



# *Advanced Fuels and Department of Navy*

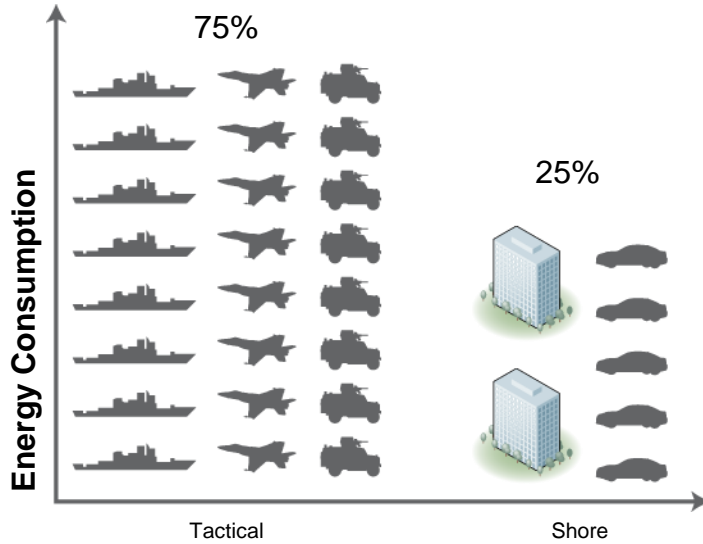
**Prepared for:  
Southwest Energy Innovation Forum  
October 18, 2010**



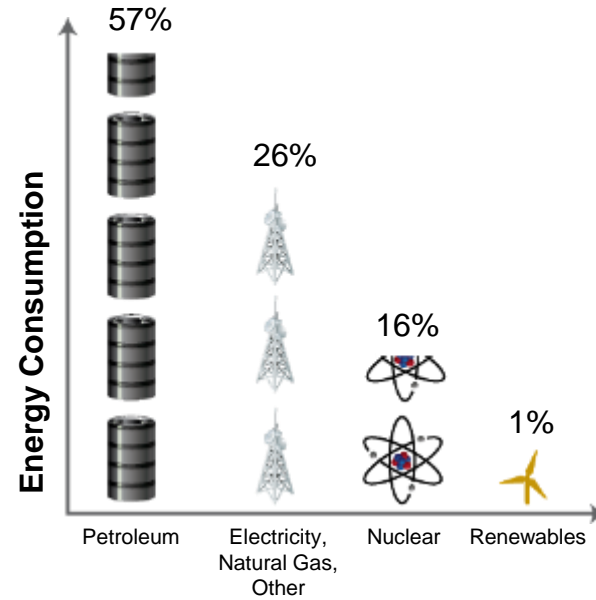
# Naval Energy Profile



### Overall Energy Consumption



### Overall Energy Sources

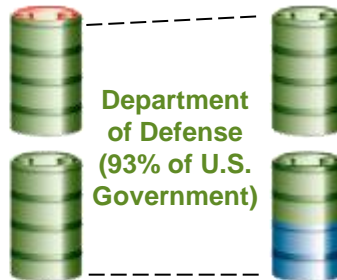


### U.S. Petroleum Consumption



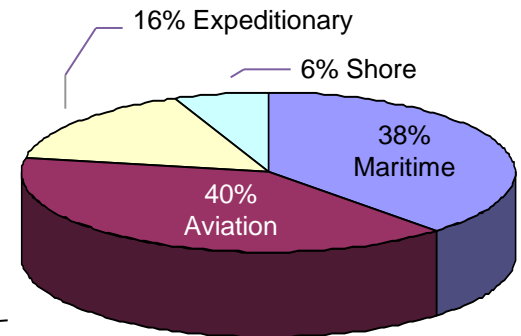
U.S. Government  
(2% of U.S.)

