



**MARINE CORPS SYSTEMS COMMAND**  
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# Overview of Expeditionary Power Systems

## Marine Corps Systems Command

### Warren Clare

**Joint Service Power Expo**  
**August 25, 2015**



- Marine Corps Acquisition Overview
- Expeditionary Power Systems Overview
- Power Drivers
- Current USMC Power Programs
- Marine Corps Investments
  - Near term, Long term
- Conclusion



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## **MCSC Areas of Expertise**

### **MCSC's Acquisition Areas of Expertise:**

- ▶ **Command, Control and Communications**
- ▶ **Information Technology and Networking Infrastructure**
- ▶ **Battlespace Management and Air Defense**
- ▶ **Training Systems**
- ▶ **Infantry Weapons Systems**
- ▶ **Combat Equipment and Support**
- ▶ **Armor and Fire Support**
- ▶ **Ground Transportation and Engineering Systems**
- ▶ **Intelligence, Surveillance and Reconnaissance**
- ▶ **Systems Engineering**
- ▶ **Ammunition**
- ▶ **Lifecycle Logistics**





## Combat Support Systems (PM CSS)

### **PMM-115:**

**Engineer Systems**

**Test, Measurement and Diagnostic Equipment**

**Combat Support Equipment**

**Expeditionary Power Systems**

**“Shoot, Move, Communicate.” Marine Corps ground forces depend on these three fundamentals of combat effectiveness. The Program Manager for Combat Support Systems directly supports the MAGTF and these critical functions through a broad portfolio of products and capabilities. PM CSS enables Marines to clear minefields and to bridge water and land obstacles; provides robots to dispose of explosive ordnance; allows for the timely delivery of military supplies through the provision of various combat containers; provides the warfighters with drinking water and field messing capability; equips Marine Corps units with necessary tools and test equipment to keep all combat systems operating; and meets the power needs of our Marines, from batteries and generators to solar power.**





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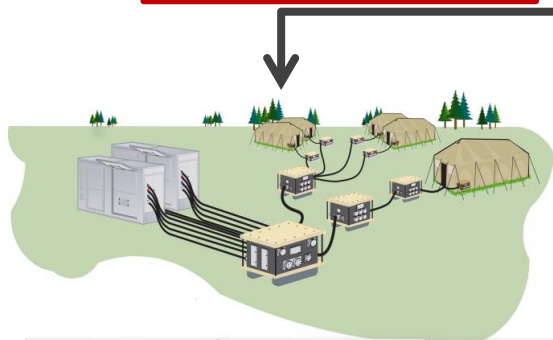
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## EPS Program Office



