

Operational Energy Requirements

CAPT James Goudreau

Director, Navy Energy Coordination Office (N45E)

23 October 2012

Report Documentation Page

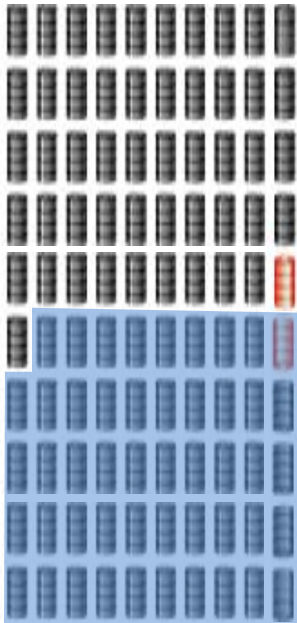
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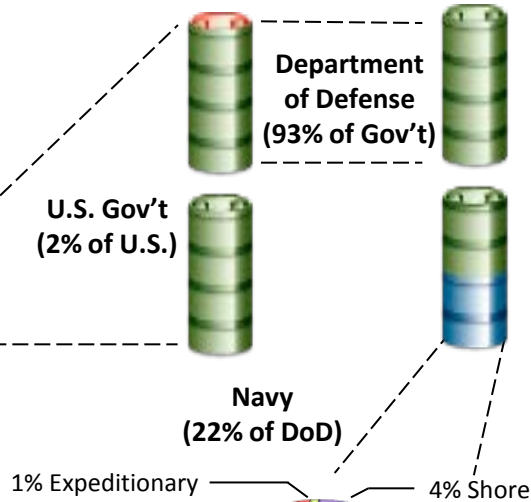
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Navy Petroleum Consumption

