



“Art of the Long View”



Valuing Energy in Acquisition



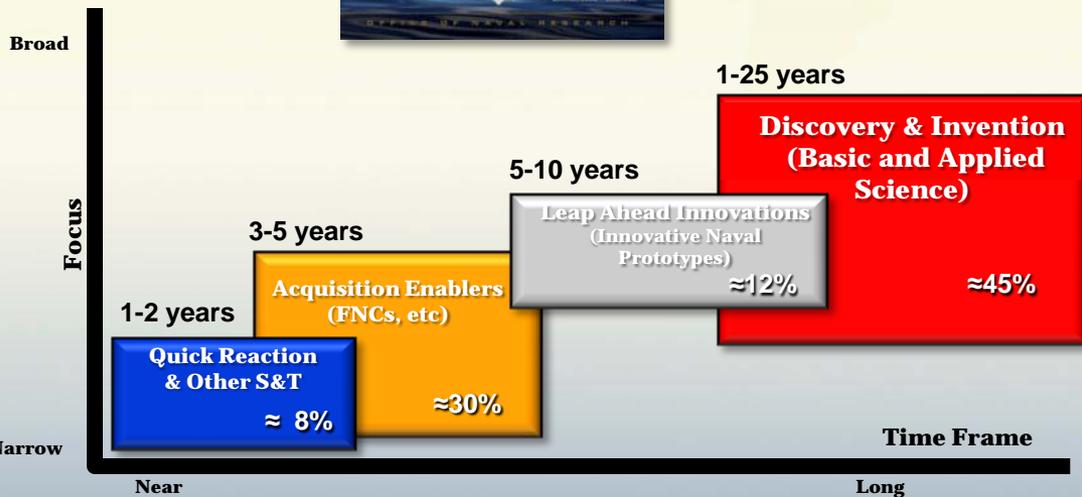
**RADM Matthew Klunder
Chief of Naval Research**

S&T Strategic Plan



S&T Plan Focus Areas:

- Autonomy & Unmanned Systems
- Assure Access to Maritime Battlespace
- Information Dominance
- Platform Design & Survivability
- **Power & Energy**
- ~~Strike & Integrated Defense~~
- Warfighter Performance
- Total Ownership Cost
- Expeditionary & Irregular Warfare



Tech Solutions



FNCs



INPs



D&I

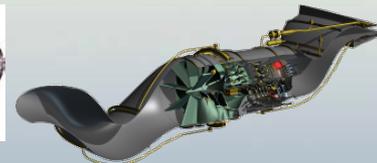
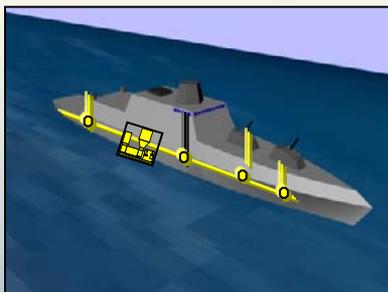
Power & Energy

Power & Energy S&T:

- Fuels
- Power Generation
- Energy Storage
- Efficient Distribution
- Energy Usage



ONR/TFE Naval Energy Forum
14-15 October 2009



Deployed Solar Power

India Co. 3/5 Deploys With 7 Systems

GREENS Tech. demonstrator
NAWS China Lake, CA



GREENS Tech. Demonstrator
Ex-FOB Phase II Quantico, VA



GREENS Prototype
Camp Pendleton, CA



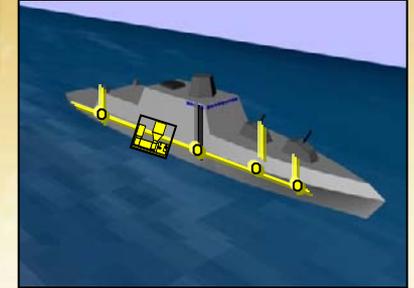
Ground Renewable Expeditionary Energy System - GREENS

- Less than 2 years for concept development to demonstration and deployment
- NSWCCD developed the technology with support from ONR, PM Expeditionary Power Systems, and the USMC Expeditionary Energy Office
- Successfully transitioned to Marine Corps Systems Command
- Marines from India Company 3/5 deployed to OEF with GREENS, operated two patrol bases entirely on renewable energy, and reduced fuel consumption at a third patrol base by 90%

