



Sustainable Aviation Fuel (SAF) Overview



Sea-Air-Space
3 April 2023



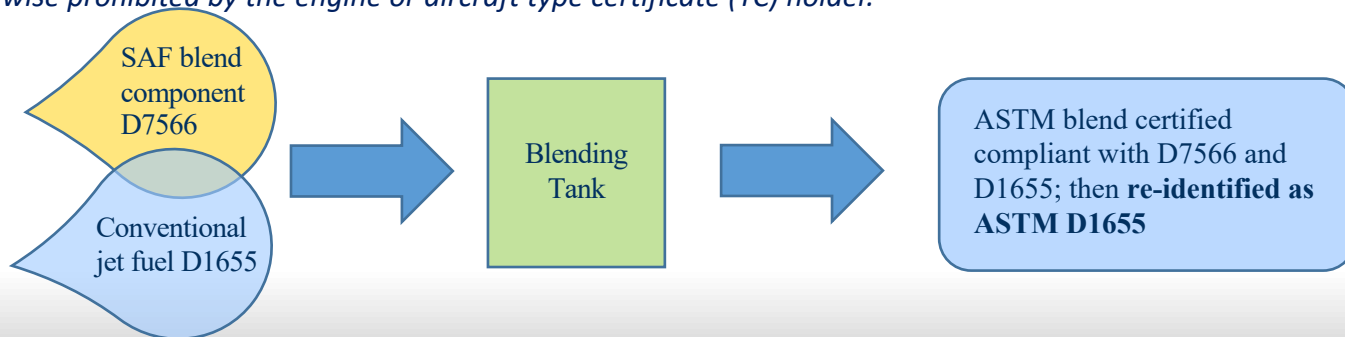
Office of Energy Management
COMDT (CG-46)



SAF Airworthiness



- *Special approval is NOT needed to use SAF*
 - SAF is produced to the requirements of ASTM D7566 and re-identified as ASTM D1655 jet fuel (Jet A)
- FAA Special Airworthiness Information Bulletin (SAIB) NE-11-56R4
 - “...jet fuel made from the following synthetic blending components that meet the requirements of ASTM International Standard D7566 are acceptable for use on aircraft and engines certificated for operation with D1655 Jet A or Jet A-1 jet fuel if they are re-identified as D1655 fuel.”
 - When D7566 jet fuels are re-identified as D1655 fuel, they meet all the specification requirements of D1655 fuel and, therefore, meet the approved operating limitations for aircraft and engines certificated to operate with D1655 fuel, unless otherwise prohibited by the engine or aircraft type certificate (TC) holder.





USCG Aircraft



- **Rolls Royce**

- HC-130H
- HC-130J
- HC-27J

- **Approved to operate on SAF**

- Rolls-Royce permits the operation of Rolls-Royce military engines using synthetic fuel blends meeting ASTM D1655 (D7566) requirements.
- Synthetic fuels in accordance with ASTM D1655/D7566 are suitable for unrestricted use for engines that list ASTM D1655 as an approved fuel.
- Fuels produced to D7566 are then re-identified and sold on the market as ASTM D1655 Jet A/A-1 fuel. For this reason, Rolls-Royce does not list D7566 as an approved fuel type in our manuals, even though they are considered an approved fuel.





USCG Aircraft, cont.



- General Electric

- HC-144A
- MH-60T
- **All of GE's CT7/T700 engines are approved to operate on SAF**
 - CT7 Engine | GE Aerospace
- GE approves the use of synthetic process pathways as defined by ASTM D7566 to produce Jet A/A-1, and the use of such fuel in all GE commercial and military aviation engine products that allow Jet A/A-1 use.

- Safran

- MH-65E
- **All of Safran helicopter engines are approved to operate on SAF**
 - Arriel 2C2-CG Maintenance Manual lists all approved fuels for use. Fuels meeting ASTM D1655 including its latest revision (captures the various approved synthetic compounds) are listed as applicable.





Climate Strategies



- US Coast Guard Climate Framework

- “Innovation is key to reducing greenhouse gas emissions and energy dependence.”
- Line of effort 3, Priority Action 1:
 - “Reduced carbon fuels, offshore wind, port infrastructure modernization, and emerging technologies are all poised to change the Marine Transportation System (MTS).”

