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| 14. ABSTRACT<br><b>The Marine Corps has launched a major initiative to increase its combat effectiveness by changing the way it uses energy. In August 2009, the Commandant declared energy a top priority, and in November created the Marine Corps Expeditionary Energy Office (E2O). Its mission is to analyze, develop, and direct the Marine Corps? energy strategy to optimize expeditionary capabilities across all warfighting functions. The Marine Corps is focused on energy today not because it wants to but because it has to. Energy is a critical enabler, but is also a growing vulnerability to our ability to serve as an expeditionary force.</b>                                                                                                                                                                                  |                                    |                                     |                             |                                                     |                                 |
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# ***Maintaining Sustainability of Forward Operating Bases***



***2 Dec 2010***

***Col Bob “Brutus” Charette, USMC  
Director, Expeditionary Energy Office***

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**KEYNOTE ADDRESS**  
**THE MARINE CORPS' EXPEDITIONARY ENERGY INITIATIVE**

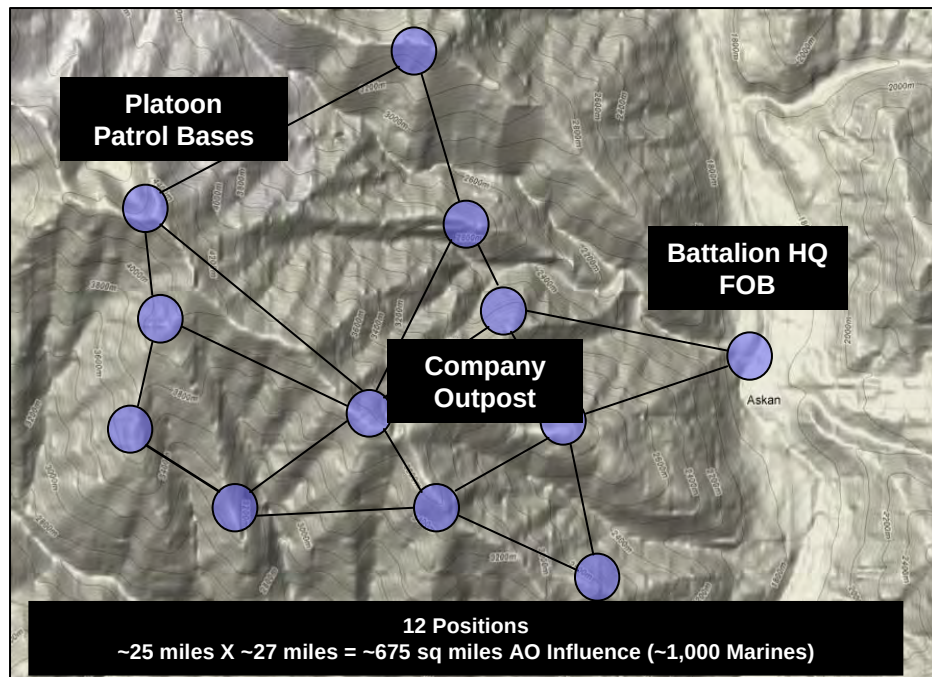
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The Marine Corps has launched a major initiative to increase its combat effectiveness by changing the way it uses energy. In August 2009, the Commandant declared energy a top priority, and in November created the Marine Corps Expeditionary Energy Office (E2O). Its mission is to analyze, develop, and direct the Marine Corps' energy strategy to optimize expeditionary capabilities across all warfighting functions. The Marine Corps is focused on energy today not because it wants to but because it has to. Energy is a critical enabler, but is also a growing vulnerability to our ability to serve as an expeditionary force.