Mobile Power  
Water and Fuels

Advanced Power Team





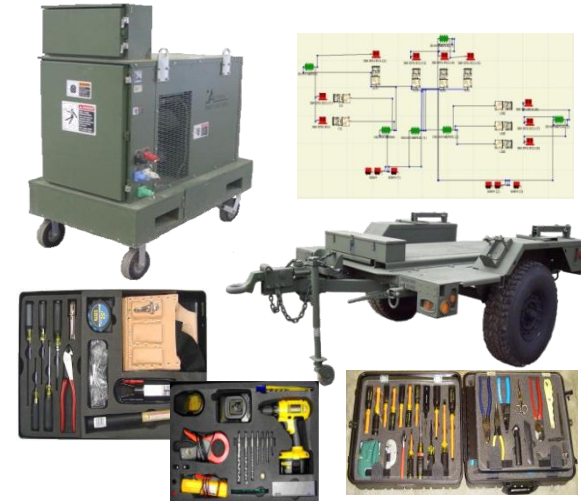
### DOD Standard Generators



### USMC Unique Generators



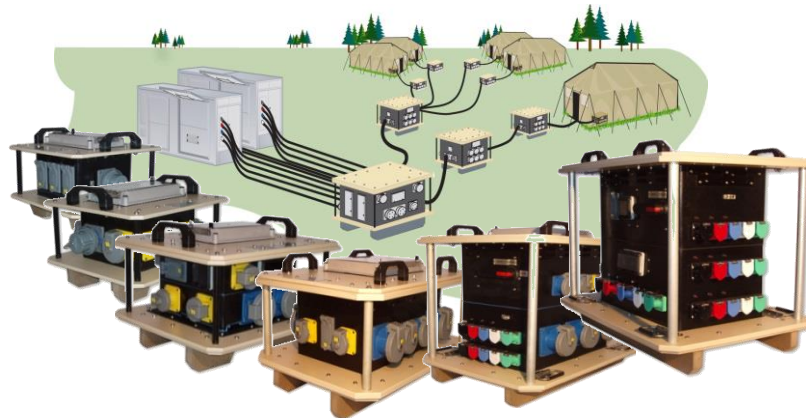
### Tools / Customer Support



### Integrated Trailer ECU - Generator



### Power Distribution



### Floodlight Sets





## Environmental Control Units



## Special Customer ECUs



## Field Refrigeration



## Water Chilling / In-Field Ice Making (food service, mortuary affairs)



## Tools / Customer Support







## Water Purification and Distribution



## Fuel Analysis and Distribution







### Radio Power Adaptors



### Power Supplies



### Renewable Energy

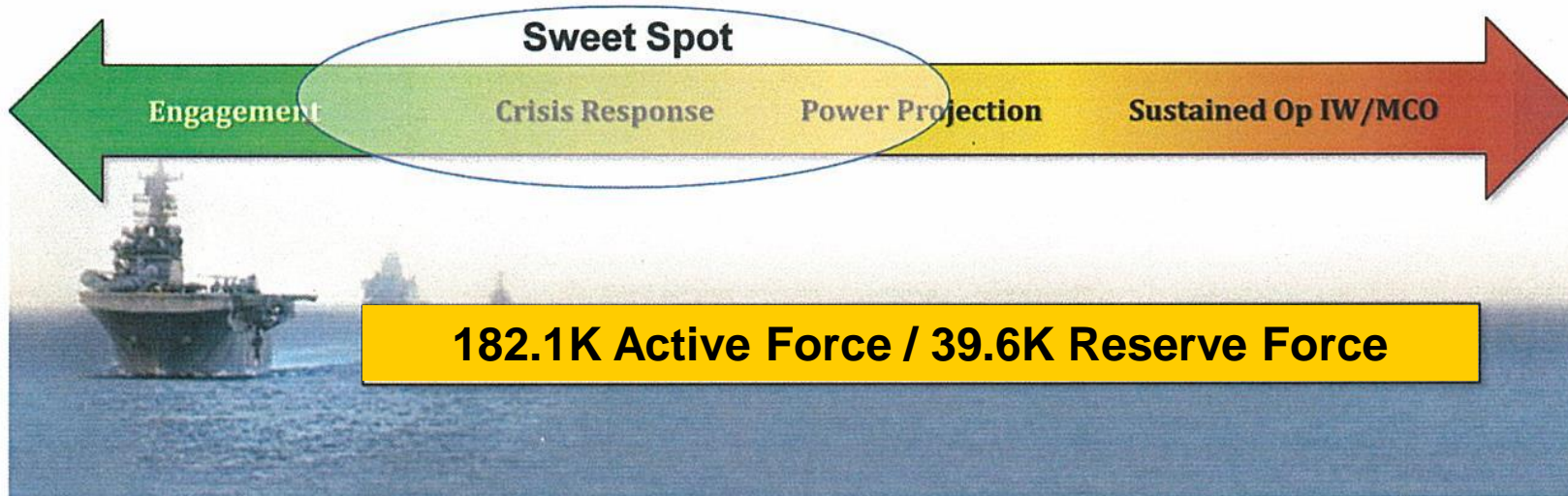


### Hybrid Systems



### Battery Management / Sustainment Systems





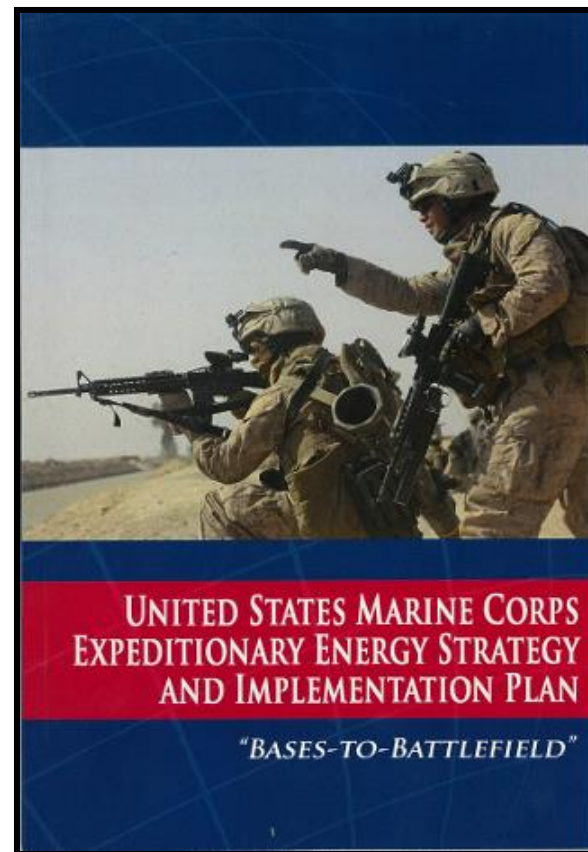
- Larger than SOF / More expeditionary than conventional Army units
- Able to engage and respond quickly – often from the sea.
- Strategically mobile, middleweight force
- Optimized for rapid crisis response and forward-presence
- Back to Amphibious / Expeditionary Roots
- New focus on Pacific Theater



