





Naval Energy Forum



13 Oct 11

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Exponential Growth in Technology On the Battlefield



380% Weight Increase

2,400% Cost Increase



Vietnam



AN / PRC - 148 or 152
Unique Batteries

AN / PRC-153
Unique Battery



Quiet Pro Headset
Unique Battery



Squad Digital Camera
Unique Battery



AN / PRC-117F
BA-5590 / BA-5390 / BB-2590 Batteries



Rugged Laptop
Unique Battery

Today







Logistics Convoy Study

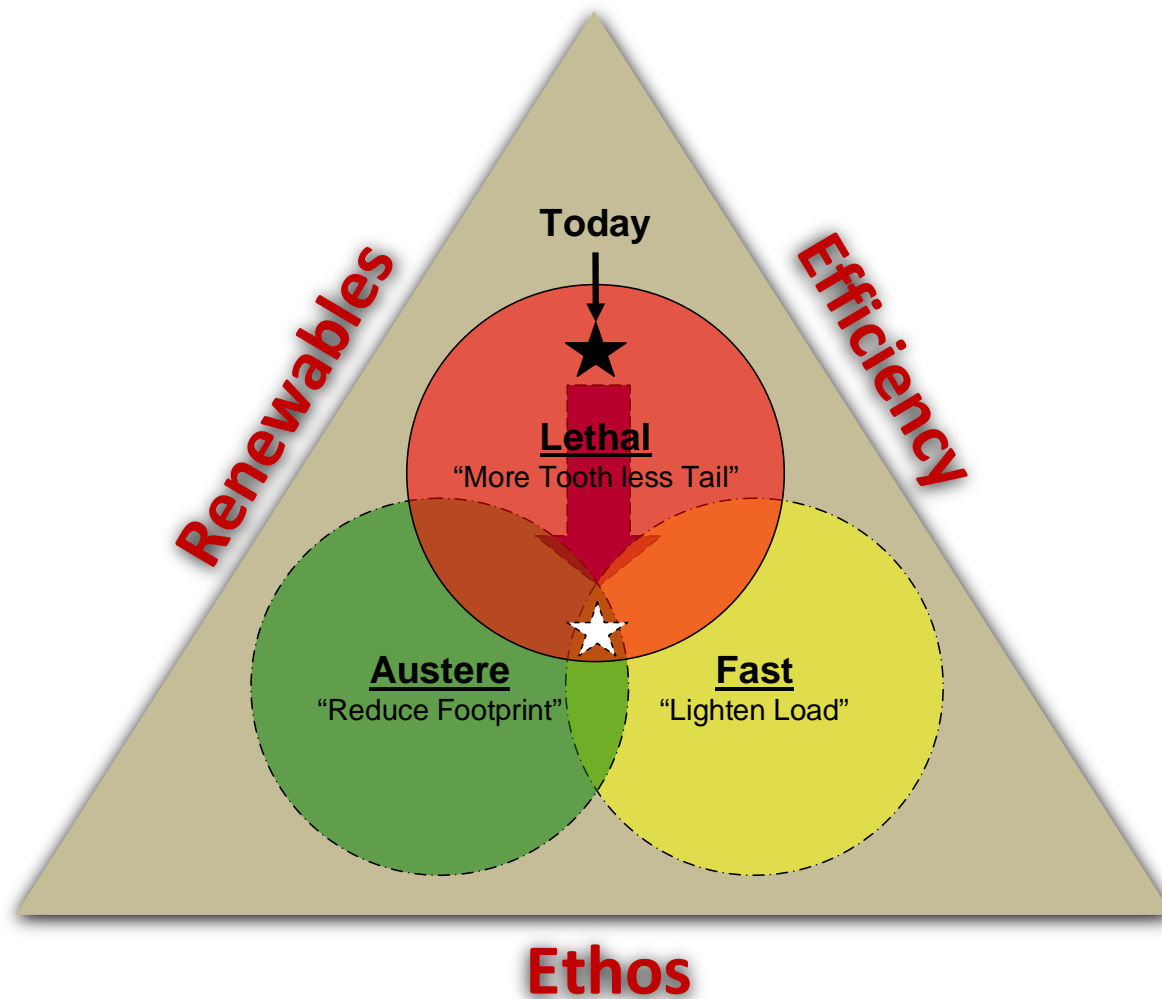
24 Mar 10 – 30 Jun 10



- 299 Fuel/Water Convoys (98 Days)
- **6 Marines WIA** hauling Fuel/Water
- **1 Marine WIA per 50 Fuel/Water Convoys**



