

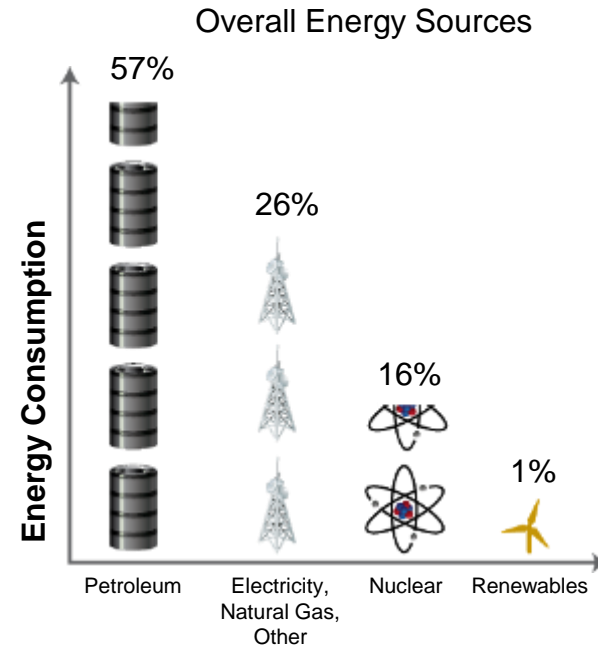
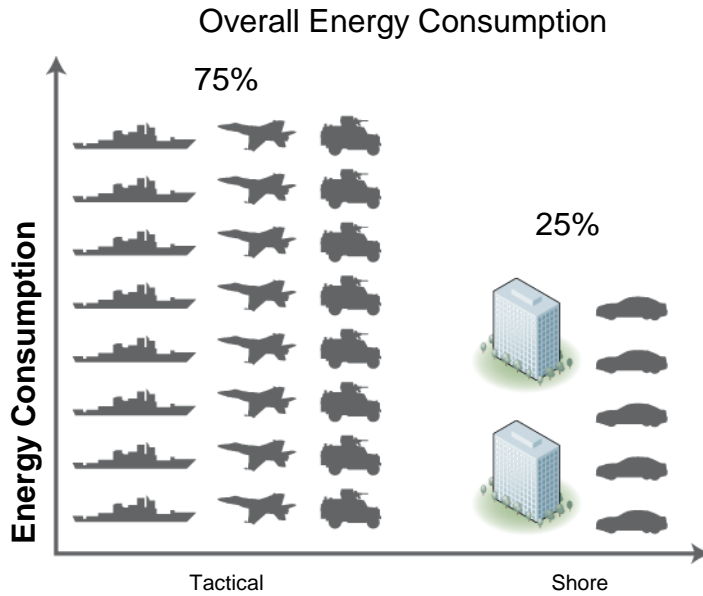


Advanced Fuels and Department of Navy

**Prepared for:
Southwest Energy Innovation Forum
October 18, 2010**

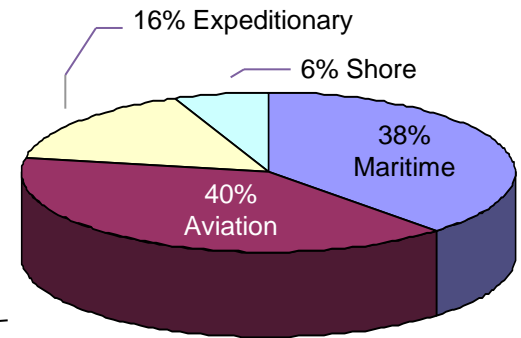
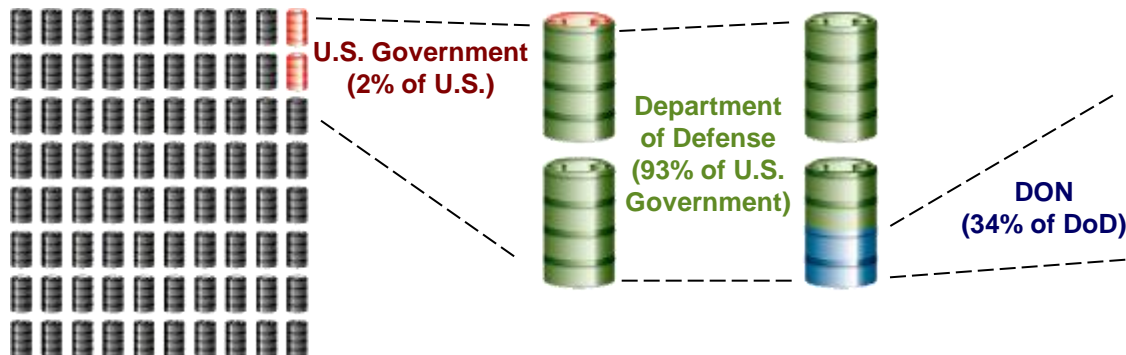