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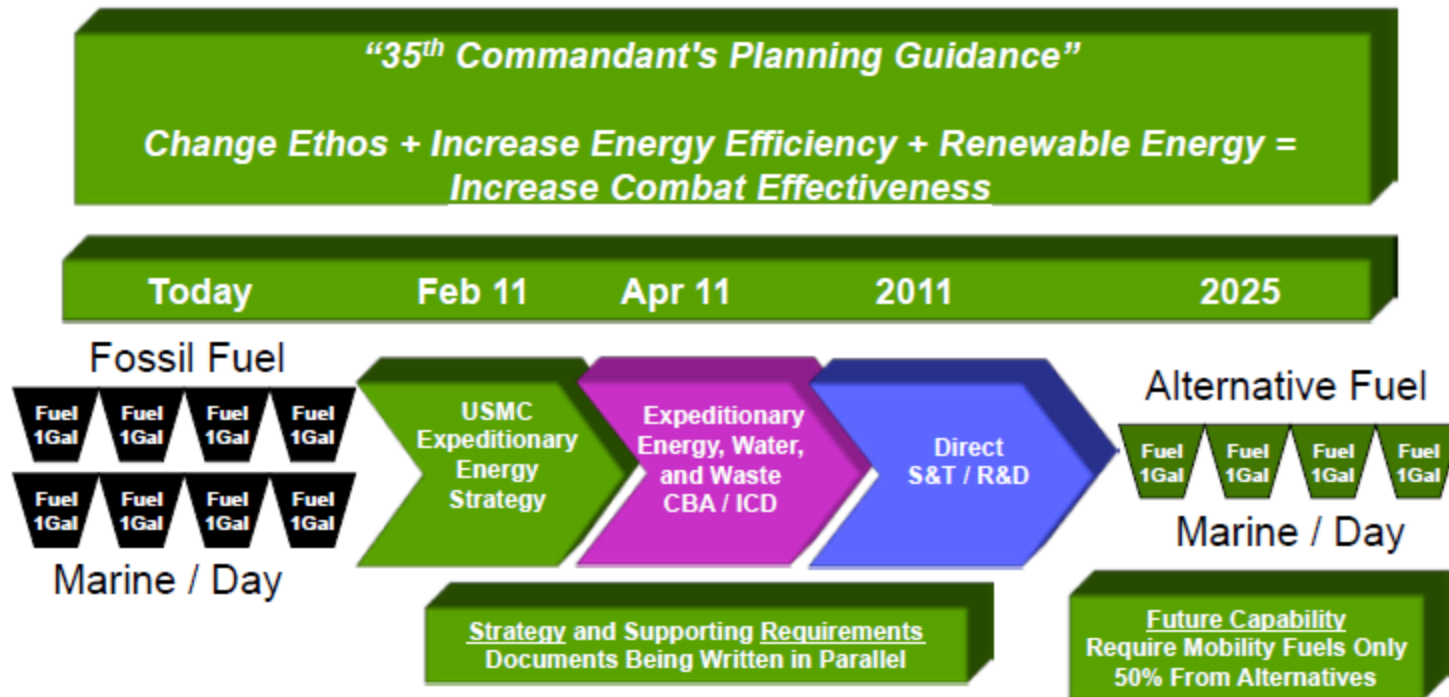
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## Why is Power/Energy Important?