- US Air Force Climate Action Plan

- By the end of 2025, two operational bases could be using at least 10% SAF fuel blends, but only if it’s the same/less cost than traditional aviation fuel.





Operational Energy Strategy Nexus (e.g. Contested Logistics Working Group)



- Energy Substitution and Diversification
- Supply Chain Resilience
- “Pursue pilot demonstration projects for on-site generation and consumption of alternative energy sources.”
- At least two demonstrations of SAF in close proximity to existing SAF production refineries (FYs 2023-2024)
- Allies and Partners nexus is operationally forecasted





Policy

SAF Presidential Grand Challenge

- MOU with DOE, DOT, and USDA
 - Expand SAF production and use
 - Reduce cost
 - Enhance sustainability
- Goals
 - Achieve a minimum of 50% reduction in life cycle GHG emission compared to petroleum fuel
 - By 2030, produce at least 3 billion gallons of SAF per year
 - By 2050, produce sufficient SAF to meet 100% of aviation fuel demand (projected 35 billion gallons per year)

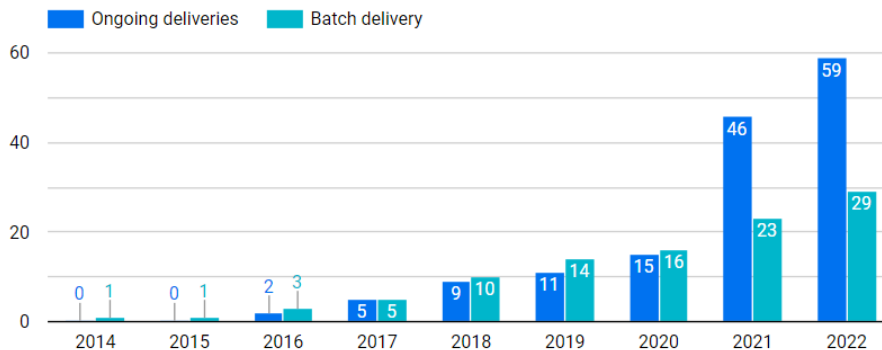
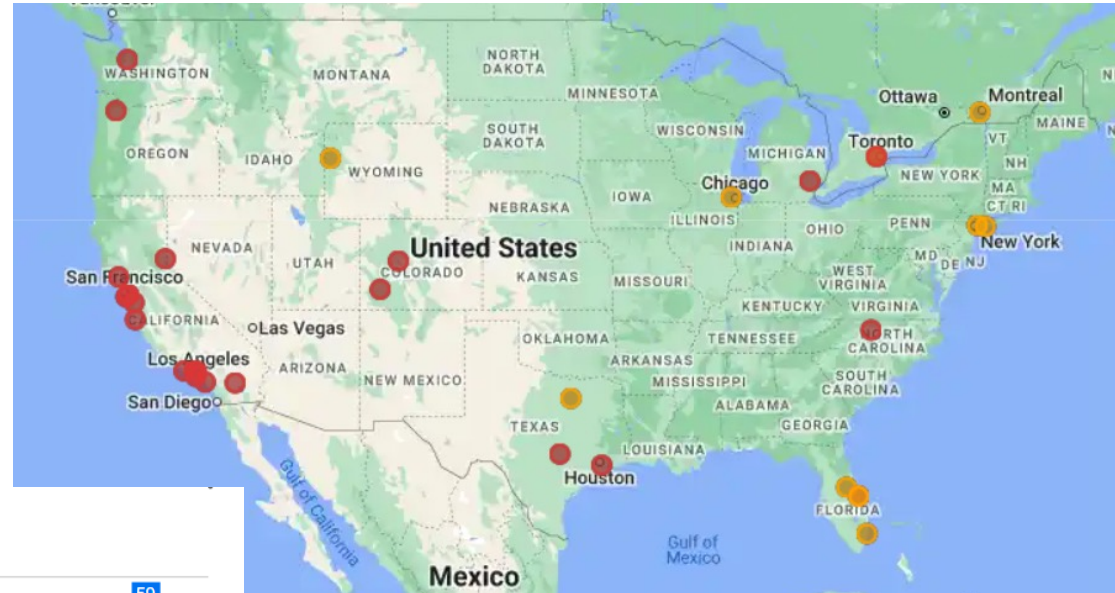




