FAA Office of Environment and Energy (AEE) Research Overview

Federal Aviation Administration

Presented to: ASCENT Advisory Committee Meeting

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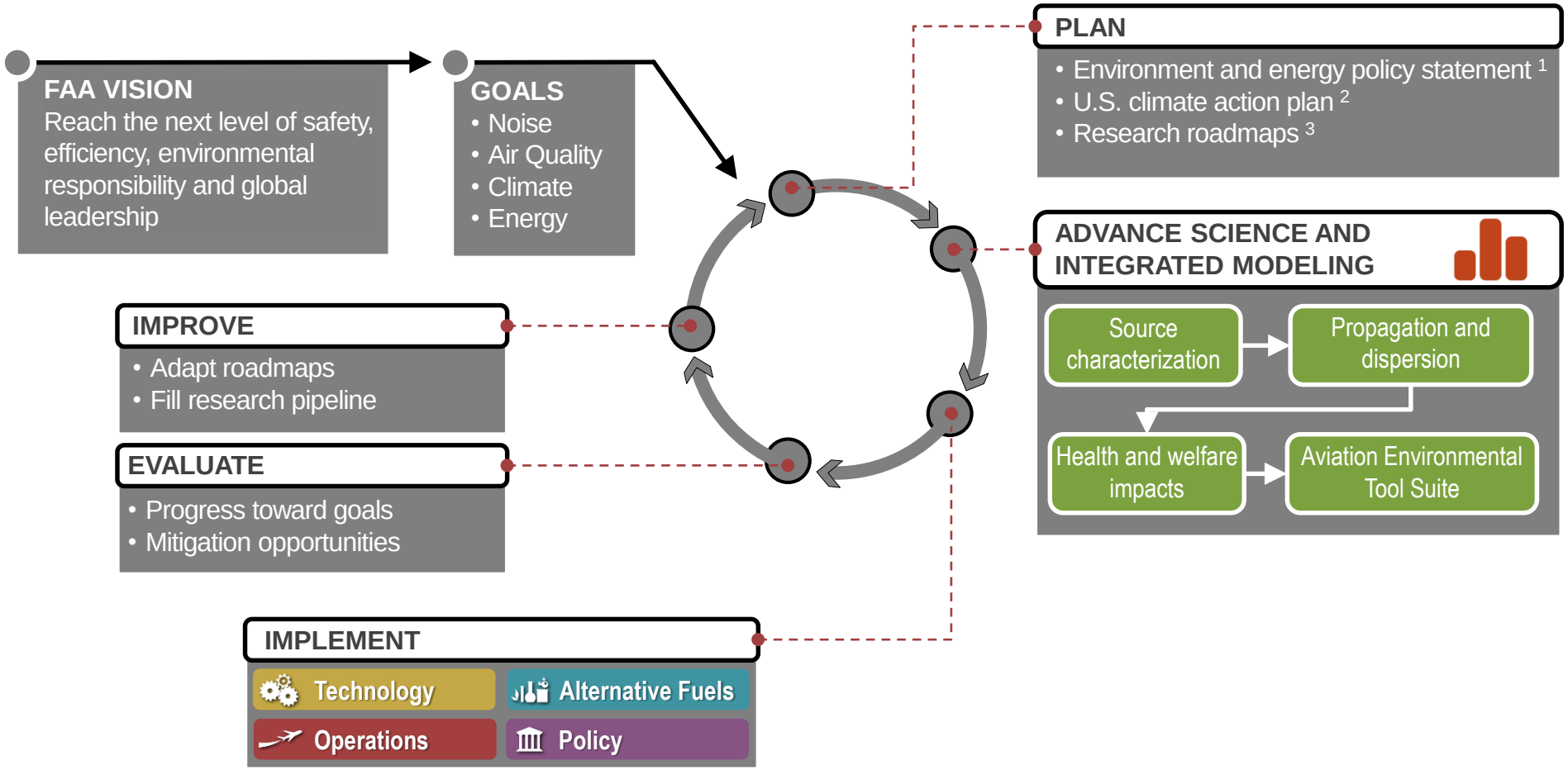
Aviation Environmental Challenges

- Aviation impacts community noise, air quality, water quality, energy usage, and climate change
- Environmental impacts from aviation could pose a critical constraint on capacity growth
- FAA are pursuing aircraft technology, alternative jet fuels, operations, and policy measures to address the environmental challenges facing aviation

