















# US Navy Tactical Fuels From Renewable Sources Program

*18 May 2012*

***Prepared For: Advanced Biofuel Industry Round Table***

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# Navy Fuels Specifications

- **At-Sea Operating Environment Places Additional Requirements on the Fuel Necessitating Navy Unique Specifications**

## JP-5: MIL-DTL-5624

- At-Sea Aviation Fuel (aircraft and non-aircraft)
- Critical Properties
  - Flash Point – Min 140 F
  - Water Separation
  - Stability (Storage and Thermal)
  - Energy Density
  - Cetane (New Req't For Non-Petroleum Sources/blends)
- 10.8 Million Barrels Used In FY11

## F-76: MIL-DTL-16884

- Ship Propulsion Fuel (Gas Turbine, Diesel, Boiler)
- Critical Properties
  - Flash Point – Min 140 F
  - Water Separation
  - Stability (Storage)
  - Energy Density
  - No Oxygenates
- 14.9 Million Barrels Used in FY11

## Key Fuel Test and Certification Entrance Criteria

- Drop-in Fuel Potential : Spec, Fit For Purpose, Other Test Results
- Ability To Produce Sufficient Test Quantities
- Potential To Meet EISA 2007 Section 526 Requirements
- Timeframe to Produce Operational Quantities