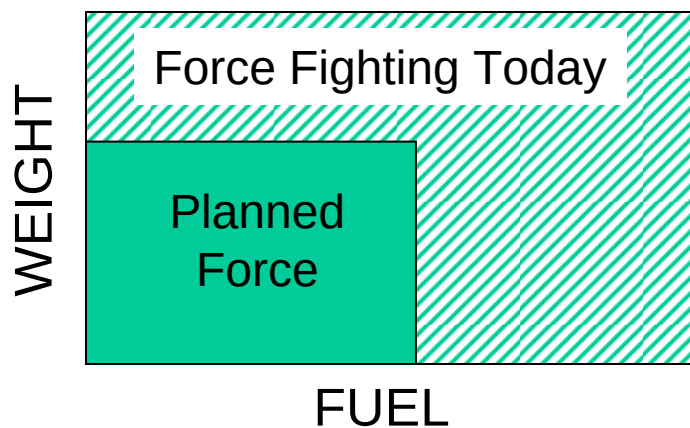




# ***“Increased Lethality” Distributed Operations***



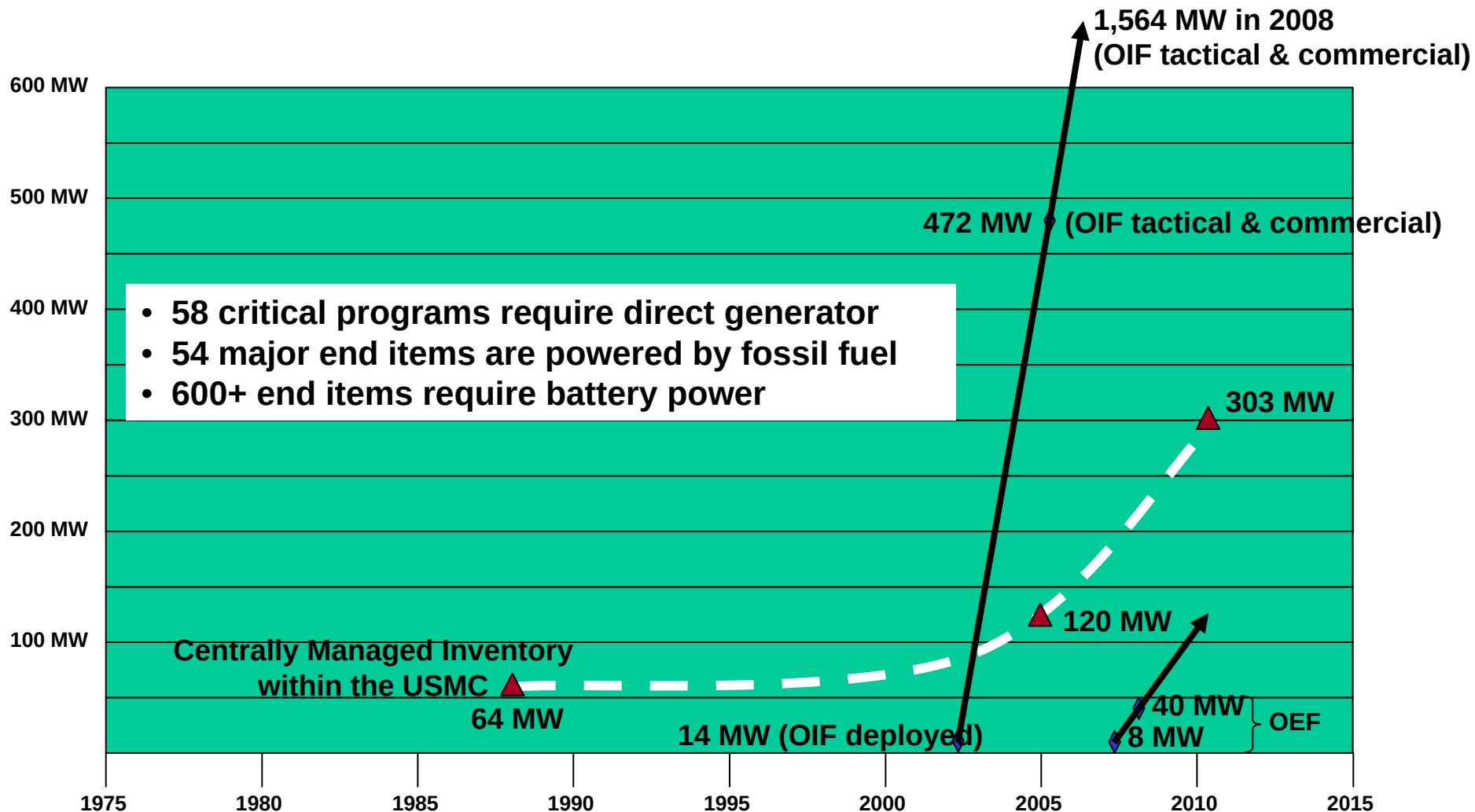
- 250% Increase in Radios
- 300% Increase in IT/Computers
- 200% Increase in # of Vehicles
- 75% Increase in Vehicle WGT
- 30% Decrease in MPG
  - MTRV – 4.3 MPG
  - HMMWV – 8.0 MPG
  - MRAP – 4.0 MPG