Naval Energy Profile



U.S. Petroleum Consumption

Naval Petroleum Consumption in Perspective





SECNAV Energy Goals



In October 2009, the Honorable Ray Mabus announced five Energy Goals:

Energy Efficient Acquisition

Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings

Sail the “Great Green Fleet”

DON will demonstrate a Green Strike Group in local operations by 2012 and sail it by 2016

Reduce Non-Tactical Petroleum Use

By 2015, DON will reduce petroleum use in the commercial fleet by 50%

Increase Alternative Energy Ashore

By 2020, at least 50% of shore-based energy requirements will come from alternative sources; 50% of DON installations will be net-zero

**Increase Alternative Energy Use
DON-Wide**

By 2020, 50% of total DON energy consumption will come from alternative sources

The Navy Is Moving Forward On These Aggressive Targets



Petroleum Reduction in Non-Tactical Vehicles



DON will reduce petroleum use in the commercial fleet by 50% by 2015, through the increased use of flex fuel, hybrid electric, and neighborhood electric vehicles.

Navy Initiatives

- 35% of fleet is alternative fueled capable vehicles
- 1000 conventional vehicles replaced with neighborhood electric vehicles

Currently: 30 E85/B20, 12 CNG stations

Planned: 2 E85, B20, 2 Electric stations planned

Marine Corps Initiatives

- 24% of fleet is alternative fueled capable vehicles
- 340 conventional vehicles replaced with neighborhood electric vehicles

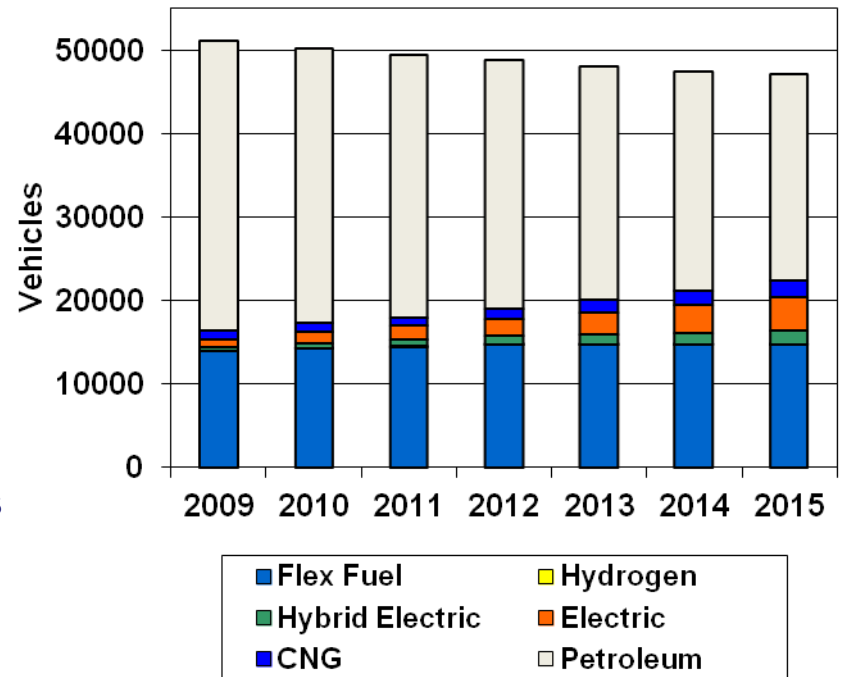
Currently: 17 E85/B20, 7 CNG, 1 Hydrogen stations