**Getting Fuel and Water to the “Tactical Edge” is Expensive in Human and Capital Costs**





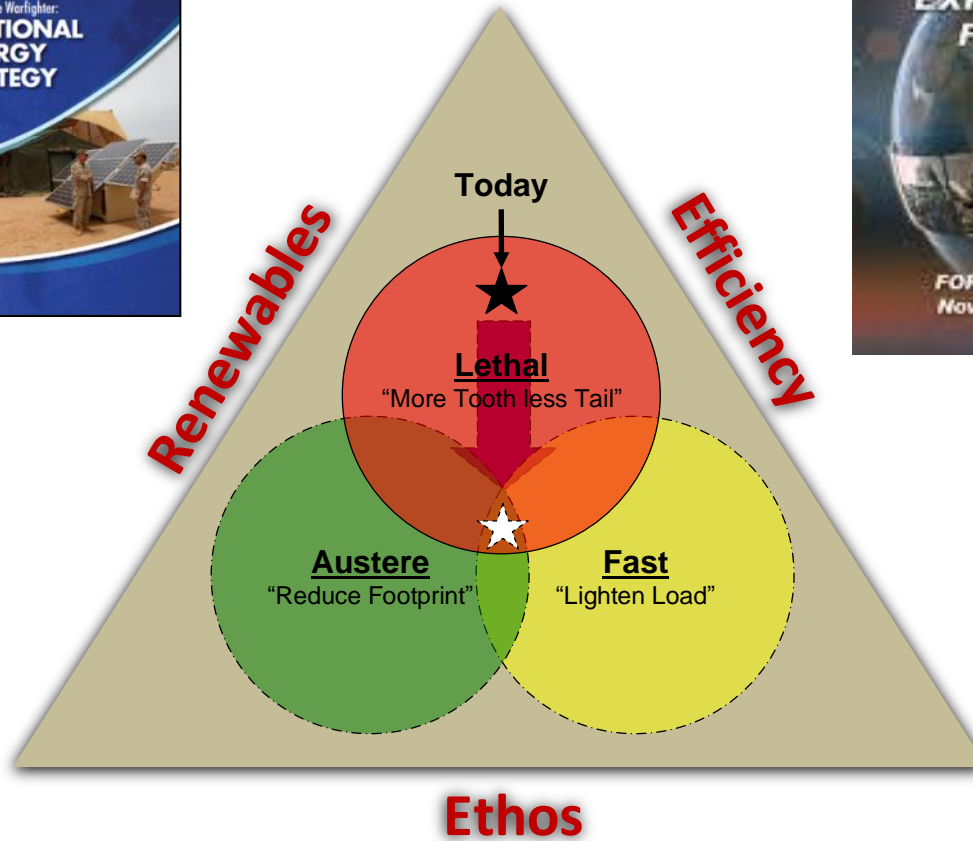
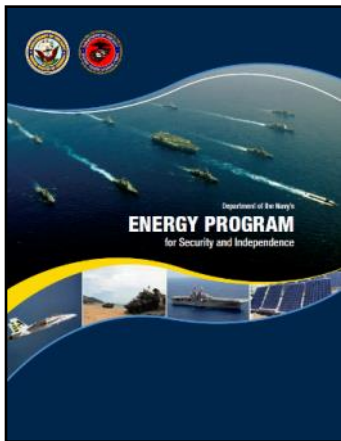
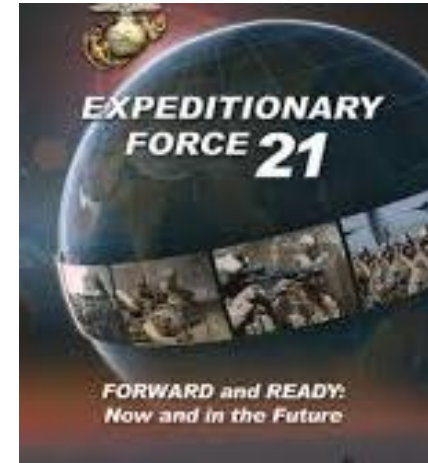
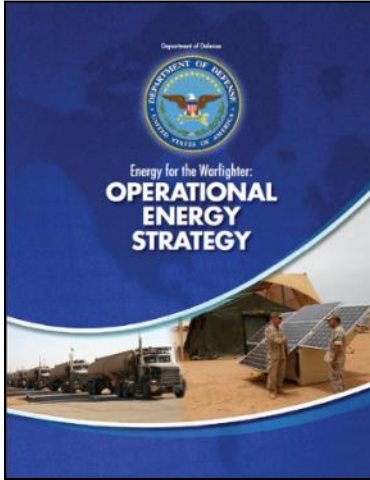
By 2025 we will deploy Marine Expeditionary Forces that can maneuver from the sea and sustain its C4I and life support systems in place; the only liquid fuel needed will be for mobility systems, which will be more energy efficient than systems are today.