**Not Replacing JP-5 or F-76:**
**Approving New Sources and Production Processes To Produce JP-5 and F-76**

# Navy Energy Goals

2020 Target :
8 Million bbls of JP-5/F-76

50% Alternative Energy by 2020

## Sail the Great Green Fleet

2012 (Complete):
- 10.7 K bbls

2016 Target :
- 40 K bbls JP-5
- 40 K bbls F76

2012 Green Strike Group Demo

2016 Great Green Fleet Sail

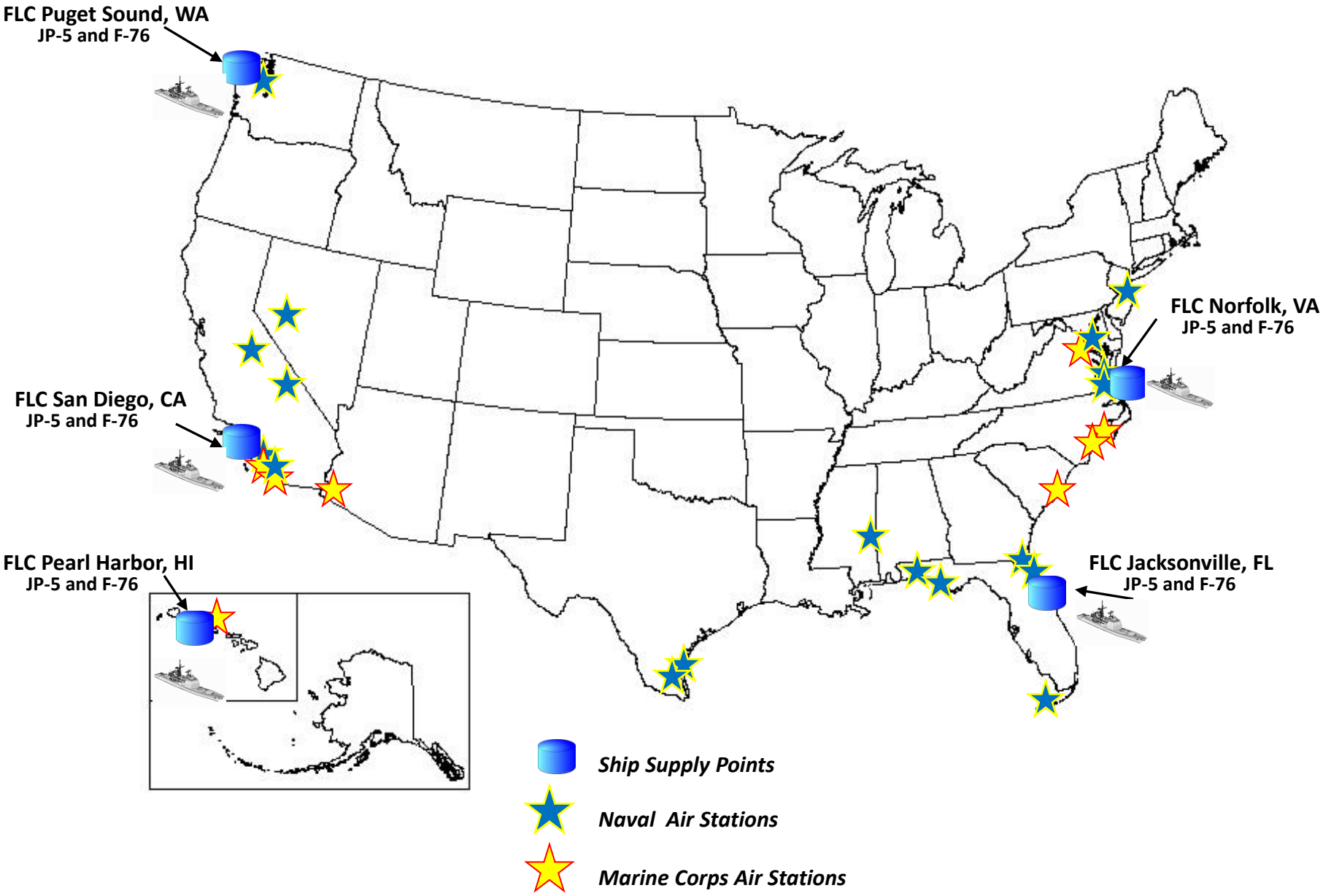
50% Net Zero Installations by 2020


50% Less Petroleum in Commercial Vehicles by 2015

**Must Be**
- Drop-in replacement
- Meets All Stakeholder R'qts
- EISA 2007 526 Compliant
- Cost Competitive

Energy Efficient Acquisition

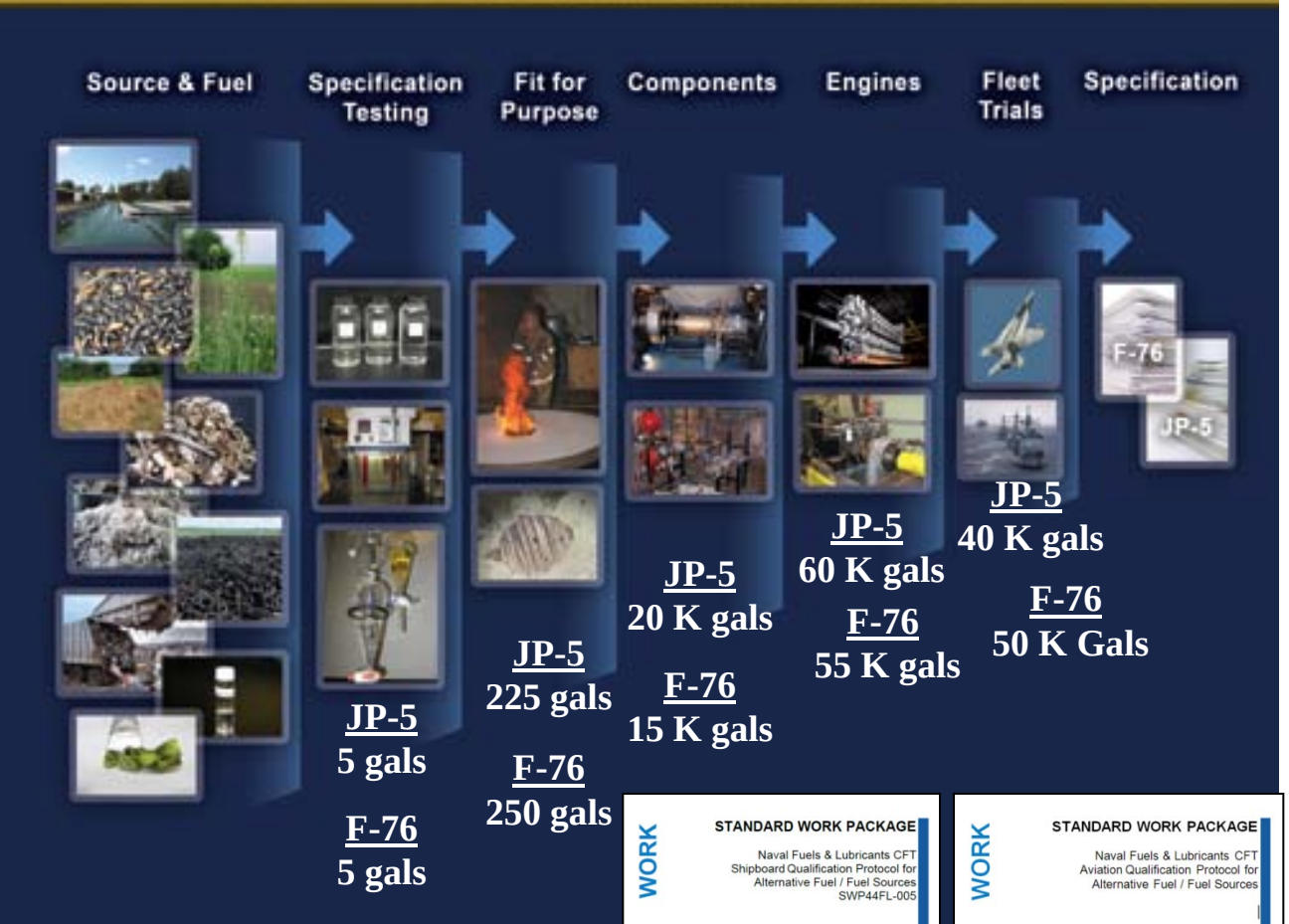
# *Navy and Marine Corps Sites*

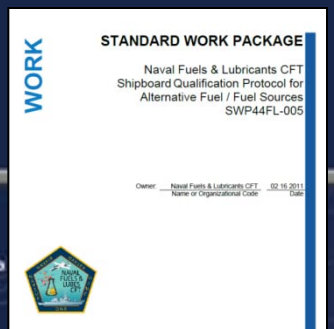


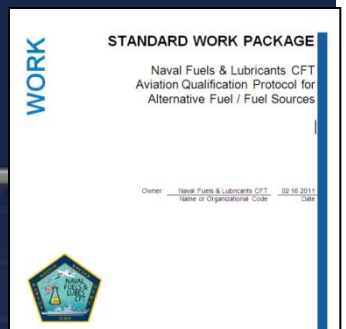
# Navy Test and Certification Team

# From Field to Fleet

*Certifying Drop-In Replacements*

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**Phase 1:**

- Chemical And Physical Property Similarity
  - Specification
  - Fit For Purpose

**Phase 2:**

- Performance Similarity
  - Materials
  - Components
  - Propulsion/Fuel Systems
  - Distribution Systems

**Phase 3:**

- Operational Similarity
  - Weapon System Trials

**Phase 4:**

- Long Term Operability
  - Field Trials

# Plan Forward

- **Summer 2012:  50/50 HEFA JP-5 Blend and 50/50 HEFA F-76 Blend Operational Testing (RIMPAC)**
- **Summer 2012: HEFA and FT 50/50 Blends added to JP-5 Spec**
- **Summer 2013: HEFA 50/50 blend added to F-76 Spec**
- **On-going: Spec and Fit-For Purpose Testing on Multiple Pathways at Navy's Pax River Fuels Lab**
- **Summer/Fall 2012: Initiate Alcohol to Jet Component Testing**