### Naval Petroleum Consumption in Perspective



Department of Defense  
(93% of U.S. Government)

DON  
(34% of DoD)





# 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

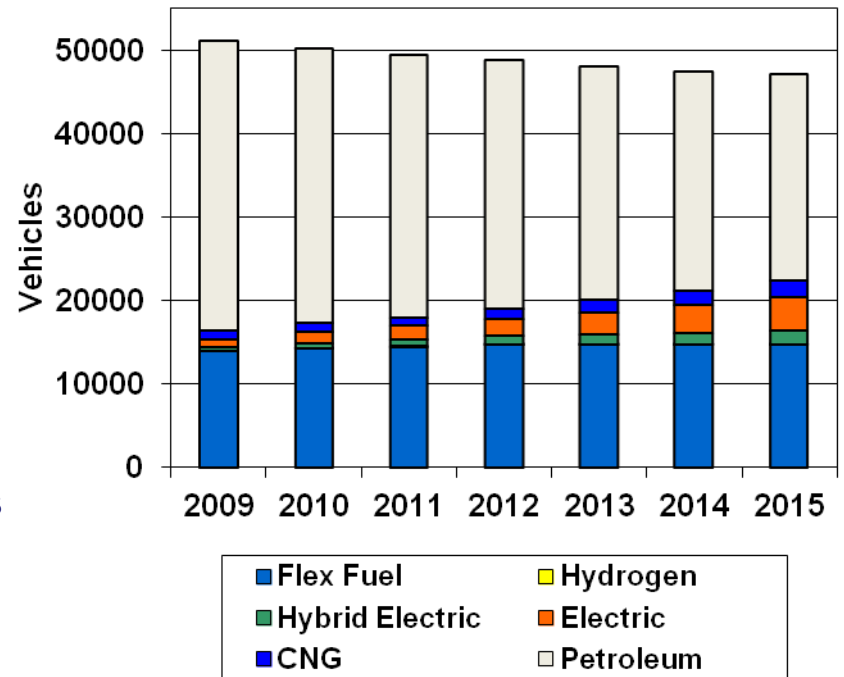