Planned: 4 E85 and 1 Hydrogen stations planned

Baseline based on FY2009

- Marine Corps: 6.8M gallons
- Navy: 9.3M gallons

Naval Fleet Composition by Type





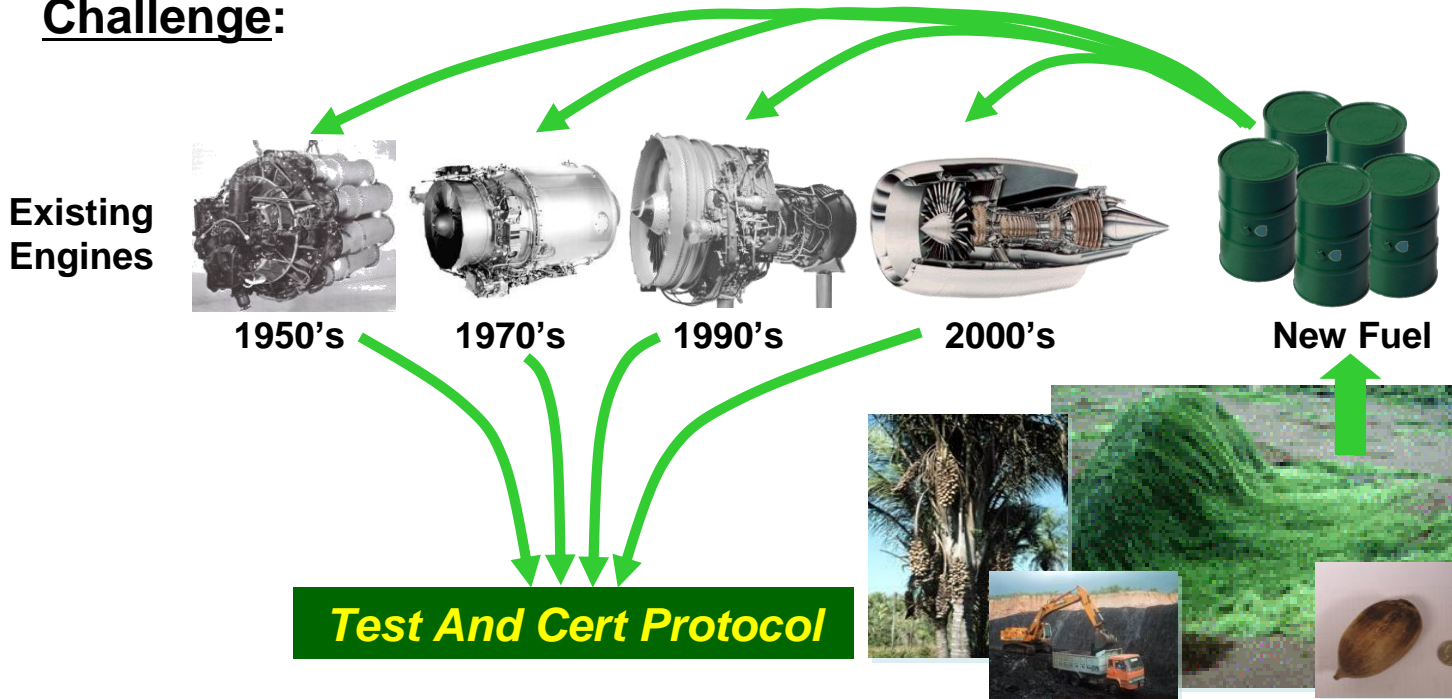
Alternative Fuels

Assumption:

