FAA REDAC Subcommittee on Environment and Energy

Findings and Recommendations

April 2023

E&E Findings & Recommendations (1)

Sustainable Aviation Fuels (SAFs)

- We know that the Sustainable Aviation Fuel (SAF) Program (including efforts in the Commercial Aviation Alternative Fuels Initiative (CAAFI), CLEEN and ASCENT) is a critical component of the industry's global emission reduction strategy. In order to meet the federal goals of increasing the production of SAFs to at least 3 billion gallons per year by 2030, there will need to be an increase in the research projects within the ASCENT portfolio. We are happy to see that some of these research projects have already been added to the portfolio. The same can be said if we hope to develop fuels that can be blended above 50% in today's fleet of aircraft. The current research has helped with the creation of a number of companies that have the potential to benefit the rural economies of several states and the U.S. Aviation industry. The establishment of the Sustainable Aviation Fuel Grand Challenge will insure that the U.S. Government and the private sector are working together to address aviation sector emissions. The signatories of the SAF MOU, the DOE, DOT and USDA are all working very hard and have made progress and have developed goals and made commitments to this program. The new SAF Credit and Grant Programs are vehicles geared towards implementation of the SAF Program. The EPA is also heavily engaged as well. There are ongoing efforts to ensure that alternative jet fuels are in CORSIA through ICAO CAEP.

- The Subcommittee agrees with the mandate proposed by the current administration that the work on Sustainable Aviation Fuels (SAF) is a critical component for the reduction of aviation sector emissions and supports the SAF Grand Challenge. Since the maturation of the Sustainable Aviation 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 recommend that the FAA AEE continues to allocate funds for the continuation of research on SAFs. We endorse what has been started but strongly recommend that AEE needs to accelerate this program in order to accomplish the goal of being able to supply 100% of the aviation fuel needed in 2050. The awarding of FAST-SAF and FAST-TECH grants is significant for the success of the SAF program. The FAA must also maintain a leadership role in the development of SAFs to ensure that the rules to be considered at a global level (ICAO) will be beneficial to the U.S. industry.

E&E Findings & Recommendations (2)

Public Private Partnerships

- The Subcommittee continues to acknowledge and support the fact that the Office of Environment and Energy (AEE) have proven over decades to be very good stewards of taxpayer money. The leadership team at AEE has used their budgeted amounts to conduct and coordinate the research necessary to produce informed, data-driven 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 execution of this research portfolio has been accomplished by working collaboratively with private industry, major universities through the ASCENT Center 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). The results that we have seen in the CLEEN Phase 1 and CLEEN Phase 2 projects as well as those in the ASCENT Center of Excellence is proof that these partnerships clearly work. These partnerships leverage scarce FAA R&D funds to accomplish significant advances and improvements. In addition, we believe that government funding has been used and executed effectively to lower the risk of new and emerging technologies such that they can be adopted by industry. The research benefits of these partnerships has clearly been proven over time and is very apparent in the current projects. The maturation of new technologies has delivered improved environmental performance and has enabled aviation system growth and associated positive economic impacts. In order to comply with Executive Order 14008 on Tackling the Climate Crisis, there will be an increased reliance on these Public Private Partnerships. One of the benefits that has not been highlighted before is that these partnerships have created new industry and new jobs in aviation. In addition, private industry, universities and hundreds of students have benefited from the partnership with the FAA. Getting the timely award of these grants is critical to the COE's ability to start vital projects.

- Whereas the Subcommittee continues to endorse Public Private Partnerships like the CLEEN, CAAFI and ASCENT programs to leverage resources, we believe that the FAA will not be able to accomplish any of the priorities set forth by the current administration without allocating robust funding for these programs. The Subcommittee recommends that AEE utilize the additional funding that it has received in FY22 and any additional funding it receives in FY23 and FY24 on new and existing projects that will enhance and accelerate research to best address the current federal mandates. The Subcommittee endorses the establishment of new partnerships with other federal agencies similar to the one that exist with NASA as a key to success.

