Hear About Energy?
Yes You Have!

Gasoline

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Unleaded</td>
<td>$9.10</td>
</tr>
<tr>
<td>Plus Unleaded</td>
<td>$9.10</td>
</tr>
<tr>
<td>Super Unleaded</td>
<td>$9.10</td>
</tr>
</tbody>
</table>

Self Serve

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm</td>
<td>$9.10</td>
</tr>
<tr>
<td>Leg</td>
<td>$9.10</td>
</tr>
<tr>
<td>Both</td>
<td>$9.10</td>
</tr>
</tbody>
</table>
Logistics Convoy Study
Updated Jan 12’

- 1 Marine/Civ KIA/WIA per 50 Fuel/Water Convoys
- 1 EID Incident per 17 Fuel/Water Convoys
Modernization in the following areas is **critical** to maintaining operational capabilities and readiness:

- Ground Combat Tactical Vehicles
- Aviation
- Preparing for Future Battlefields
- Amphibious and Pre-positioning Ships
- Expeditionary Energy
- Intelligence, Surveillance and Reconnaissance
Military Objective and Strategic Framework

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.

Strategy and supporting requirement documents established to guide investment today and tomorrow.
Semi-annual process to evaluate technologies and educate Marines in support of the "Marine Corps Expeditionary Energy Strategy and Implementation Plan."
First ExFOB (Mar 2010’) “Concepts-to-Combat-to-Programs”
# PB Boldak

## Hybrid Power Evaluation

### 10kW TQG vs. Hybrid Power (Sep 11’-to-Dec 11’)

<table>
<thead>
<tr>
<th>Evaluation Metrics</th>
<th>10kW TQG</th>
<th>Hybrid Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator Runtime</td>
<td>2928 hrs</td>
<td>585 hrs</td>
</tr>
<tr>
<td>Total Gallons Burned</td>
<td>1040 gal</td>
<td>459 gal</td>
</tr>
</tbody>
</table>

### Very Effective Powering Loads Below 6kW
- 80% Reduction in GENSET Runtime
- 55% Reduction in Fuel Consumed
- Informing MAGTF Expeditionary Hybrid Power AoA
Non-Material Solutions
Training, Education, and Doctrine

• Common Skills Program “Expeditionary Ethos”
• Training and Readiness Manuals “Boiler Plate”
• Expeditionary Warfare School
• Commanders Course Presentation
• Doctrine Review

• Training “Road Show” New Equipment
  – Energy Curricula

Unclassified
Nawa Renewable Energy Project
“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!