Alternative fuel must be **a drop-in replacement, invisible to the operator**

- ✓ Meets fuel performance requirements
- ✓ Requires NO change to aircraft or ship
- ✓ Can be mixed or alternated with petroleum fuel
- ✓ Requires NO change to infrastructure

Challenge:



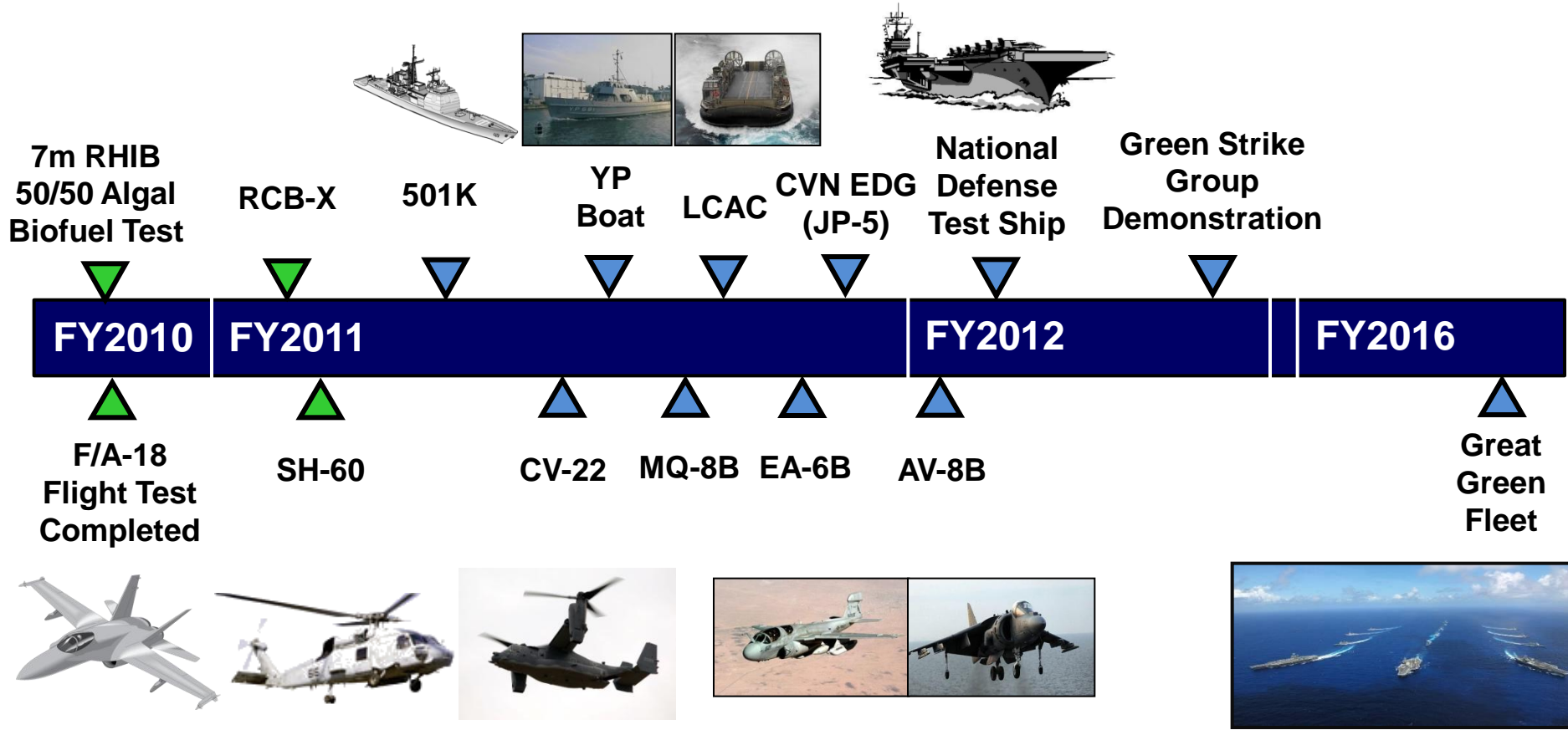
Courtesy Mark Rumizen - FAA



Great Green Fleet Certification



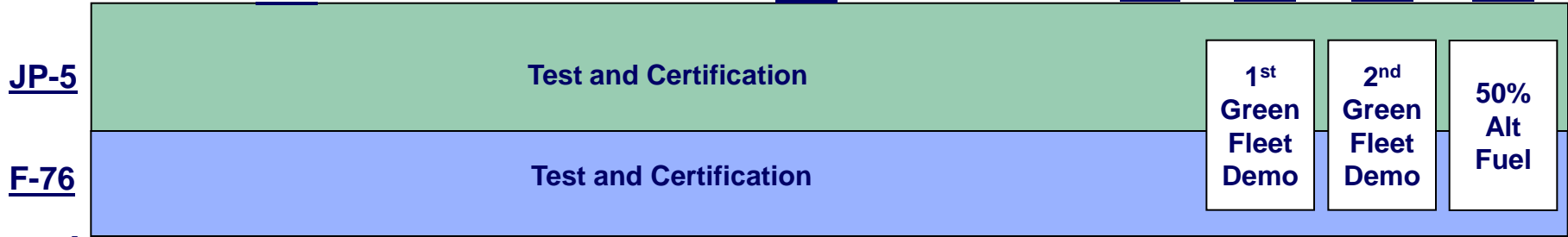
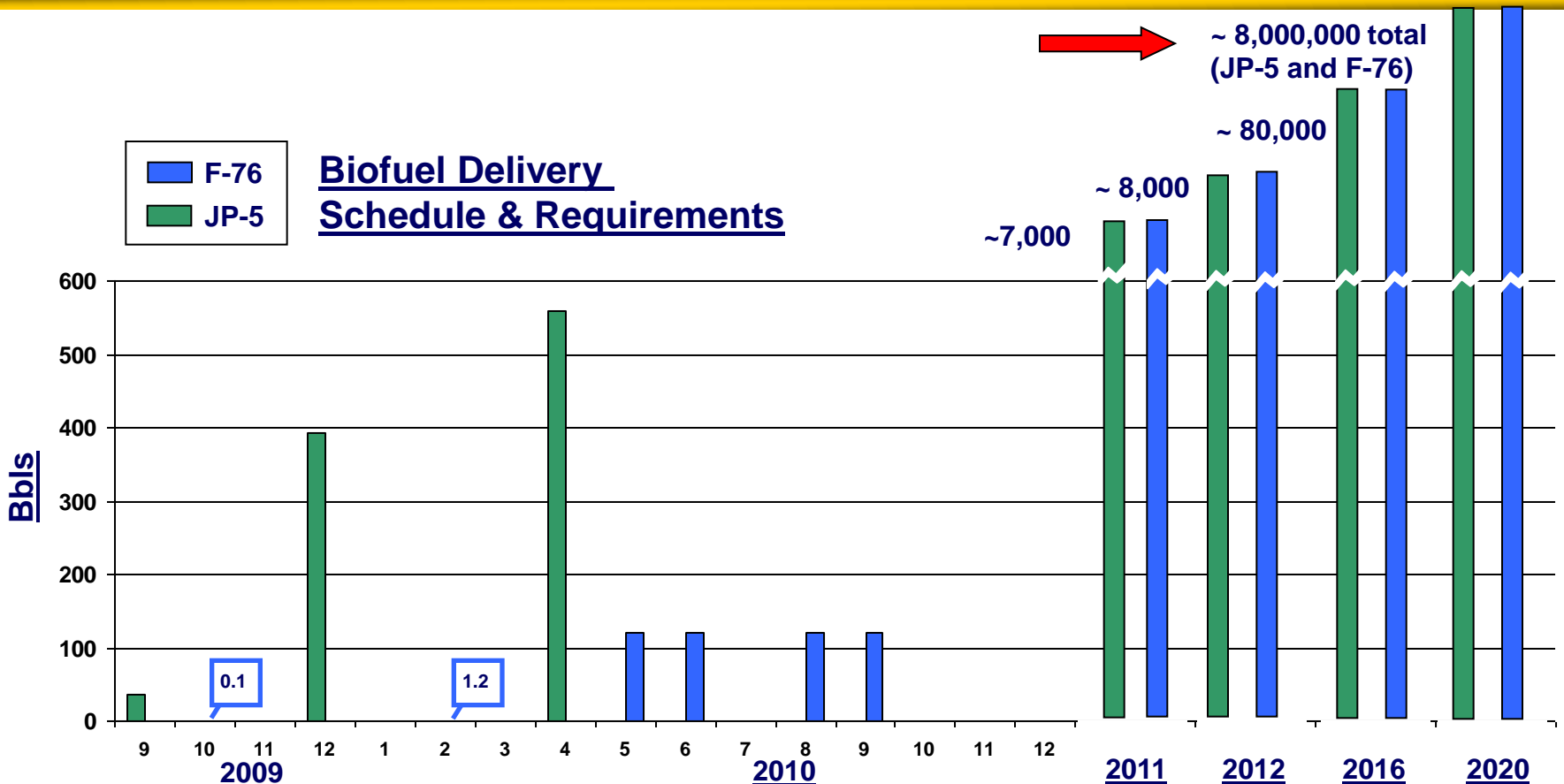
Ship Progress