Reducing Risk Increasing Effectiveness





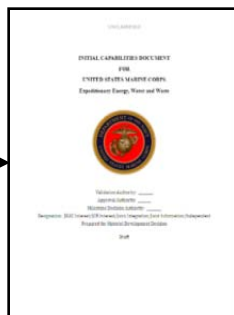
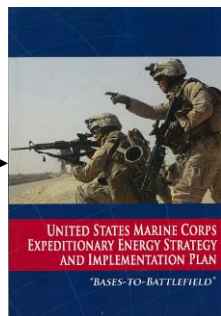
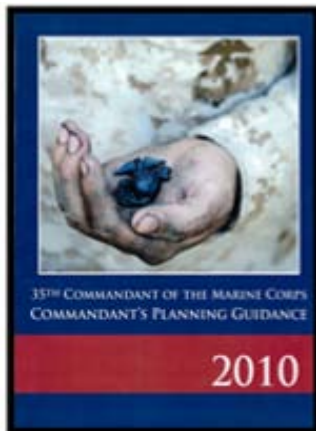
Framework to Create a More Capable MAGTF



Mission

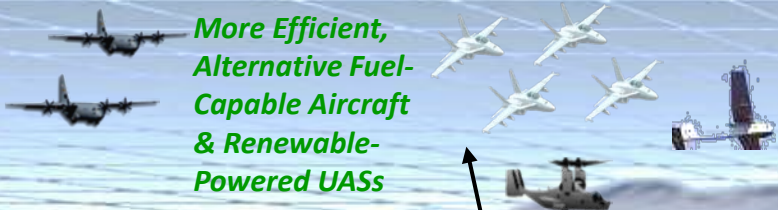
By 2025 we will deploy Marine Expeditionary Forces that can maneuver from the sea and sustain C4I and life support systems in place; the only liquid fuel needed will be for mobility systems which will be more energy efficient than systems are today.

E2W2 CBA/ICD



Three Pillars Required to Accomplish the Mission

Energy Strategy and Supporting Requirements Documents Written in Parallel to Achieve CMC's Priority; ...to "Implement New Capabilities..."



**More Efficient,
Alternative Fuel-
Capable Aircraft
& Renewable-
Powered UASs**

**Minimized Aviation
Resupply Missions**

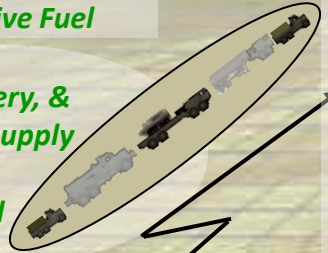


**Self - Sufficient COP/PB -
Renewable Energy
Powered
COC & Life Support,
Locally Sourced Water
Renewable Energy,
Water Purification**

**Self - Sufficient FARP -
Water & Energy
Alternative Fuel**



**Fuel, Battery, &
Water Resupply
Convoys
Minimized**



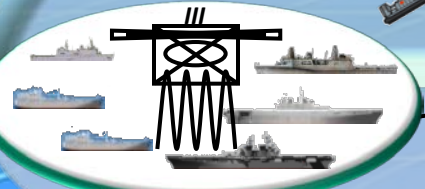
**Joint or Coalition Force,
Interoperable Energy,
Water & Waste Capabilities**



Common Operational Energy Picture
Monitor, Analyze, Manage



**Afloat C2
& Logistics Support**



**Plan for Energy, Water,
& Waste Efficiency**



Self - Sufficient Bn FOB

**Renewable Energy
Powered COC & Life
Support,
Locally Sourced Water
Minimum Footprint
Ashore**

**Precision Air
Delivery**



**Dispersed
Maneuver Force**

**Improved, Fuel
Efficient Vehicles
Operating on
Alternative Fuels**



**Dismounted Ops -
Reduced Battery &
Water Load &
Resupply
Renewable Energy,
Water Purification**





Expeditionary Energy Goals “Starting Point”



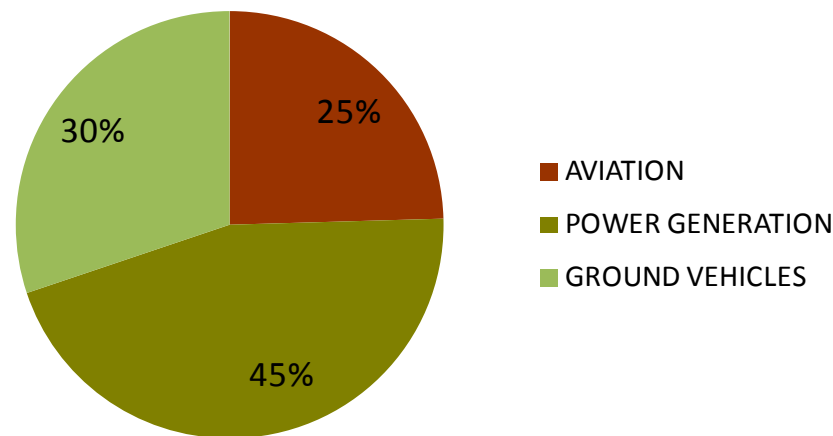
25% **Doctrine, Training, Organization, and Leadership = Behavior Change “Spartan Ethos”**