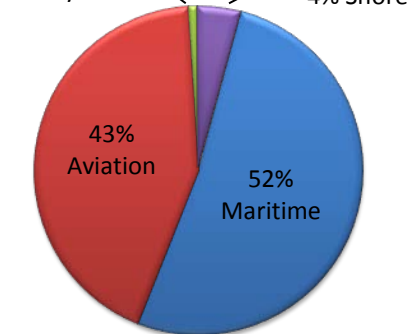
U.S. Petroleum Consumption



U.S. Gov't. Petroleum Consumption

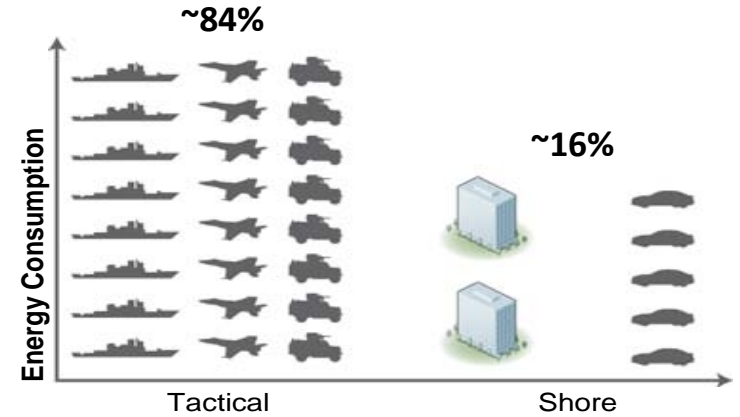


Non-Domestic Sources

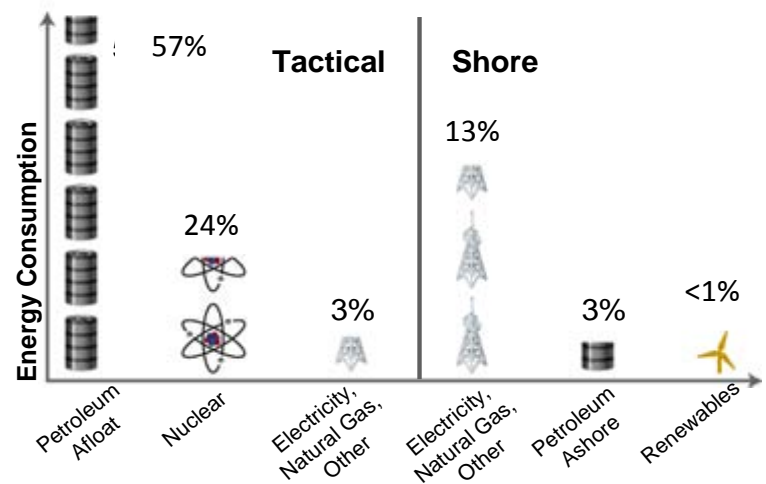


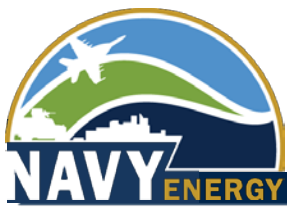
Navy Petroleum Consumption

Overall Energy Consumption



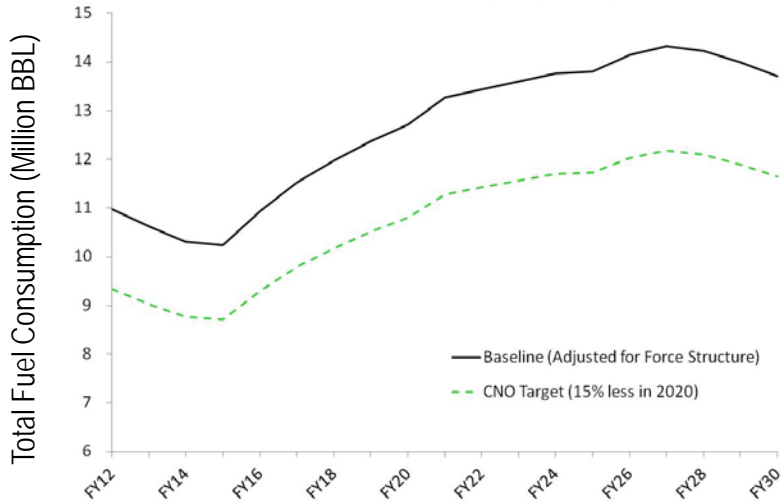
Overall Energy Sources



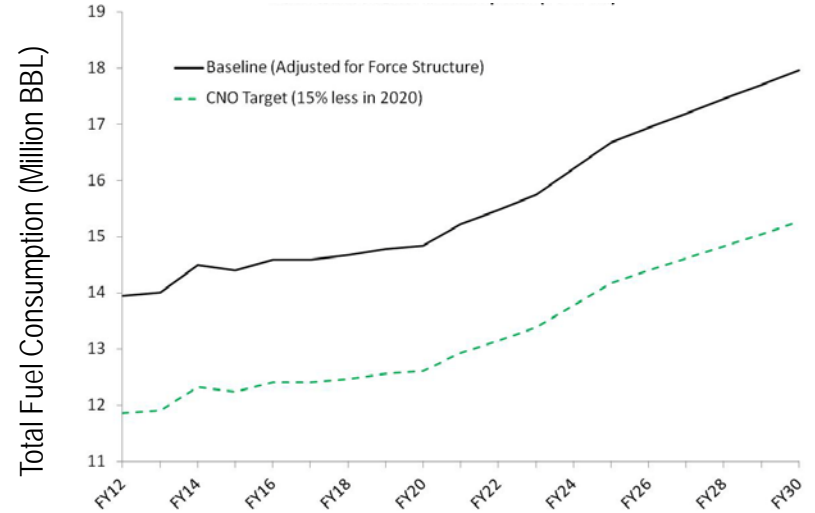


Fuel Consumption: Maritime and Aviation

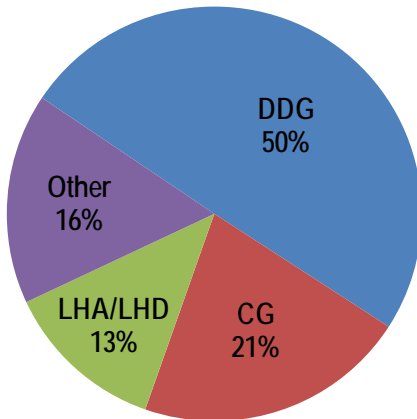
Tactical Maritime Fuel Consumption



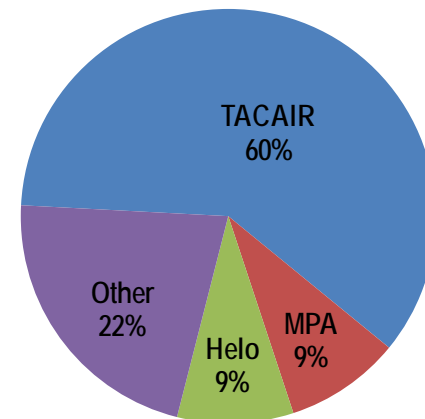
Aviation Fuel Consumption



Major Fuel Consumers in FY11
(% of Tactical Maritime Fuel Consumption)



Major Fuel Consumers in FY11
(% of Aviation Fuel Consumption)



Navy's fuel consumption behavior is forecast to increase

Capability but at what Cost?

MARITIME

Energy Dense Liquid Fuel Past 2060



70% increase



??% increase



AVIATION

Energy Dense Liquid Fuel Past 2060



25% increase



60% increase

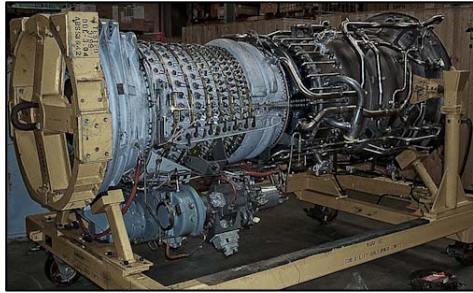


110% increase



Navy's maritime and aviation assets will require energy dense liquid fuel for at least the next 5 decades

Increased Effort Necessary



Power Generation



Conversion, Storage & Distribution



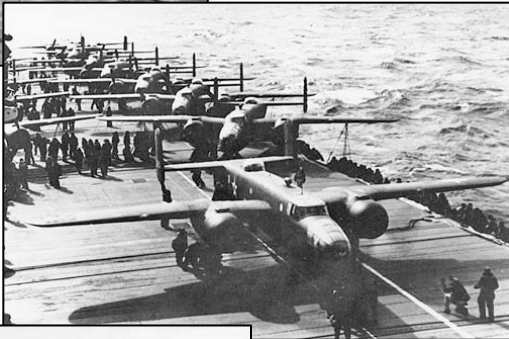
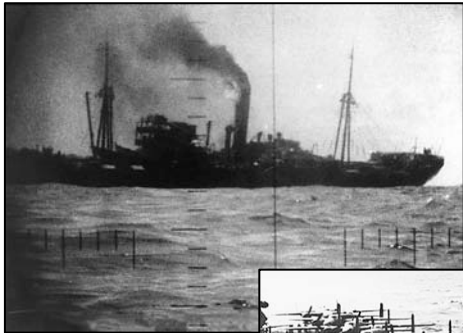
Advanced Weapons Systems

S&T Goals
 Miniaturized
 Lightweight
 Ruggedized



Tactical Gains
 Increased
 Combat
 Capability

Learn From History



- ❖ Practicality
- ❖ Scalability
- ❖ Portability
- ❖ Vulnerability



Be ingenious...but don't create a new problem