## Marine Corps Initiatives

- 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

Naval Fleet Composition by Type



## ***Baseline based on FY2009***

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



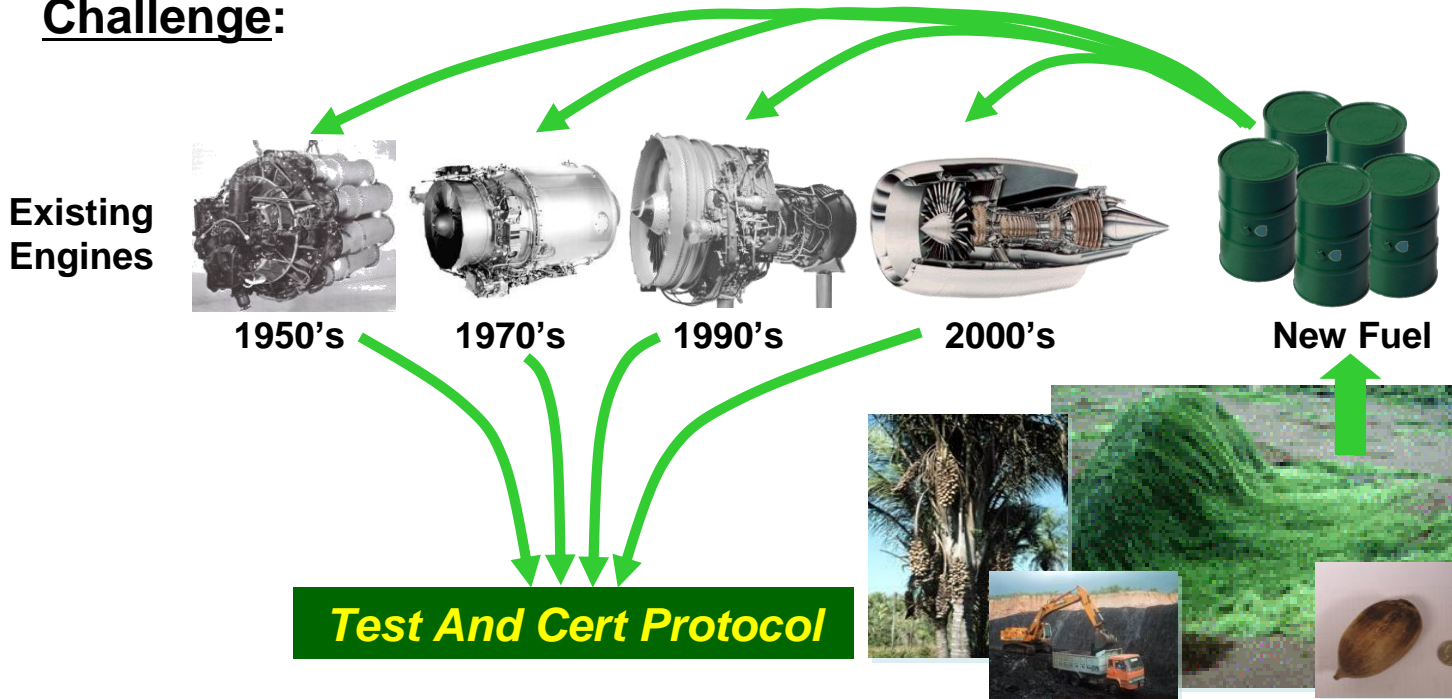
