



Department of Navy Biofuel Initiatives

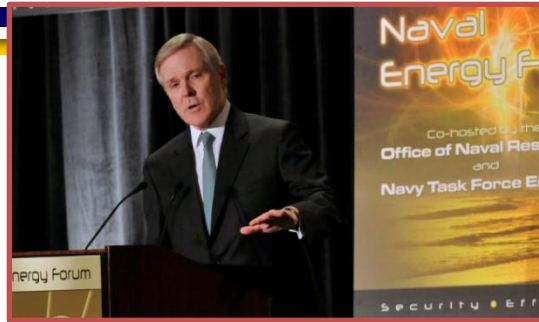
***Chris Tindal
Director for Operational Energy***

November 8th, 2011

Assistant Secretary of the Navy (Energy, Installations & Environment)



Our Energy Goals



**Increase Alternative Energy
Department-wide**

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

**Increase Alternative Energy
Sources Ashore**

By 2020, at least 50% of shore-based energy requirements will be met by alternative sources; 50% of Department installations will be net-zero

**Reduce Non-tactical
Petroleum Use**

By 2015, Department will reduce petroleum use in vehicles by 50%

Sail the "Great Green Fleet"

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

Energy Efficient Acquisitions

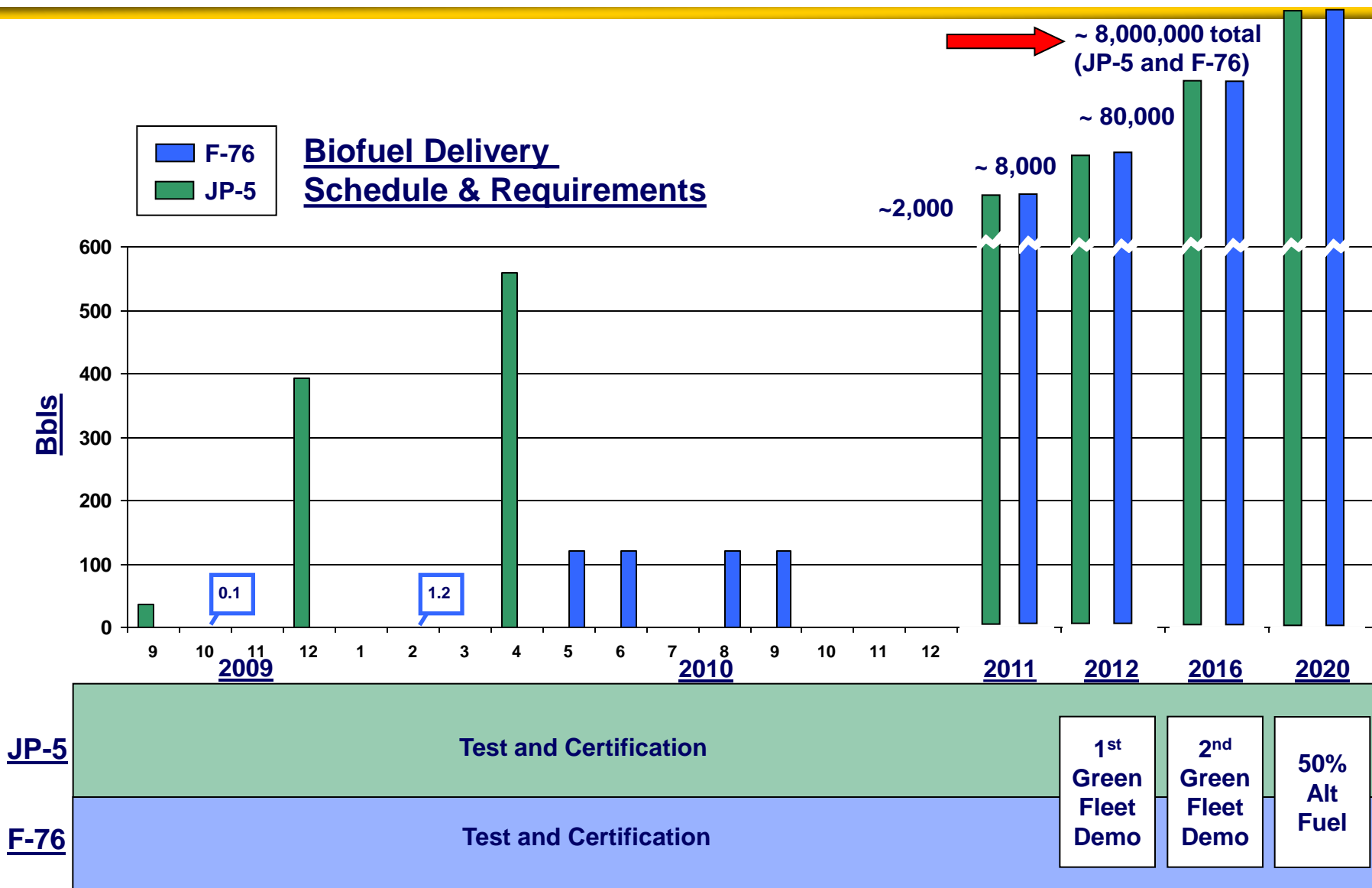
Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings



Navy Biofuel Needs



Biofuel Delivery Schedule & Requirements





Aviation Biofuels Progress



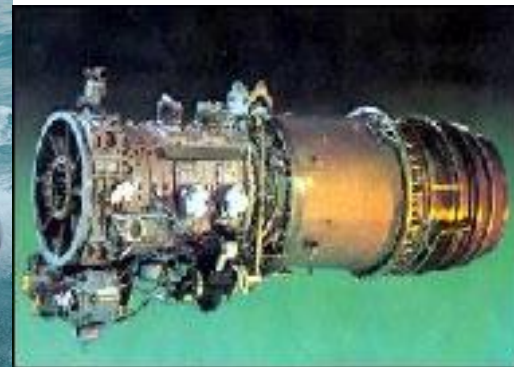


Aviation Biofuels Progress





Surface Platforms Progress





DON, DOE, & USDA Planned Effort



- **Utilizing Title III of the Defense Production Act**
 - Special provision to develop industrial base and critical technology
 - Provisions for feedstock, CAPEX/OPEX, and offtake
- **Seeking integrated biorefineries where substantially all of the business activities must take place domestically (US or Canada)**
 - Feedstock growth , processing, fuel production, blending & distribution, et alia
- **50% minimum private industry cost share**
- **We need multiple, diverse pathways and locations**
 - Oils, biochemical, thermochemical



DON, DOE, & USDA Planned Effort



- **Seeking drop-in biofuels at their maximum blend per applicable spec that function at least as well as petroleum product displaced**
 - e.g. 50:50 HRJ5:JP5 or HRD76:F76
 - Can be fuel spec in approval process, e.g. ATJ
- **EISA 526 compliant bio-derived fuels**
 - Lifecycle GHG emissions must be less than or equal to conventional fuel being replaced
- **Commercial scale – min 10 MM gal neat fuel/year**
- **“No intermediate or long-term impact on supply of agricultural commodities involved in food production”**
 - As determined by USDA



Notional Event Timeline

**Great Green
Fleet Demo**

**Great Green
Fleet Sails**

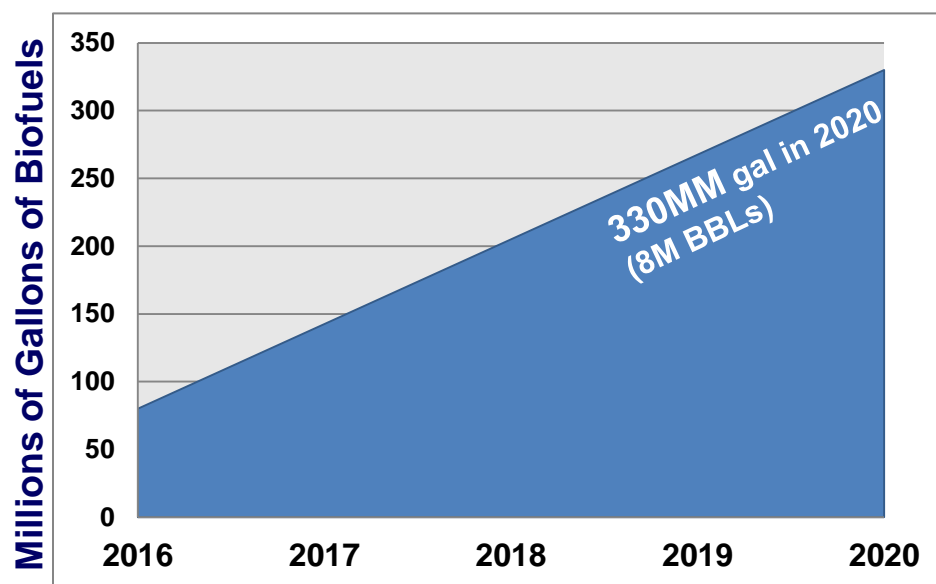
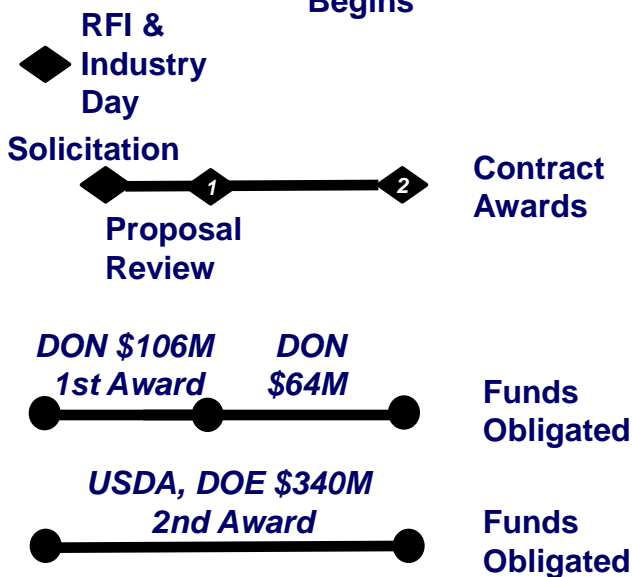


Integrated Biorefineries

Construction
Begins

Production
Begins

Delivery
Begins



DON offtake ramp as domestic production of competitive alternative fuels increases

(\$510M total from DON, DOE, USDA)



100% Renewable Energy Platform



Thank you!