on March 19 – 20, 2019. The subcommittee focused on reviewing the R&D portfolio in Environment and Energy for 2019 – 2020. **Both the House and the Senate should be commended for recognizing that the President's proposed \$75M budget would not be enough to allow the Office of Environment and Energy (AEE) to address their mission. The approval of the FY19 budget which included \$191.1M for RE&D funds is an endorsement of the work that is being done by AEE. The importance of the FAA's E&E R&D portfolio was reflected in the results of the recent ICAO CAEP meeting and the adoption of the Carbon Offsetting and Reduction System for International Aviation (CORSIA).** Following is the report on the outcome of this meeting. The recommendations offered are all for inclusion in the REDAC report. There are no recommendations from this meeting for the letter to the Administrator.

Finding (1): - Noise Research:

The Subcommittee realizes that aviation noise is an ongoing issue and quite possibly the biggest threat to NextGen, the modernization of the NAS and constraint to the growth of the U.S. Aviation industry. Much research is still necessary to address the ongoing topic of aviation noise and the possible impact of new entrants into the market. **The Subcommittee believes that there will be growth from Subsonic, UAM/UAS, Supersonics and Commercial Space vehicles and the FAA will need to be able to address the noise, emissions and health impacts of these new entrants.** AEE is working with universities through the Aviation Sustainability Center (ASCENT) to better understand the underlying issues and develop innovative solutions. AEE is also working with industry to accelerate the development of technologies that reduce noise through the Continuous Lower Energy, Emissions and Noise (CLEEN) Program. Some of the work in ASCENT is being held up because of the current delay in processing grants.

Recommendation (1):

The Subcommittee strongly supports the prioritization of the noise research that will support informed decision-making and enable NextGen Deployment. We believe that the focus should be on impacts of Subsonic, UAM/UAS, Supersonics and then Commercial Space vehicles, in that order. The FAA should aggressively move forward with its research efforts as research is the key to establishing sound policy.

Finding (2): Global Leadership:

The adoption of CORSIA at the ICAO CAEP meetings is a clear indication of the FAA's ability to influence the establishment of international standards, which allows the U.S. aviation industry to maintain its competitiveness throughout the world. **The Subcommittee believes that maintaining the U.S. global leadership position at ICAO CAEP is essential to protecting U.S. aviation interests.** This position is only possible because of the FAA's ability to maintain its current research goals and its ability to evaluate the impacts of future entrants on the environment.

Recommendation (2):

The Subcommittee recommends the prioritization of all research efforts/programs that will allow the FAA and the U.S. to maintain its current global leadership position at ICAO CAEP and to expedite university research grants that support the U.S. work in ICAO CAEP. It is the belief of the Subcommittee that if the FAA/U.S. does not maintain its leadership position at ICAO CAEP, it will not be able to influence policy/rulemaking and this could have a significant negative impact on the U.S. aviation industry.

Finding (3): Alternative Jet Fuels:

It is the position of this Subcommittee that the work on Alternative Jet Fuels (AJF) is critical to the U.S. industry and should be supported at the highest levels. Having the FAA maintain a leadership role in the development of AJF will also ensure that the rules that are developed internationally will benefit the U.S. industry. **A lot of progress has been made in the development of alternative fuels and any reduction of funding for the Alternative Jet Fuel (AJF) Program (including efforts in the Commercial Aviation Alternative Fuels Initiative (CAAFI), CLEEN and Aviation Sustainability Center (ASCENT)) will have a catastrophic effect on the maturation of this fledgling industry.** It is our view that the new companies and the industry that have been created will not be able to continue the work on AJF without government funding and the policies and procedures that are currently in place. Alternative fuels are a critical component of the industry's emissions reduction strategy and must be developed if industry is to get to their carbon neutral growth goals after 2020 and their emissions reduction goals in 2050.

Recommendation (3)

Since the maturation of the Alternative Jet Fuel program will be a major environmental benefit for the public, will create a new industry within the U.S. that benefits rural America, and will benefit the U.S. aviation industry, we strongly support funding for the continuation of research on AJF.

Finding (4): Public Private Partnerships:

The Office of Environment and Energy (AEE) 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. 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 Environment and Energy research funds generate 100% plus cost matching from non-federal partners (CLEEN, CAAFI, and ASCENT). **Recent challenges in the grant approval process have led AEE to solicit new project ideas from a wide range of researchers in the ASCENT and CLEEN program. These ideas will lead to new research efforts for ASCENT that should result in real-world innovation.** In order for the work that is being conducted with private industry and by the universities in the Center of Excellence to not be adversely impacted, the government must approve these new grants and expedite the approval of grants that are currently in the pipeline. Delays in the approval of these grants has a negative effect on our working relationship with our partners.

Recommendation (4):

The Subcommittee continues to endorse the robust funding of Public Private Partnerships like the CLEEN, CAAFI and ASCENT that leverage scarce resources. The Subcommittee is also pleased with the close collaboration between NASA and the FAA. AEE presented an overall plan on how to get much needed new research ideas and to expedite the grant approval process. The Subcommittee endorses this plan. In order to not interrupt the much needed work that is being accomplished, we request that the FAA adopt this plan and expedite the approval of university grants.

Finding (5): Emissions

AEE has identified challenges associated with the use of the Aviation Environmental Design Tool (AEDT) to evaluate compliance with air quality standards. AEE has also identified challenges in getting air quality and noise data to support modeling efforts. **AEDT is an important tool in the arsenal of tools that the FAA relies on to enhance usability and improve airspace and airport design.** The Subcommittee is supportive of the work that has been done to develop this tool, but believes that a plan needs to be developed to address air quality modeling challenges and to compare AEDT results with field measurements.

Recommendation (5):

The Subcommittee recommends the FAA continue the simultaneous balanced development of usability improvements, enhanced features, and increased accuracy of AEDT in the near term. The FAA should make a point of emphasis to improve the dispersion modeling that is used by AEDT to evaluate air quality impacts. We also recommend that the FAA reach out to airports that use air quality and noise monitors and partner with them in order to get their emissions and noise data that would support their modeling efforts.