10-15% **Increased Efficiency of Ground Vehicles and Equipment**

5-10% **Renewable / Alternative Energy**

10% **Increased Efficiency in Aviation**

~50% **Reduction by 2025**



Starting Baseline

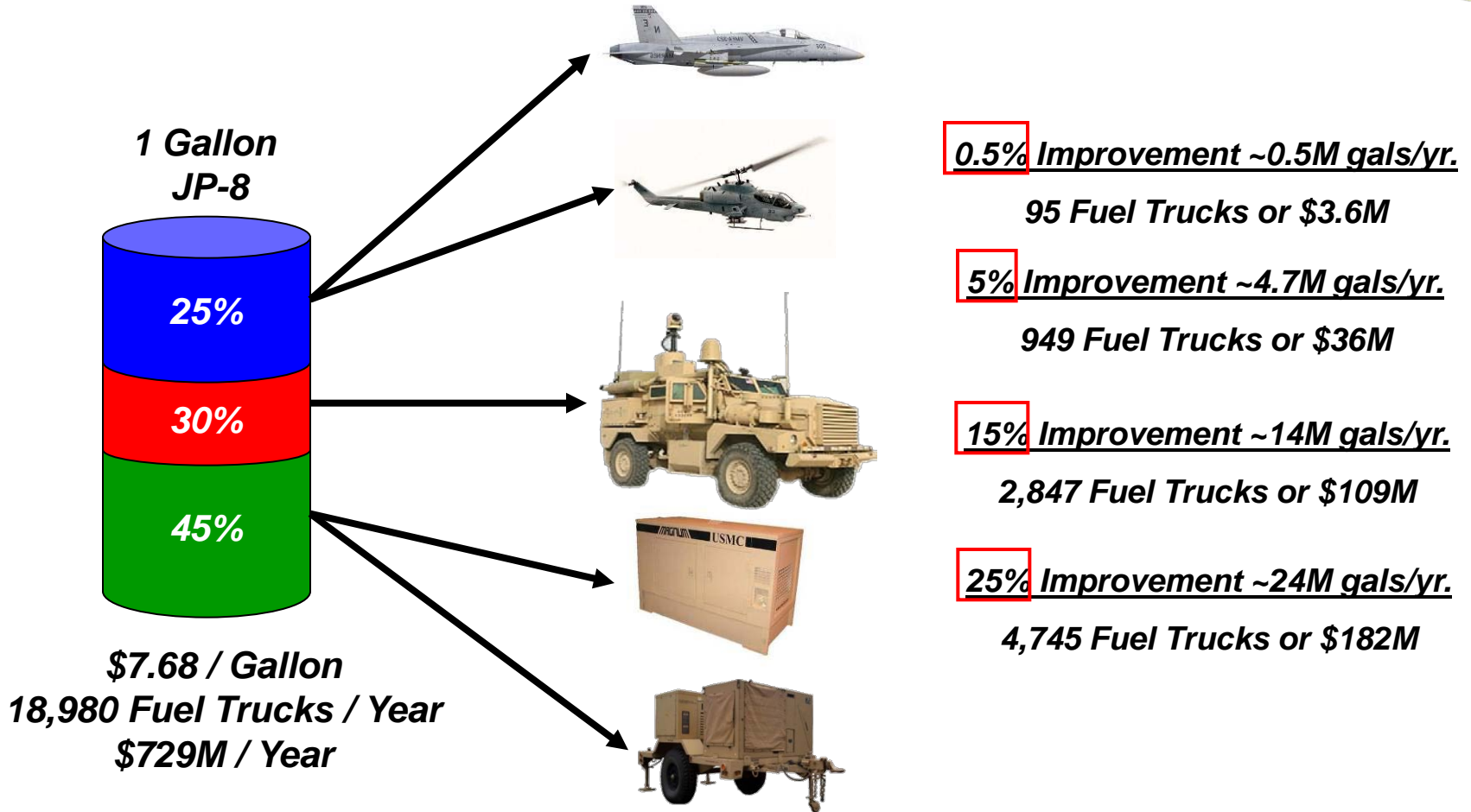
OEF 2010

(Will be adjusted as we gain greater insights into actual use across the MAGTF)

Baseline will be adjusted as we gain better insights into challenges and opportunities.



Today's Deployed MAGTF



Small Improvements in Energy Efficiency...Big Impact!



“We Are Looking For A Few Good Technologies”



- ***Temp Independent Electronics***
- ***Efficient Cooling / Heating of Personnel***
- ***Energy Storage***
- ***Energy Harvesting***
 - ***Solar***
 - ***Kinetic***
 - ***Thermal***
 - ***Waste***
 - ***Etc...***
- ***More Efficient Electronics / Vehicles / Equipment***
- ***Vehicles as a Power Source***
- ***New Leadership and Training***

We don't create markets, we protect our Nation!

Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management System



Following the Material Development Decision, the Milestone Decision Authority may authorize entry into the acquisition process at any point, consistent with phase-specific entrance criteria and statutory requirements

The intent is to establish a DoD Defense Acquisition University system. It provides a unified framework for defense acquisition, technology, and logistics life cycle management. It is designed to be a common framework for all defense acquisition programs. It is designed to be a common framework for all defense acquisition programs. It is designed to be a common framework for all defense acquisition programs.

