

# US Navy Great Green Fleet



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# Bulk Fuel Purchases / Farm to Fleet



- Rocky Mountain/ West Coast bulk fuels contract awarded for fuel delivery starting December 2015 awarded 77.6 MM gallons of F-76 with 10% synthetic fuels content (142 MM gallons total F-76)
  - Covers San Diego, Bremerton, Hawaii
  - Synthetic fuel supplied by AltAir (Paramount, CA) using the HEFA process
  - **Provides the fuel for RIMPAC 2016**
  - Solicitation for deliveries start 1 October 2016 recently closed
- Inland/ East/ Gulf Coast solicitation to be released shortly for fuel delivery starting 1 April 2017
  - Covers Norfolk, Mayport, and Jacksonville
  - Awardees announced 1 March 2017
- SECNAV Goals: 336 million gallons (neat) by 2020 for 50% of energy from alternative sources

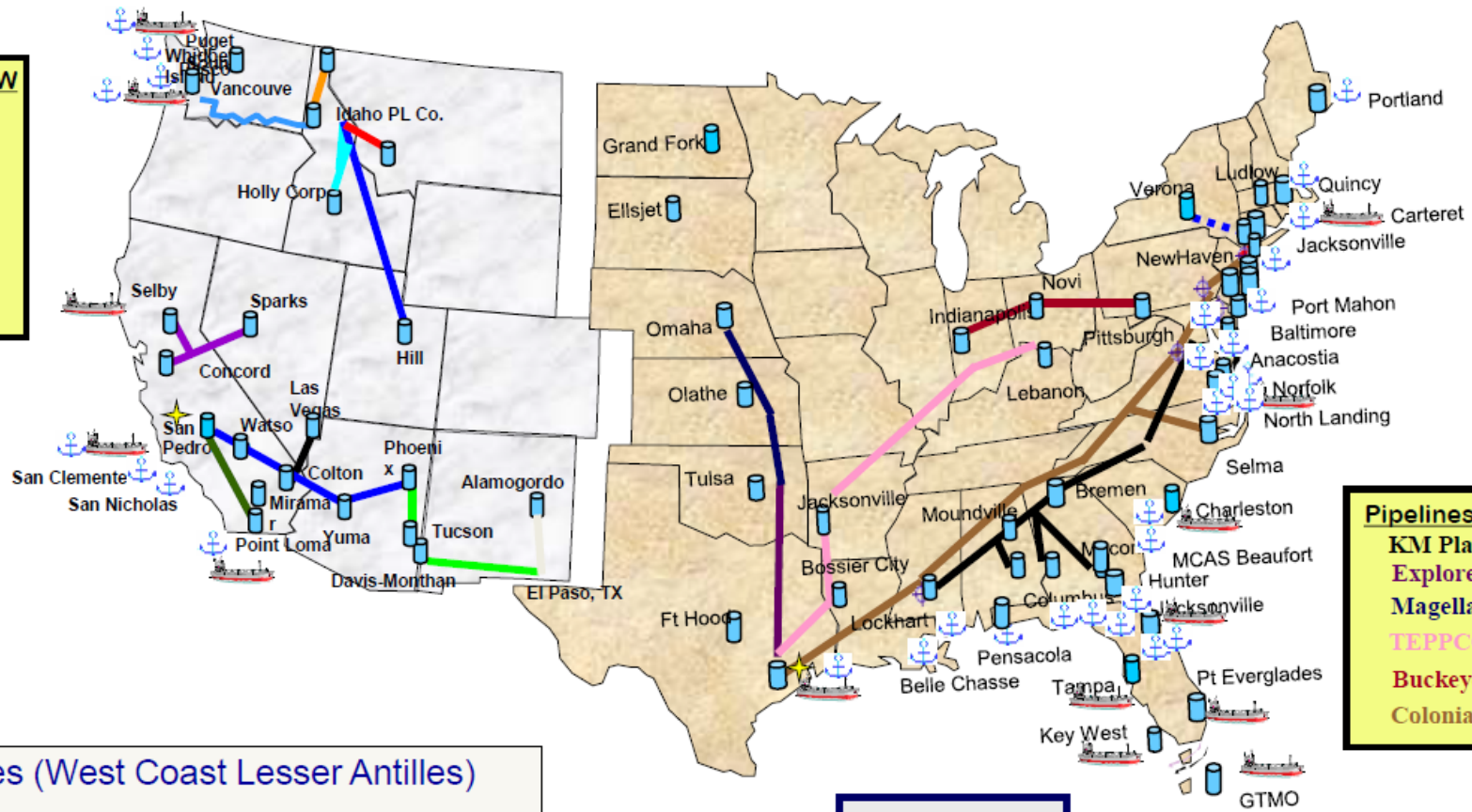


Rocky Mountain/West Coast  
Total JP-5 and F-76 volume  
431 MM gal (est)

Inland/East/Gulf Coast:  
Total JP-5 and F-76 volume – 379 MM gal

**Pipelines – AMW**

- Chevron 1
- Chevron 2
- Idaho
- Holly Corp
- KM - North
- KM - West
- KM - East