# Alternative Fuels

## 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:



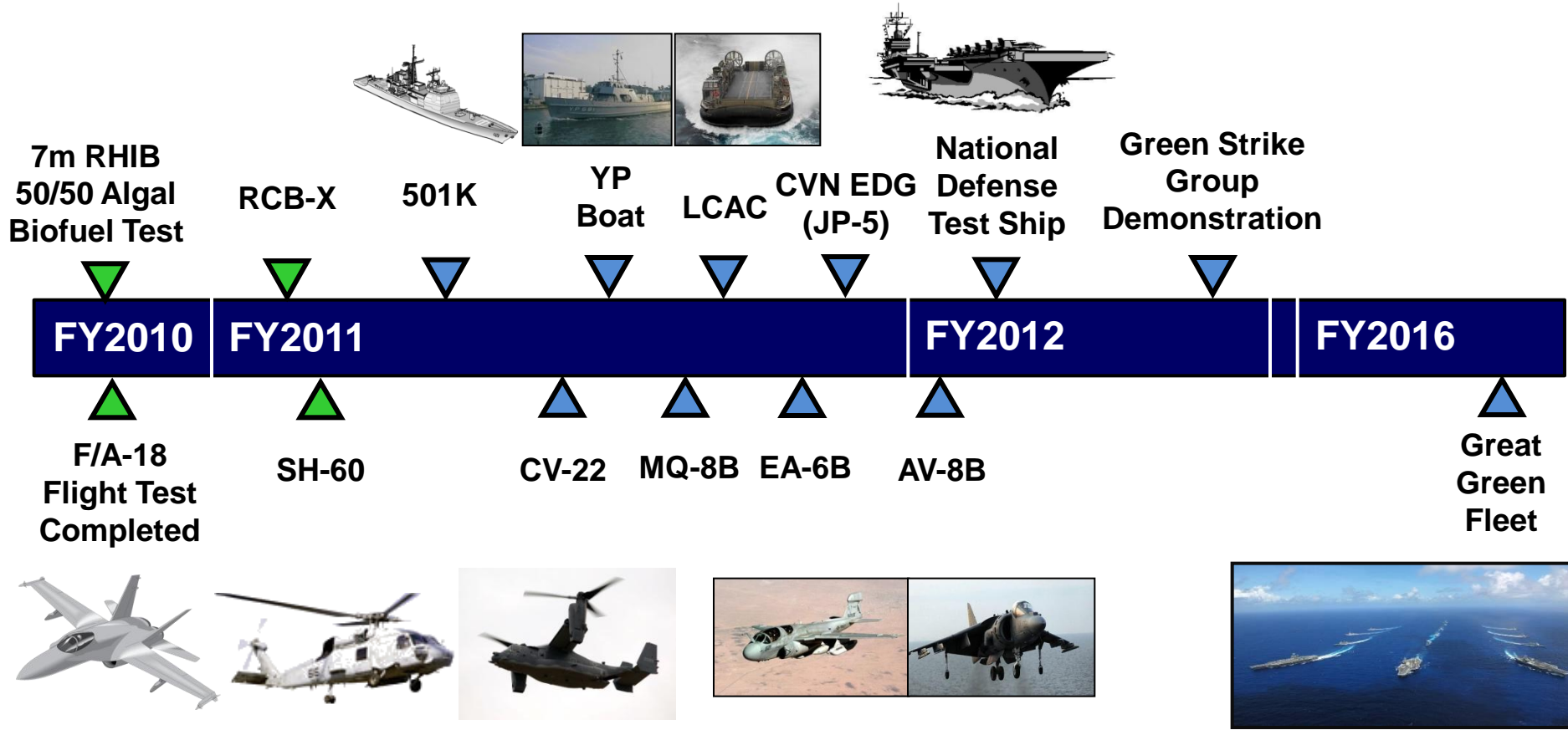
Courtesy Mark Rumizen - FAA



# Great Green Fleet Certification



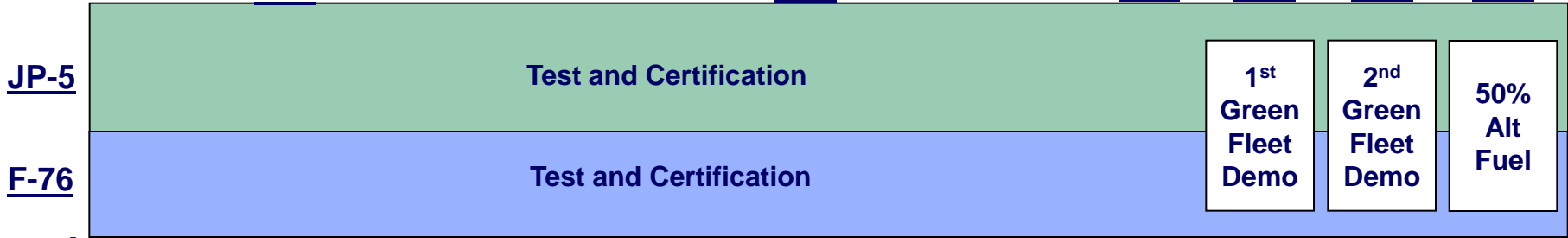