SAF at Commercial Airports



- US map (right):
 - Red: Ongoing delivery
 - Orange: Batch delivery
- Chart (below)
 - SAF availability at worldwide airports



Source: ICAO, International Civil Aviation Organization 12/2022





SAF at Commercial Airports (cont.)



Figure 2. Major U.S. refined products pipelines carrying jet fuels (Airlines for America 2018) and the 10 largest airports by traffic volume





USCG Partnerships



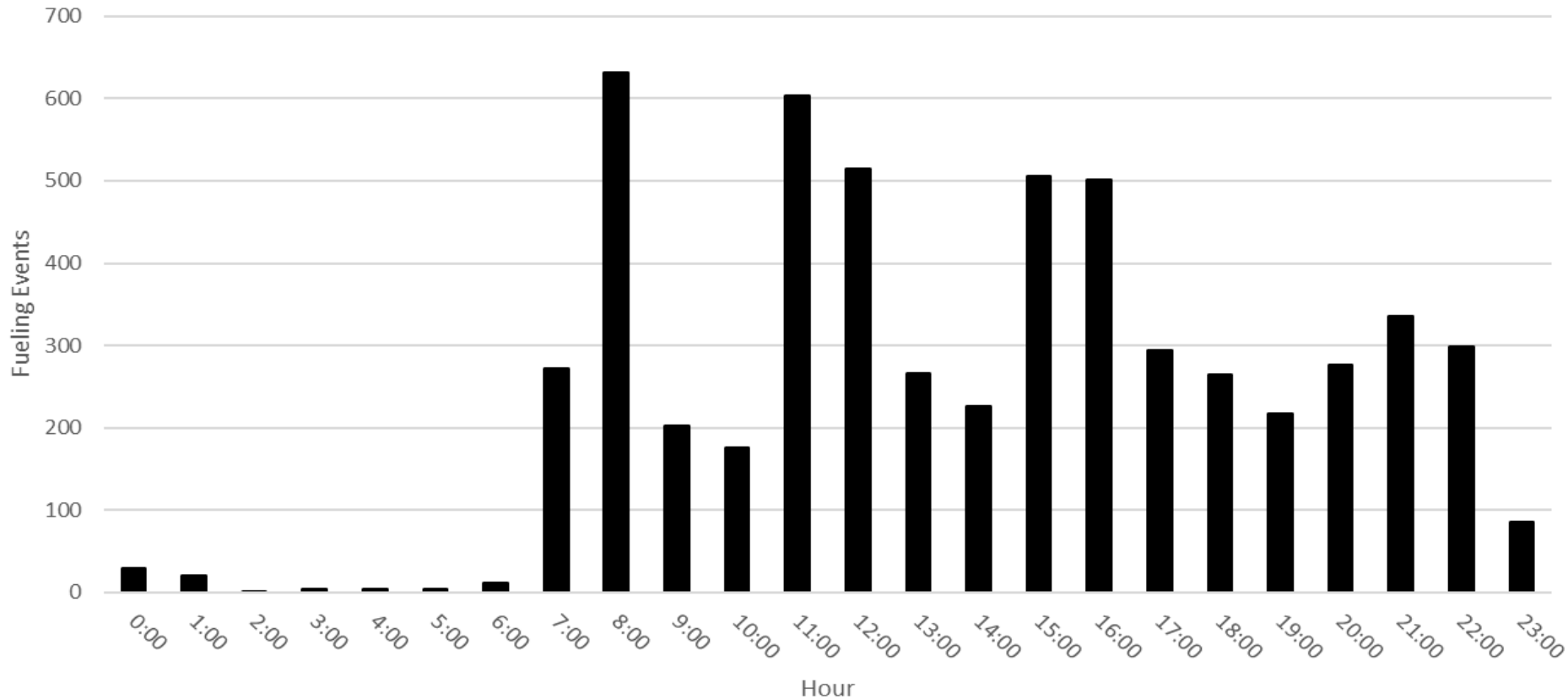
- DHS OCRSO
 - Approved IRA funded project for *demonstration*