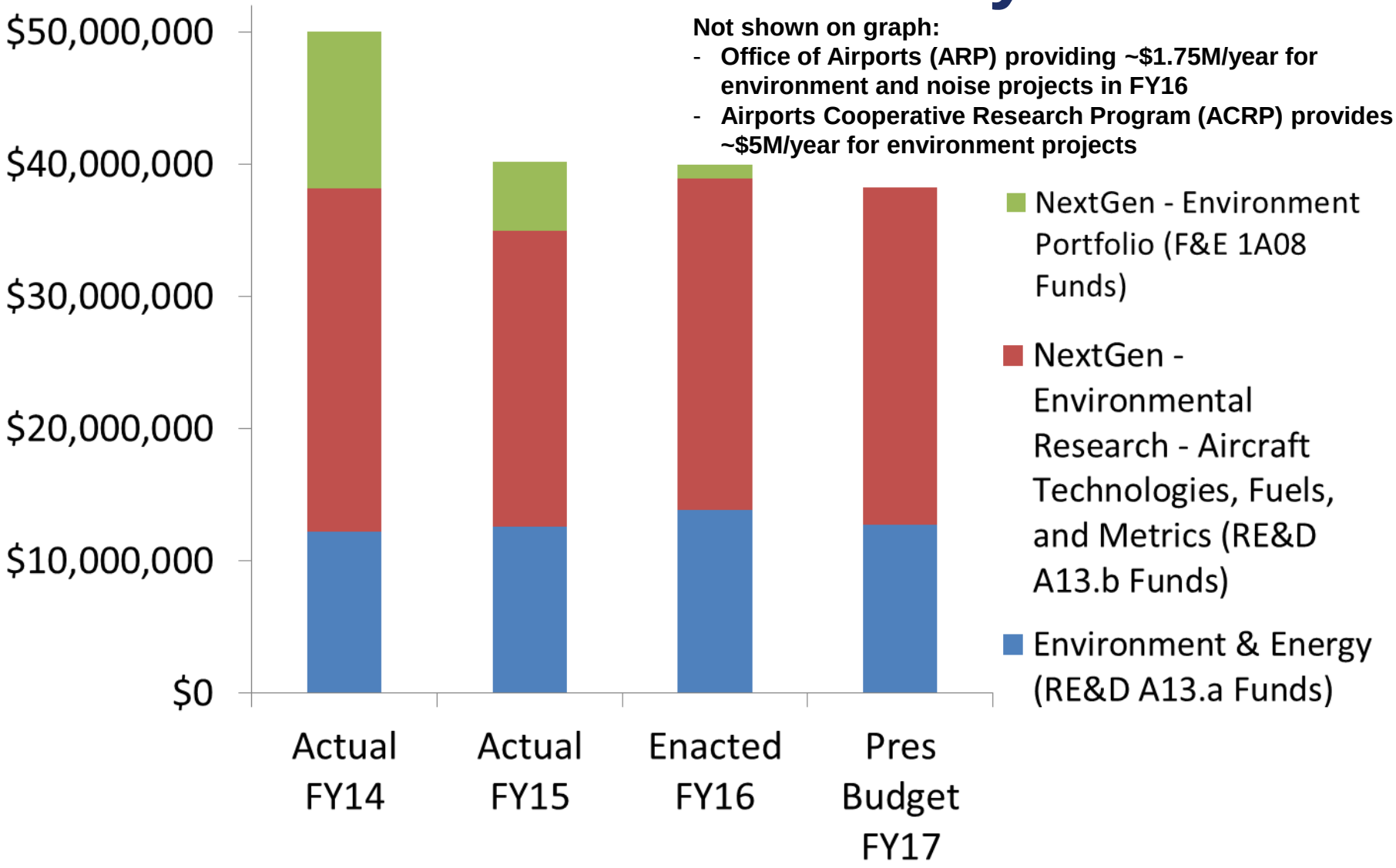
Environmental & Energy Strategy



Notes:

1. Aviation E&E Policy Statement (Federal Register 77-141, 2012): http://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/media/FAA_EE_Policy_Statement.pdf
2. U.S. Aviation GHG Emissions Reduction Plan: http://www.icao.int/environmental-protection/Pages/ClimateChange_ActionPlan.aspx
3. Environment and Energy Website: http://www.faa.gov/go/environment

FY14-17 Financial Summary



Not shown on graph:

- **Office of Airports (ARP) providing ~$1.75M/year for environment and noise projects in FY16**
- **Airports Cooperative Research Program (ACRP) provides ~$5M/year for environment projects**

ASCENT Funding

ASCENT Funding:

- **FY14 - $11.8M**
- **FY15 - $7.4M**
- **FY16 - $10.9M**

$30M investment over 3 years of operation

2016 Notice of Funding Opportunities (NFOs)

NFO	Project Title
2016-39	Naphthalene Removal Assessment
2016-40	Quantifying uncertainties in predicting aircraft noise in real-world situations
2016-41	Identification of noise acceptance onset for noise certification standards of supersonic airplanes
2016-42	Acoustical Model of Mach Cut-off Flight
2016-43	Noise Power Distance Re-evaluation
2016-44	Noise Reduction Analysis of Advanced Operational Procedures
2016-45	Takeoff/Climb Analysis to Support AEDT APM Development
2016-46	Surface Analysis to Support AEDT APM Development
2016-47	Background Noise Evaluation
2016-48	Analysis to Support the Development of an Engine nvPM Emissions Standard

ASCENT Projects Timeline

New Projects (based on NFOs)

- **Mar 25 –NFOs go out to COE**
- **Apr 15 – COE universities submit NFOs to AEE**
- **Apr 29 – AEE selects team**

Paperwork submission

- **May 15 – proposal submitted to grants.gov (all grants)**
- **Aug 1 – earliest start dates in the paperwork for new grants**

Some Recent Accomplishments

- ASCENT researchers were instrumental to the successes of the recent CAEP/10 meeting
- Under ASCENT Project 14, researchers from MIT and Georgia Tech provided technical support to the development of the aircraft CO_2 standard.
- Under ASCENT Project 2, researchers from MS&T were instrumental to the development of a Particulate Matter standard. They not only helped to develop the particulate matter (PM) measurement system that was used to gather the data to support the standard, but they used it extensively to quantify the PM emissions from a wide range of gas turbine engines.
- Under ASCENT Project 1, researchers from MIT and Purdue collaborated to conduct an analysis of the potential for alternative jet fuels to help the aviation industry meet its long-term goals to reduce CO_2 emissions. They also supported development of an LCA methodology to include alt fuels within the global market based measure for international aviation.
- Under ASCENT Project 7, researchers from Penn State supported preliminary efforts to examine a new supersonic noise standard that could allow for the resumption of supersonic commercial flights.
- Many ASCENT researchers provided input to the Impacts Science Group White Papers that summarize the state of the science on noise, air quality, climate, and climate adaptation.

For highlights of the CAEP/10 meeting, please visit::
http://www.icao.int/Newsroom/Pages/ICAO-Environment-Committee-Wraps-up-Landmark-10th-Meeting.aspx