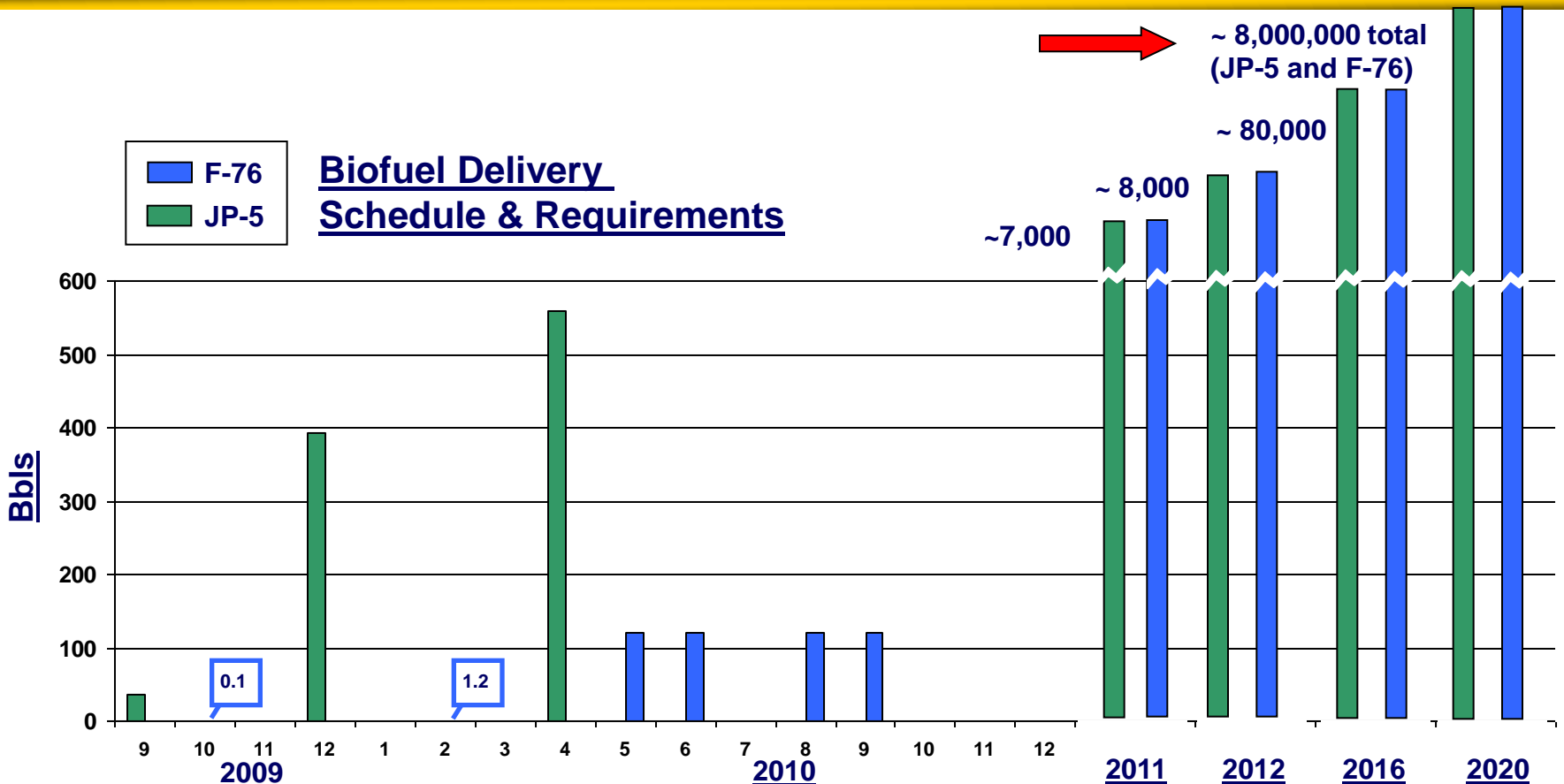
## Ship Progress



## 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



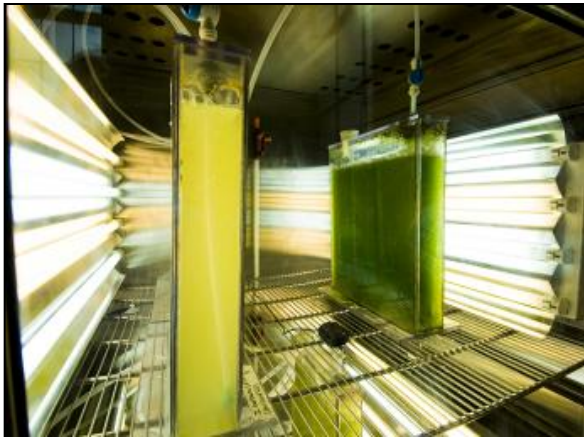
AIR TRANSPORT ASSOCIATION



# 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***