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## Guidance & Direction

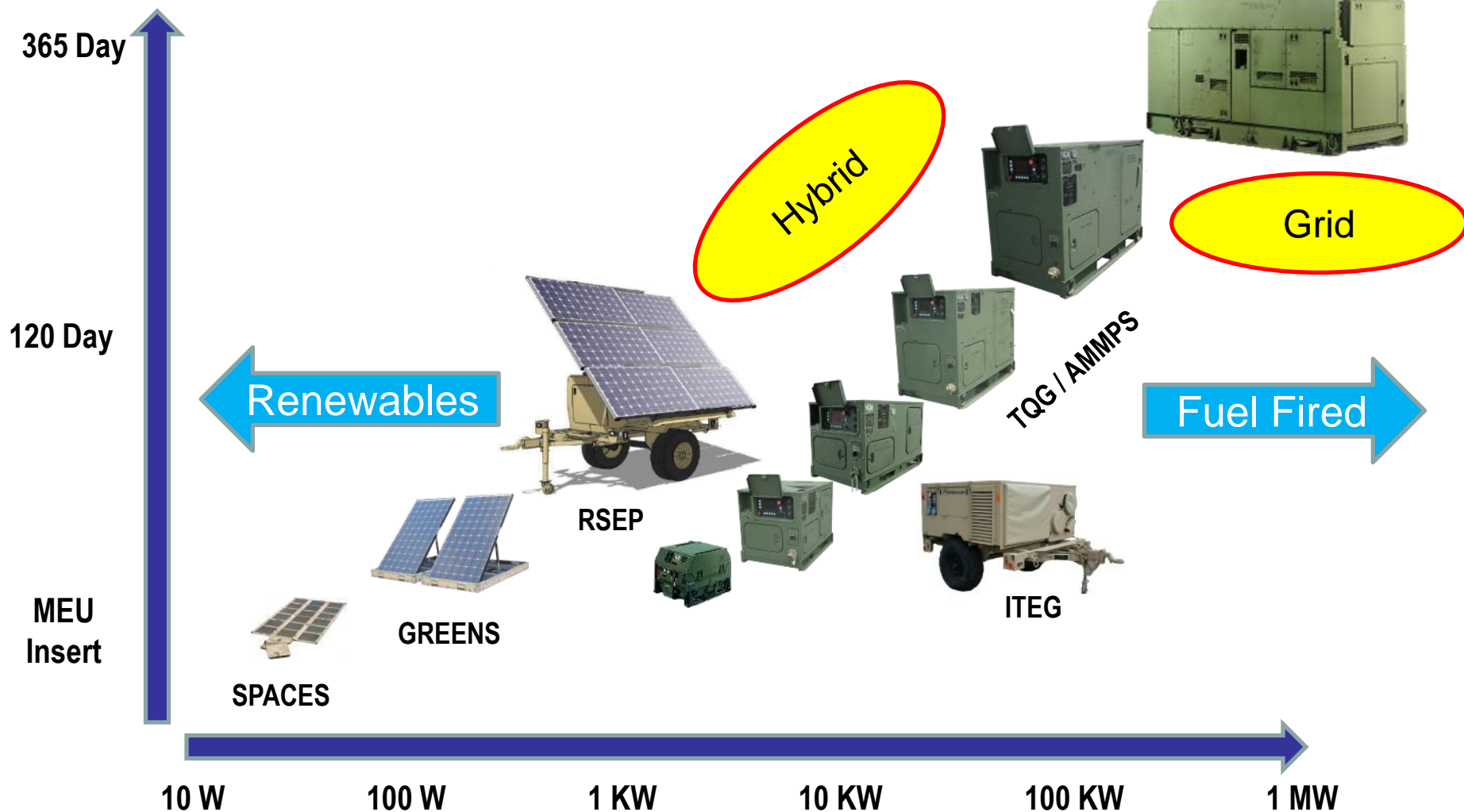




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## Future Capability (sizing to mission)