- DLA Energy
 - Procurement assistance



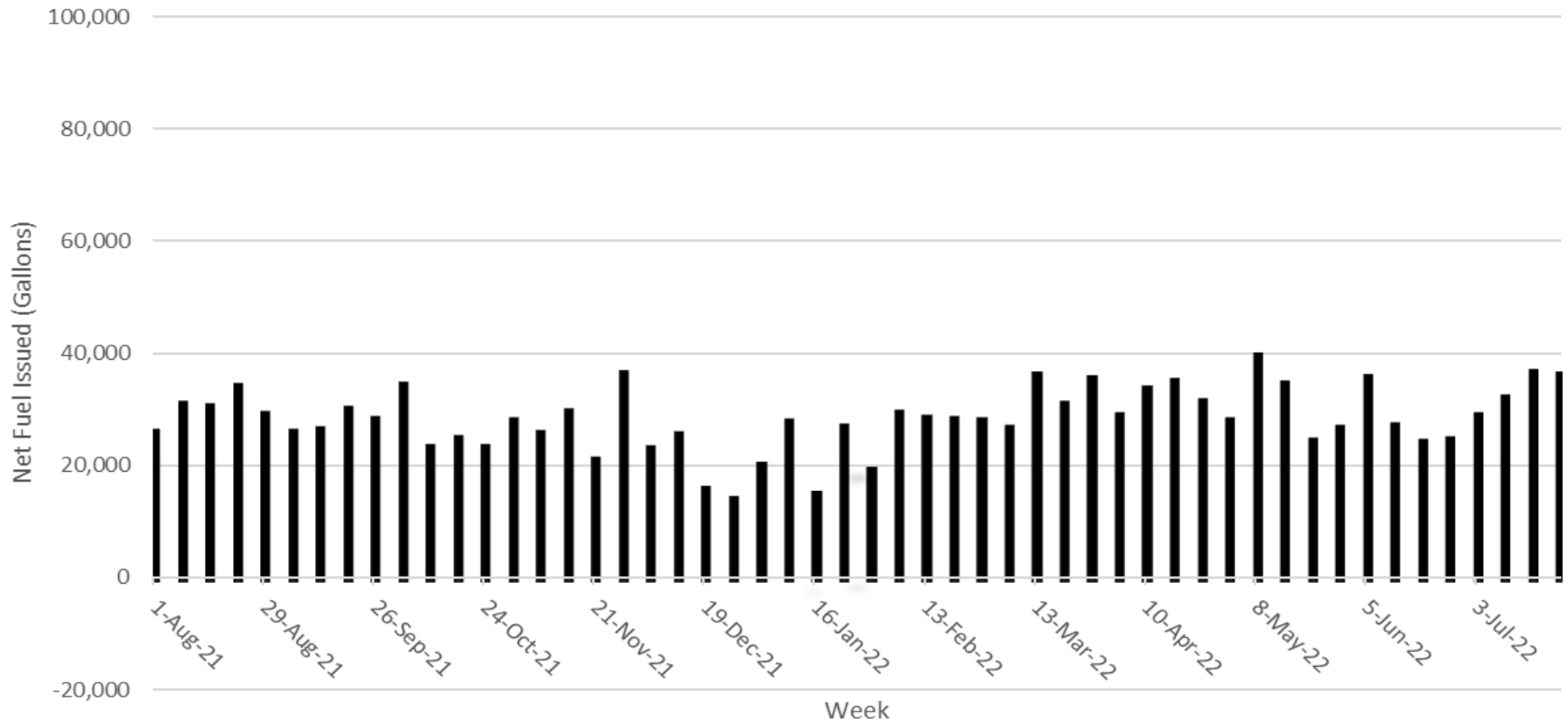


Representative AIRSTA Time of Use Analysis





Representative AIRSTA Weekly Demand





Questions