- CalNev



**Pipelines – AME**

- KM Plantation
- Explorer
- Magellan
- TEPPCO
- Buckeye
- Colonial

- 5 Time Zones (West Coast Lesser Antilles)
- 392 DFSPs
- 14 Major Pipeline Distribution Systems

**Legend**

- DFSPs
- Barge Load/Receipt Locations
- Tanker Load/Receipt Locations







# Great Green Fleet Launches



Jan 2016



**June 2016**







**July 2016: 11+ MM gal to 9 countries**










# Defense Production Act Advanced Drop-In Biofuels Production Project



Company	Location	Feedstock	Conversion Pathway	Fuels	Capacity (MM gpy)
	US Gulf Coast	Fats, Oils, and Greases	Hydroprocessed Esters and Fatty Acids (HEFA)	F-76	82
	McCarran, NV	Municipal Solid Waste	Gasification – Fischer Tröpsch (FT)	JP-5, 8	10.8
	Lakeview, OR	Woody Biomass	Gasification – Fischer Tröpsch (FT)	F-76, JP-5,8	12

- Fulcrum and Red Rock have announced major jet fuel offtakes (Southwest, United, Cathay Pacific)



# The Importance of Cert/Qual



- If you do not not test and qualify synthetic fuels, then you might as well cross off several of those types of fuel and limit what the jet can accept and where it can go.