E&E Findings and Recommendations (3)

Global Leadership

- Despite the fact that the FAA AEE currently maintains a leadership role in ICAO CAEP and has been the driving force behind the push for data driven rule making, based on the commitments made by the current administration on Climate Change, the Subcommittee firmly believes that maintaining the U.S. global leadership position at ICAO CAEP is essential and advantageous to U.S. aviation industry and will allow the U.S. government to defend its positions based on scientific research. Previous work that has been done with ASCENT and the Volpe Center has clearly allowed the FAA to maintain a scientifically supported position at ICAO CAEP. The close collaboration with NASA and individuals that have been involved in research projects under the E&E portfolio have played significant roles at ICAO CAEP and that is also clearly supporting U.S. global leadership. The work done within the CAEP Task Group to reach an agreement on a Long Term Aspirational Goal for international CO2¬ emissions (LTAG TG) is major accomplishment and one example of this collaboration and support setting the stage for U.S. leadership. Establishing international standards for SAF is also important. Anything that jeopardizes ongoing research at AEE will impact the FAA/U.S. global leadership position at ICAO CAEP. The FAA's ability to attend in person meeting and represent the U.S position regarding international policy making at the international level

- The Subcommittee recommends the continuing strong support of all research efforts/programs that will allow the FAA and the U.S. to maintain its current global leadership position at 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.

E&E Findings and Recommendations (4)

Noise Research

- Aviation noise is and will continues to be one of the biggest environmental impacts related to the aviation industry and it requires ongoing research in order to address the concerns of the citizens. Despite the fact that we have learned a lot based on the results of many of the projects in the "Noise Portfolio", the Subcommittee's position on noise has not changed in that there is much research that is still necessary to address the ongoing topic of aviation noise. Whether there are new technologies or new procedures that can be implemented to help reduce the impacts of noise as the aviation industry rebuilds needs to be evaluated. Historically, advances in aircraft technology have been the major factor in reducing aviation's environmental impacts. The Subcommittee recognizes that there is about a seven (7) year lag between flight testing a technology and it's appearing in the fleet. Therefore if we want to consider any new technology being introduced into the fleet in early 2030, we need to invest in the research now. The use of government resources during the initial research stages helps mitigate technology risk and incentivize private companies to invest and develop cleaner, quieter technology. AEE has seen a number of research projects that have contributed to more fuel efficient and quieter aircraft. They have also developed new operational procedures that have reduced the noise impacts in communities in and around airports. There are a number of new research projects that have been added to address issues related to new entrants, such as unmanned aerial systems (UAS) and advanced air mobility (AAM) into the aviation system. Many of these new entrants will be active participants in our airspace in the not too distant future. There is strong collaboration with NASA on the noise front. There also have been significant upgrades made to the Aviation Environmental Design Tool (AEDT). AEE has established an AEDT User Review Group for ideas and feedback in order to ensure that the tool is beneficial to the actual users. FAA has also launched an initiative to partner with airports to gather more noise data resulting from noise complaints. Finally, AEE is working with industry to accelerate the development of technologies that reduce noise through the CLEEN Program.

- The Subcommittee once again recommends the continued prioritization of noise research and the prioritization of the projects that will support informed decision-making as it relates to the introduction of new entrants to the national air space.

E&E Findings and Recommendations (5)

Staffing

- Given the mandates and financial support from the current administration to climate change and increased SAF production, AEE has added a number of new projects to the portfolio. With additional funding from the Inflation Reduction Act and new SAF Tax Credit and Grant Program, there will be many additional projects being created in the near term. The Subcommittee has concerns that they are not sufficient subject matter staff to handle and manage the increased workload. AEE needs to carefully examine its staffing to ensure that it has sufficient staff to support the expansion of public private partnerships and planned future projects. The loss of the Chief Scientific and Technical Advisor and other subject matter leads has created some additional challenges for AEE leadership.

- The Subcommittee strongly recommends that the FAA, AEE carefully examine the workload on its current staff and ensure that it has sufficient staff to support the additional priorities and projects that have been added to the portfolio.

E&E Findings and Recommendations (6)

Grants

- There has been additional funding for new grant programs. The Subcommittee is concerned that any delay in approving and awarding of these projects will result in missed research opportunities and will create challenges in being able to address the priorities ahead and the ability to accomplish our goals

- The FAA needs to streamline the process and remove any obstacles that are delaying the approval and awarding of these projects that are necessary to the success of its mission.