



DEPARTMENT OF THE NAVY

Biomass 2013



Chris Tindal
Director of Operational Energy, DASN Energy



Pacific Ocean USS Princeton (CG 59) pulls oiler USNS Henry J. Kaiser (T-AO 187)



Royal Australian Navy S-70B Sea Hawk helicopter

2012 GGF DEMONSTRATION



SECNAV and CNO aboard USS Chafee

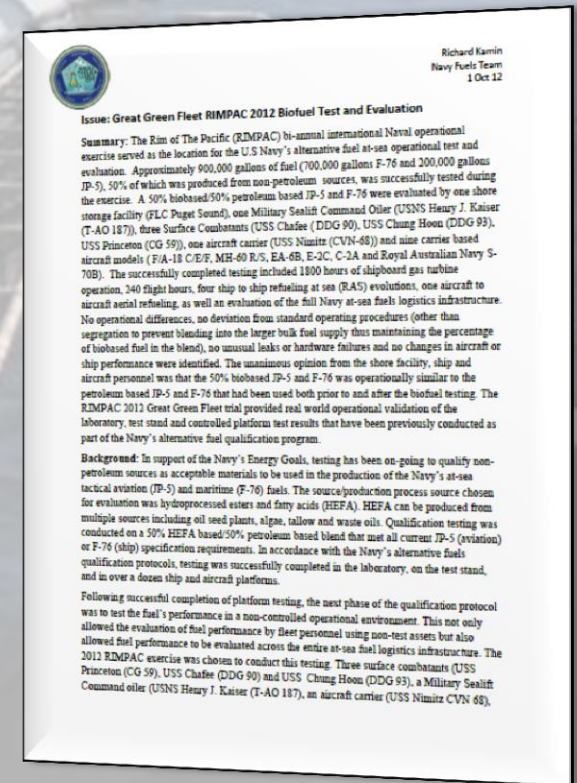


USS Princeton (CG 59) ,USS Nimitz (CVN 68)



Great Green Fleet – RIMPAC 2012

- 1,800 hours of shipboard gas turbine operation
- 240 flight hours
- Four ship-to-ship RAS evolutions
- One air-to-air refueling
- No operational differences noted:
 - Logistics Infrastructure
 - Ship power plants and aircraft
- Filters operated more efficiently due to fewer impurities in the fuel
- What's next – get to 2016



DPA Title III Advanced Drop-in Biofuels Production Project



- Multiple, Commercial Scale Integrated Biorefineries
- Drop-in fully compatible MILSPEC fuels (F-76, JP-5,8)
- \$510M Agency Funding (total planned)
- No More Than a 50% Cost Share from Gov't
- Cost-competitive with conventional petroleum w/o subsidies
- Produced domestically; non-food feedstock









DPA Title III Advanced Drop-In Biofuels Production Project

- **As of June 19th, 4 Phase 1 awards have been made**
- **Potential for 170 million gallons of drop-in compatible MILSPEC fuels (F-76, JP-5,8) to start production by 2016**
- **Weighted average price in 2013 dollars <<\$4/gal**
- **Project has \$100 million in FY12 funds from DOD, \$60 million in FY13 from USN that can't be reprogrammed**
- **USDA has contributed \$161 million in CCC funds**
- **Phase 2 awards set to begin July 2014**
 - **Construction and commissioning**



DPA Title III Advanced Drop-In Biofuels Production Project

Company	Location	Feedstock	Conversion Pathway	Capacity (MM gpy)
	Gulf Coast	Fats, Oils, and Greases	Hydroprocessed Esters and Fatty Acids (HEFA)	94.0
	South Sioux City, NE	Fats, Oils, and Greases	Hydroprocessed Esters and Fatty Acids (HEFA)	65.8
	Western United States	Municipal Solid Waste	Gasification – Fischer Tröpsch (FT)	17.0
	Lakeview, OR	Woody Biomass	Gasification – Fischer Tröpsch (FT)	16.0

THANK YOU



F/A-18E
Mt. McKinley, Alaska