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5 Key Messages From the Airport Enabling Efforts Workshop

2024 SUSTAINABLE AVIATION ENERGY CONFERENCE

The energy transition brings unprecedented complexity and opportunity to the aviation ecosystem. At the 2024 Sustainable Aviation Energy Conference, more than 100 aviation leaders gathered in Dallas, Texas, to discuss collaboration and research needed to clear the path to widespread adoption of sustainable aviation technologies.

During open workshops, participants from state and federal agencies, airports, aircraft and engine manufacturers, liquid fuel producers, and other stakeholder groups brainstormed the biggest barriers and opportunities for realizing a sustainable aviation ecosystem.

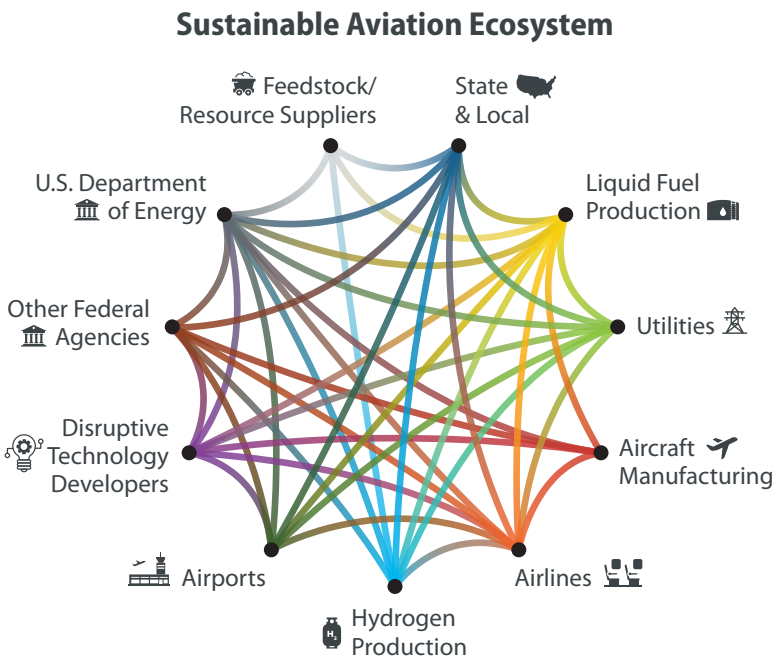
Below are five key messages and discussion points that emerged during a workshop on airport enabling efforts.

1. Revenue Impacts of New Energy Sources and Efficiency Technologies Is Top of Mind for Airports

There is uncertainty surrounding revenue impacts of increasing efficiency and introducing new fuels and mobility systems.

Key discussion points:

- Airport operators need to understand how new forms of mobility will affect revenue, such as parking revenue.
- Business plans may need to account for decreases in the amount of parking and number of rental cars at airports, which can make up as much as half of all revenue.
- Airline fees might change to provide funding flexibility.
- Fuel flowage fees are often primary mechanisms airports use to fund energy and infrastructure improvements.



Strategic collaboration and knowledge-sharing will be essential for meeting aviation's decarbonization goals. *Figure by Elizabeth Stone, NREL*

- Regulators might consider tweaks to the Airport Improvement Program or Passenger Facility Charges Program as mechanisms to fund sustainability and airport decarbonization initiatives.
- Public–private partnerships might support technological advancements, with the possibility of financing being handled by private entities, though such partnerships should consider asset ownership, maintenance, and end of life.

2. Demonstrating New Technologies—And Getting Them Quickly Certified by Regulators—Is a Substantial Challenge

The certification process for airside technologies, such as autonomous vehicles and ground support equipment, is slow and challenging.

Key discussion points:

- Airports demonstrating new technologies (e.g., autonomous tugs for ground taxis) face challenges navigating federal processes. Industry time to market does not align with federal processes and agency research queues.
- More efficient demonstration processes might promote faster reviews by regulators while ensuring safety, though this might require coordination among several agencies.
- Testing and validation of new technologies could be extended to airport partners or related de-risking facilities to accelerate safe deployment.

3. Airports Could Benefit From a Normalized Energy Use or Sustainability Standard To Support Decision-Making

Is there an energy use standard or electrification roadmap that could apply across airports regardless of size?

Key discussion points:

- Multiple sustainability rating systems are being applied to airport environments, such as Leadership in Energy and Environmental Design (LEED) for buildings and Envision for heavy infrastructure programs.
- On the West Coast, some airports use the Envision sustainability framework and rating system to meet state-level regulatory requirements.
- Policymakers may consider standardized general guidelines agreeable to all airports, possibly based on energy use intensity. Local preferences should be considered.

Sponsored by DFW International Airport and hosted by NREL, the 2024 Sustainable Aviation Energy Conference brought federal agencies and industry leaders to the whiteboard to find focused collaboration areas that can accelerate existing federal, state, and industry programs. *Photo by Chris Bousselot, Dallas Fort Worth International Airport*

- The Airport Cooperative Research Program could be a good resource when considering sustainability rating systems.
- A Better Buildings Challenge could be developed for airports.

4. Airports Need an Electrification Roadmap

Tools for electricity load forecasting and management are helpful but must be supplemented by guidance on how to apply them.

Key discussion points:

- Airports could use a high-quality electrification roadmap and installation energy plans that provide strategic steps and energy efficiency measures they can take toward decarbonization goals.
- Airports might conduct master electrification planning with utilities.
- Supplemental roadmaps might pose creative solutions for using bidirectional ground vehicle charging to support energy resilience.
- In the future, parking stalls might serve as batteries or a microgrid to support operations during blackouts.
- Airports can consider ways to distribute risks and revenues, including paying people for accessing vehicle batteries to support airport loads.
- Electrification plans should address security concerns, including cyber risks.

5. Airports Must Align Accessibility and Mobility Goals With Revenue

A broader, systems-level approach—that looks outside the airport fence—can help support mobility equity and contribute to energy goals, including trip reduction.

Key discussion points:

- Airport and regional planners can encourage transit-oriented development, such as housing near airport mass transit and advertised to vendor employees.

- Airports should get creative about access fees.
- Ground transportation plans might encourage frequent travelers to shift behavior to carpool, transit, and other alternative forms, freeing up parking space for new energy facilities.
- Vendors and contractors can incentivize moving employees closer to airports, including offering benefits for commute trip reduction.
- Equitability should be front of mind when encouraging people to drive less, as level of pay often translates to longer commutes.

Learn More

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