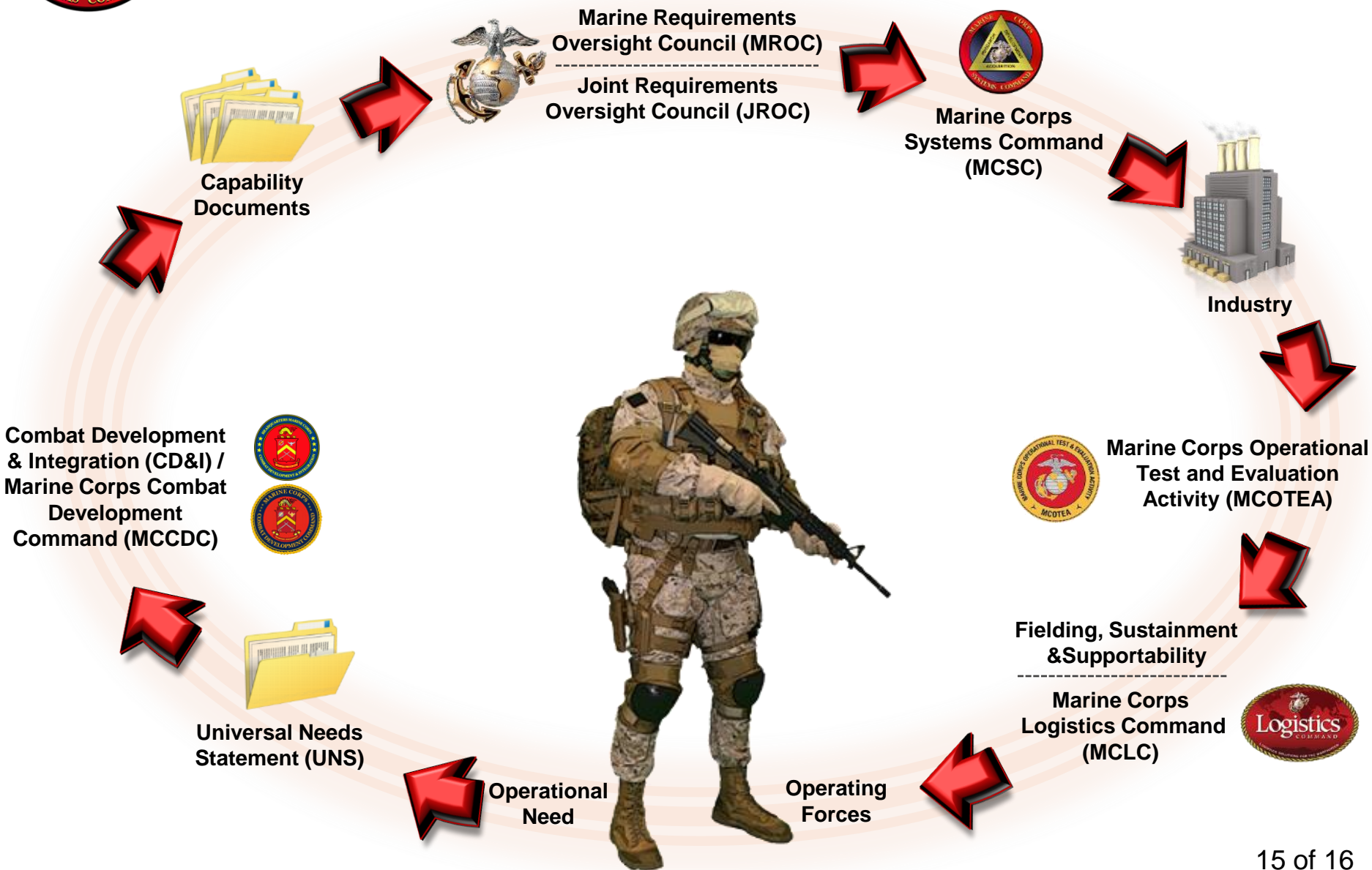




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## Acquisition Process Overview