150 Marines conducting operations that 1,000 Marines plus conducted 10 years ago!



# ***“Effect” Need for Power***











# ***RC SW Logistics (MLG)***

***24 Mar 10 – 30 Jun 10***

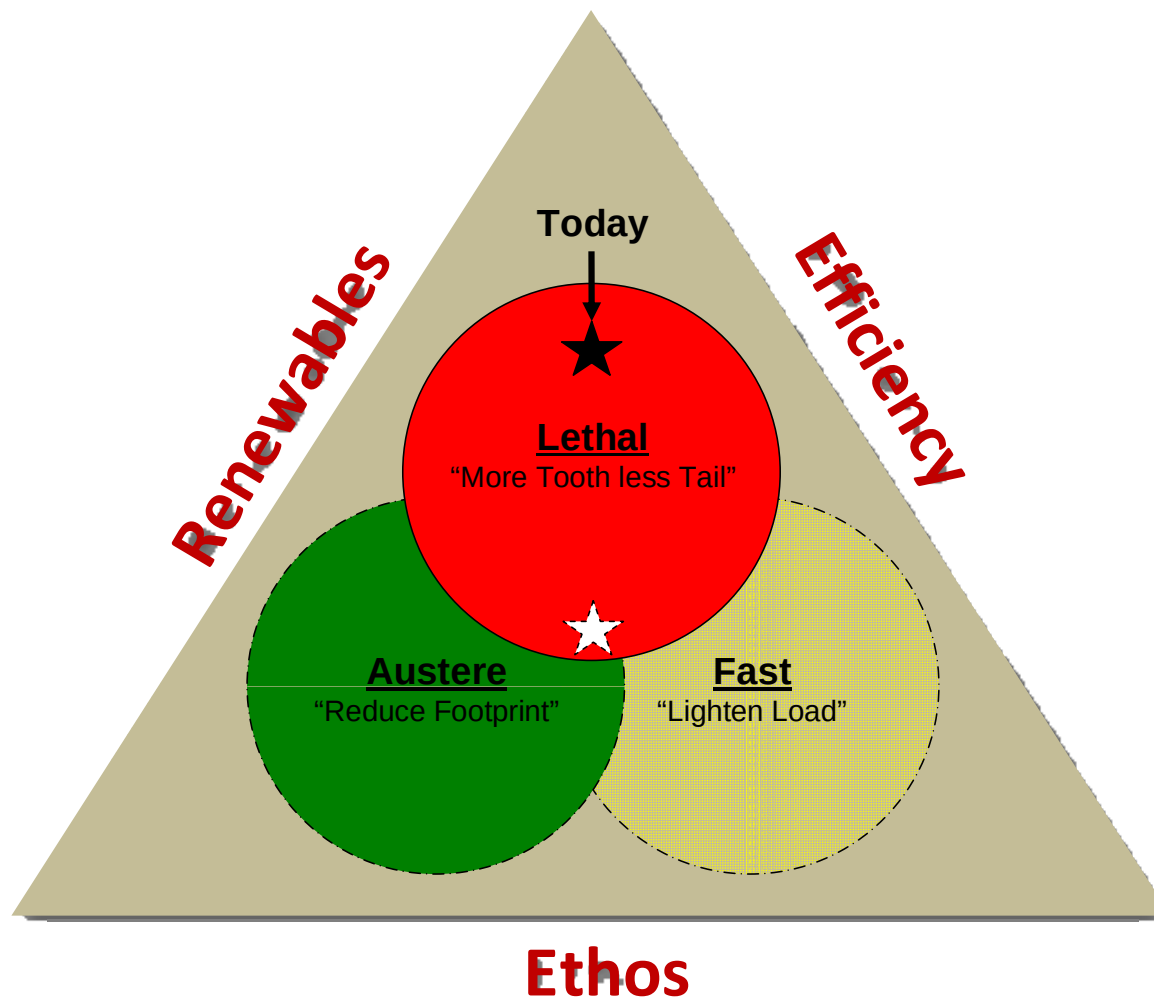
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- 299 Fuel/Water Convoys (98 Days)
- **6 Marines WIA** hauling Fuel/Water
- **1 Marine WIA per 50 Fuel/Water Convoys**



# Reducing Risk Increasing Effectiveness



**35<sup>th</sup> Commandant's Planning Guidance**

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# Energy Strategy POA&M

## "Bases-to-Battlefield"



***Change Ethos + Increase Energy Efficiency + Renewable Energy =  
Increase Combat Effectiveness***

**Today**

**Nov 11**

**Dec 10**

**2011**

**2025**

**Fossil Fuel**

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

**Per Marine**

**USMC  
Expeditionary  
Energy  
Strategy  
(In Staffing)**

**Joint  
Expeditionary  
Energy, Water,  
and Waste  
CBA / ICD  
(In Work)**

**Direct  
S&T / R&D  
Solutions  
DOTMLPF**

**Alternative Fuel**

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

Fuel  
1Gal

**Per Marine**

**Strategy and Supporting Requirements  
Documents Being Written in Parallel**

**Future Capability  
Require Mobility Fuels Only  
50% From Alternatives**



# Experimental Forward Operating Base (ExFOB)



## Objectives:

- Phase I/II - Evaluate COT technologies for training and deployment to OEF
- Phase III – Extended User Evaluations
- Phase IV – Demonstrate Less Mature Solutions
- Phase V – Aug 11

## Approach:

- Joint Approach
- Contracting, Legal, and Fiscal
- Rapid Evaluation of Technology
- Training and Deployment Most Promising Technology
- Evaluation and Feedback
- Expedite Programs of Record



## Implementation Schedule:

- African Lion – 10 May – 17 May
- Enhanced Mojave Viper – July 10
- 3/5 Deploy – Sep 10

## Cost:

- Phase I/II - \$2.5M (Purchase of Gear Included)
- Phase III - \$500K (Training Costs)
- Phase IV - \$500K
- Phase IV Follow-On \$650K
- Total Cost to Date - \$4.15M





# ***ExFOB Spin-Offs***

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# ***ExFOB Spin-Offs***



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# ***Behavior Change***



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