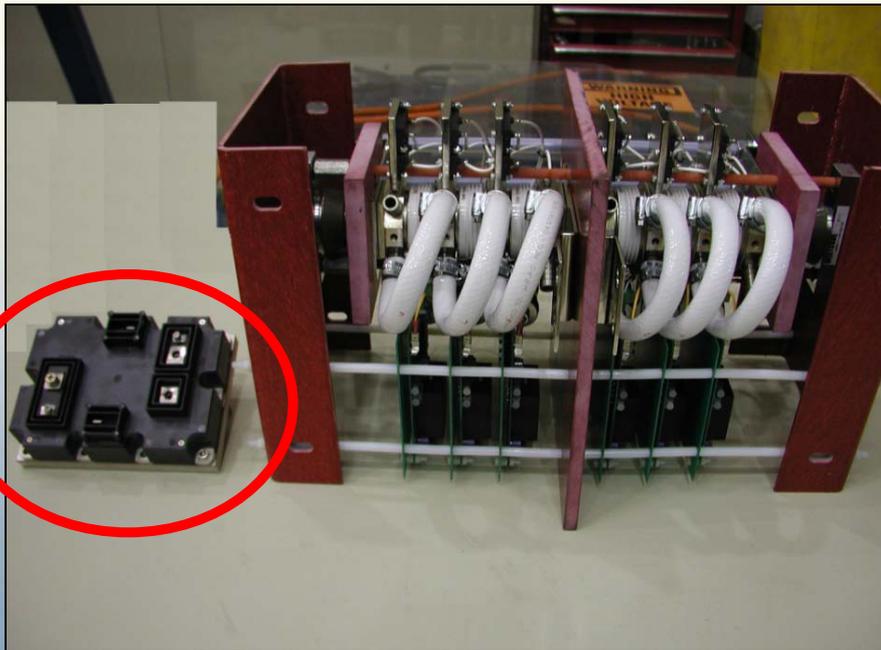
Silicon Carbide (SiC) Power Converters

3MW Power Converters, and Other Components

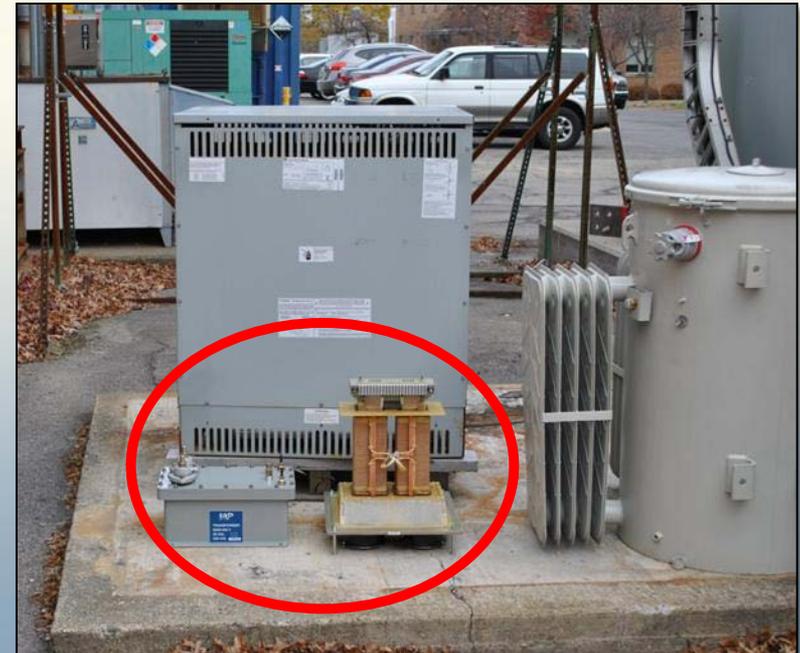
- Improved Power Quality
- 70% Volume Reduction
- 90% Weight Reduction



Switches



Transformers



Energy Systems Technology & Evaluation Program (ESTEP)

Ex: Data Center Smart Metering -SPAWAR Systems Center

SPAWAR



NPS

NAVFAC



- 10 Projects for Alternative Energy Systems Technology Demonstrations on Navy and Marine Bases

Evaluate technical approaches to cyber secure smart metering for data centers to reduce energy consumption

2012 ONR Naval S&T Partnership Conference

The 2012 S&T Partnership Conference will provide various avenues to access ONR leaders, program managers, and business operations staff. Don't miss this great opportunity!

Save the Date:

October 22-24, 2012 · Hyatt Regency Crystal City · Arlington, Va.



www.onr.navy.mil