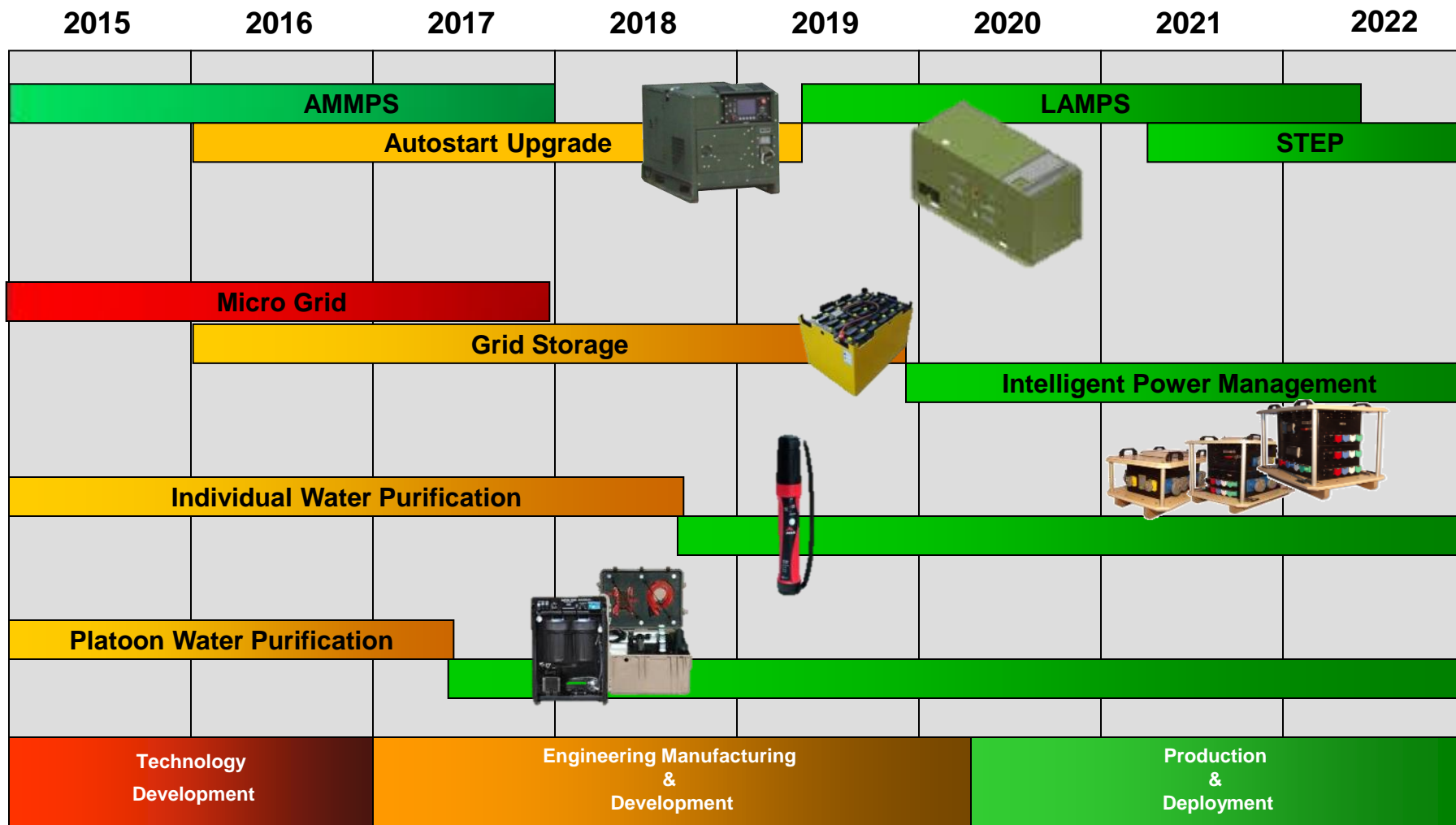




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## Mobile Electric Power and Water Key Initiatives



AMMPS – Advanced Medium Mobile Power Sources  
 LAMPS – Large Advanced Mobile Power Sources