Aviation Progress



Great Green Fleet Biofuel Needs





Biofuel – Partnerships and Fueling the Fleet

Department of Energy



- DOD-DOE MoU
- DON/DOE Renewable Energy working groups:
 - Energy Efficiency
 - Renewable Energy
 - Smart Grid
 - Acquisition

DLA Energy



- Long term contracts
- Preferred feedstocks
- Coordinating Green Initiative for Fuels Transportation Pacific (GIFTPAC) / Biofuels Action Team (BAT) efforts

Department of Agriculture



- USDA partnership on crop/agricultural
- Working with agricultural community to develop a market for biofuels

Industry

- Commercial Aviation Alternative Fuel Initiative (CAAFI)
- Roundtable on Sustainable Biofuels (RSB)
- Carbon War Room
- Top 25 Corporations
- Venture Capitalists



Creating a Demand for Biofuels



Airline industry and the Department of Defense collectively consume 1.5 million barrels of jet fuel per day

Defense Logistics Agency – Energy and the Air Transport Association of America signed an Alternative Fuels Pact on March 19, 2010

- Shared goals of spurring the development and deployment of commercially viable and alternative aviation fuels
- Collaboration reinforces commitment to commercialization of jet fuel
- Developing key fuels for alternative energy effort



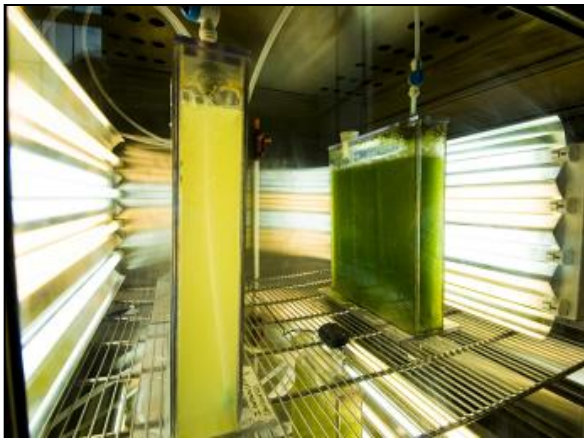
AIR TRANSPORT ASSOCIATION



USDA – DON Partnership



- Partnership to coordinate on biofuels and renewable energy
- Memorandum of understanding established agreement to:
 - Leverage expertise
 - Cooperate on strategy and plans
 - Collaborate on renewable energy projects
 - Support evaluation/implementation venues
- Hawaii was selected as the first region to advance partnership
- Hawaii Industry Forum in April 2010
- Current initiatives underway
 - DoD, DLA Energy, HECO coordination





Tom Hicks

Deputy Assistant Secretary of the Navy for Energy