SERVICE THIS AIRCRAFT  
WITH GRADE JP-4, 5, 8, 8+100,  
JET A, A-1, B OR NATO FUEL GRADE  
F-34, F-35, F-37, F-40, F-44





# Navy Synthetic Fuel Qualification Roadmap



**2017**

CHCJ Added to  
JP-5 Spec

**2016**

SIP Added to  
F-76 Spec

**2016**

SIP and ATJ  
Added to JP-5  
Spec

**2014**

FT & HEFA  
Added to F-76  
Spec

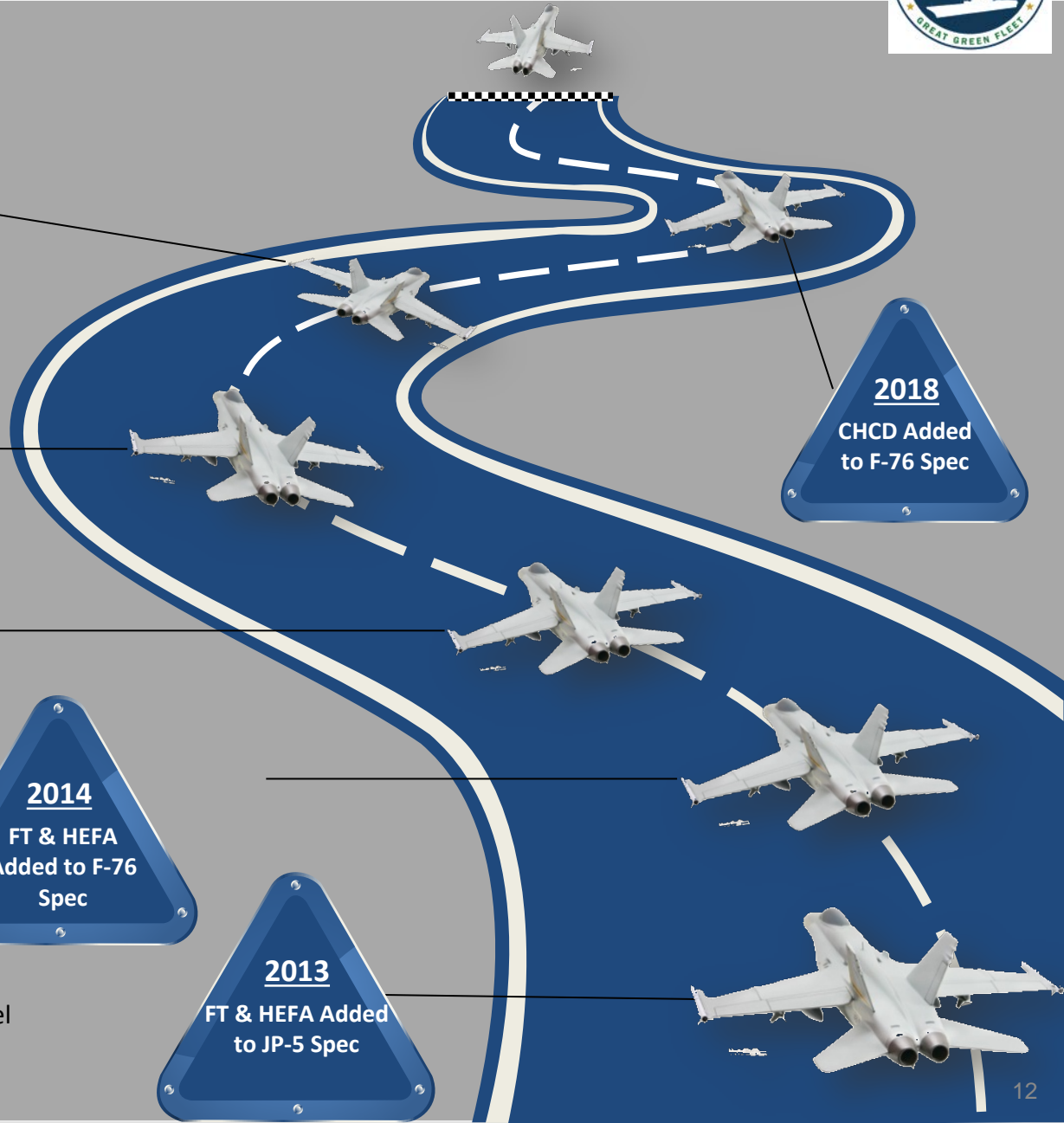
**2013**

FT & HEFA Added  
to JP-5 Spec

**2018**

CHCD Added  
to F-76 Spec

FT: Fischer-Tropsch  
HEFA: Hydrotreated Esters and  
Fatty Acids  
SIP: Synthetic Iso-Paraffins  
ATJ: Alcohol to Jet  
CHCD: Catalytic Hydrothermolysis Conversion Diesel  
CHJ: Catalytic Hydrothermolysis Conversion Jet





## Other Notable Progress



- The market is open. If it's in the MILSPEC, we'll take it. And we've made sure the other Services will too (someone has to lead)
- We offer a premium for renewable jet fuel derived from USDA-approved feedstocks (Commodity Credit Corporation)
- International markets are expanding... In RIMPAC, eight of other navies have agreed to use alternative fuels during the exercise. More to follow.



# Discussion Points



- Long-term contracts are limited to 5 years (+5 option years), are not part of normal business practice, and are for near term production (issued in September for deliveries beginning October the same year)
- Commodity Credit Corporation funds are non-recurring
- Congressional language, internal policy, and interpretation of the FAR has essentially pegged us to petroleum (cost competitive)
- Inclusion of jet fuel in Low Carbon Fuel Standards



# Synthetic Hydrocarbons in Aviation Fuels

2010: 50%

2016: 100%