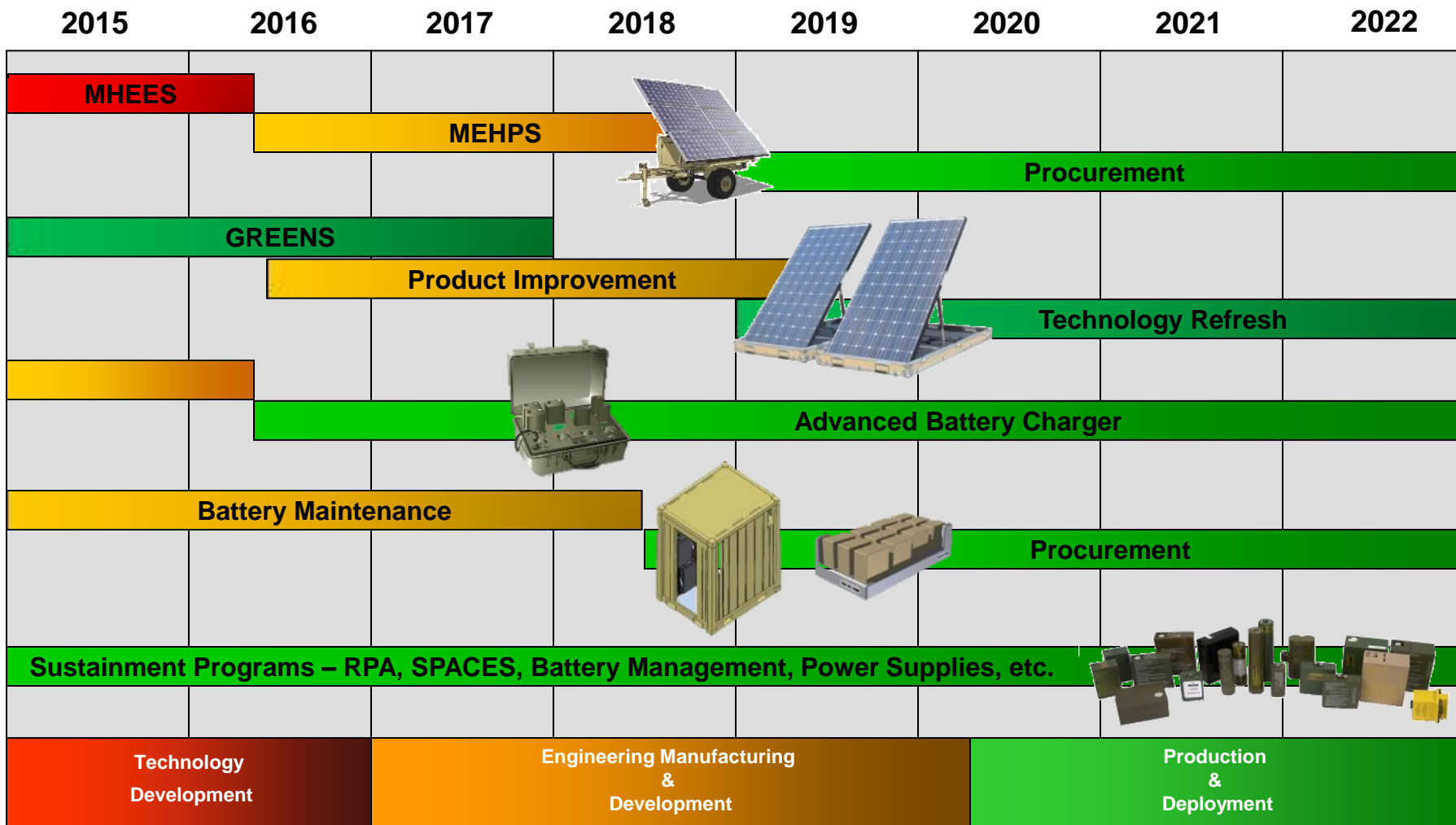
STEP – Small Tactical Electrical Power



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## Advanced Power Sources Key Initiatives



SPACES – Solar Power Adaptor for Communications Equipment System (30 Watt continuous)  
 GREENS – Ground Renewable Expeditionary Energy Network System (300 Watt continuous)

MHEES – Medium Hybrid Expeditionary Energy System  
 MEHPS – Mobile Electric hybrid Power System





## Power Generation



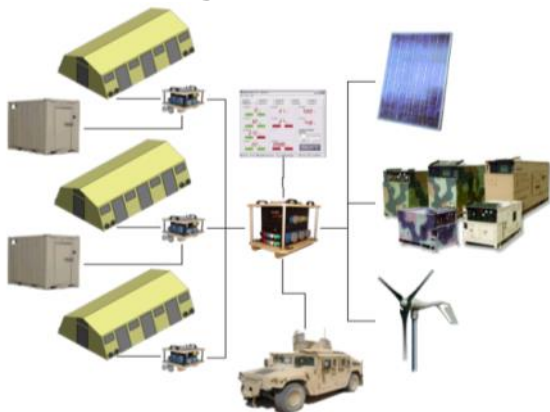
## Energy Storage



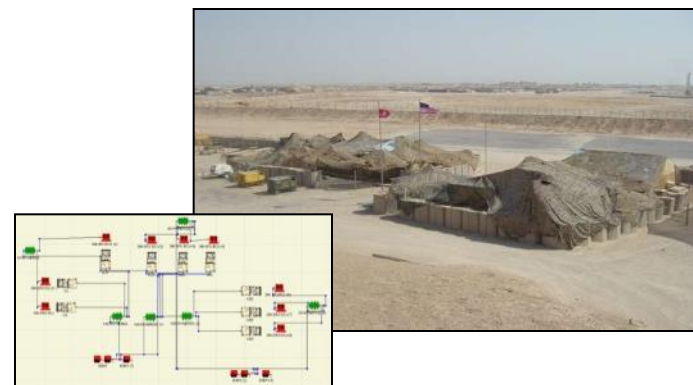
## Water Purification



## Power Management / Micro Gridding



## Experimentation, Modeling, and Tools





Title	Funding	RFP Release
Mobile Electric Hybrid Power System (MEHPS)	RDT&E	Fall 2015
Energy Storage for Micro Grids	RDT&E	Future
Advanced Battery Charger	PMC	Fall 2015
Platoon Water Purification System	-	Future
Individual Water Purification System	PMC	Summer 2017
Renewable Energy in Covered Locations SBIR	RDT&E	Now
Light Weight Hybrid Systems SBIR	RDT&E	Now
Small Light Weight Water Purification SBIR	RDT&E	Now
Battery Maintenance Capability	PMC	Summer 2018
MEHPS Production	PMC	Fall 2017
Tech Refresh of Systems	-	various



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Further Information

**Email questions to:**  
**PM\_EPS@usmc.mil**

**Find more programmatic information:**

**<http://www.marcorsyscom.marines.mil/ProgramOffices/EPHome.aspx>**

**[www.onr.navy.mil](http://www.onr.navy.mil)**

**<http://www.hqmc.marines.mil/e2o/E2OHome.aspx>**

**Current / Future Solicitations:**

**[www.fedbizopps.gov](http://www.fedbizopps.gov)**

**Any questions about on-going solicitations:**

**Must contact the listed Contracting Officer in the solicitation**





**QUESTIONS**