

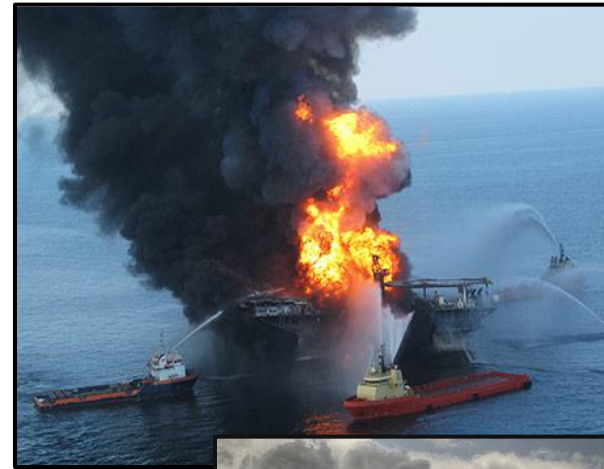
Operational Energy

A Warfighter's Perspective on Strategic, Operational, and Tactical Imperatives

CDR Esther McClure
DOD-DOE
Operational Energy Workshop
University of Maryland
June 23, 2010

Energy Dependence: A Strategic Vulnerability

- **Energy is a critical factor in:**
 - Economic well-being
 - Stability
 - Global competitiveness
- **Demand is growing**
- **Supplies are tightening**
- **Risks are multiplying**
 - Reliance on suppliers
 - Chokepoints
 - Critical infrastructure
 - Market volatility



Energy is at the nexus of powerful trends

Operational Energy Vulnerability

- **Energy in Navy's "Global 09" war game**
 - Risk initially underappreciated
 - Seaborne logistics forces
 - Shore-based assets
 - Complicated by force dispersion
 - Could constrain maneuver
 - Force Protection requirements



- Similar risks exist in current ground campaigns
- Entire supply chain is vulnerable to asymmetric threats

Energy-hungry Force Structure

❑ Impairs Tactical Effectiveness

- Vulnerability to forces and mission
- Increases casualties
- Constrains maneuver, limits endurance
- Dilutes combat effectiveness by increasing force protection demands



❑ Increases Cost

- Increases budget effects of volatile energy prices
- Funds used for energy are not available to buy warfighting capability

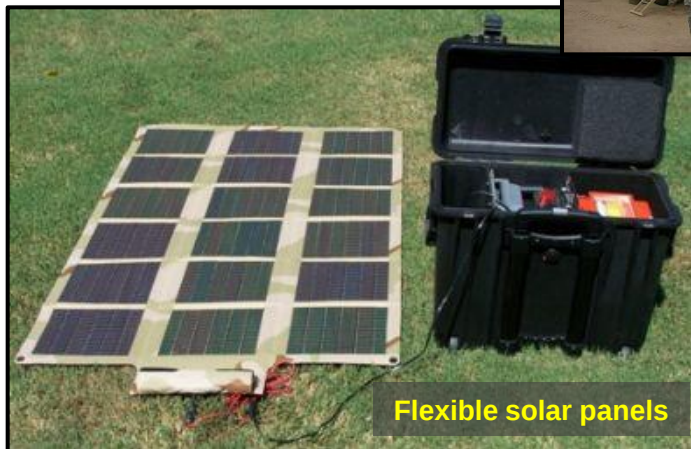
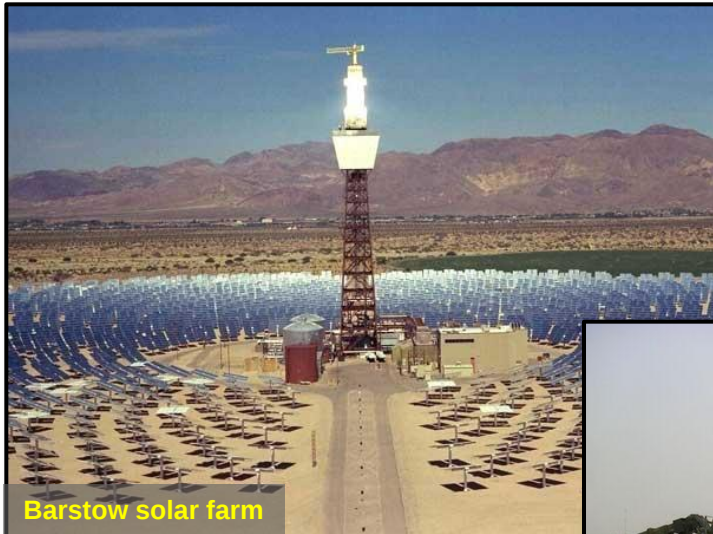
❑ Skews Force Structure

- More “tail”, less “tooth”



Current trends in program development will create a future force with an increased energy appetite

Shaping the Future



Questions?



Backups

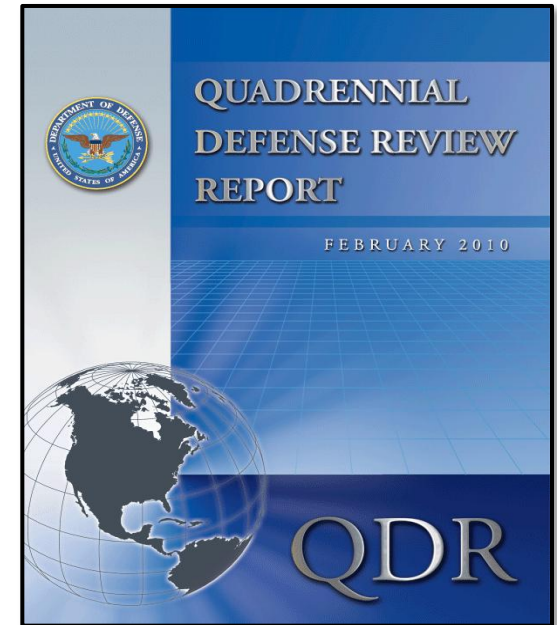
Initial Insights – QDR Energy White Paper

□ Energy

- *Four Key Strategic Themes*
 - Increasing risk to operating forces: conventional & asymmetric threats
 - Insecurity of the global commons: piracy, military action, chokepoints, politics
 - Supply and price volatility: demographics, development, climate change response
 - Grid vulnerability: renewable energy (variable supply), smart grid (variable demand)
- *Key Policy Considerations*
 - National Energy Security: Integrate national energy policy and foreign policy
 - Energy Policy Framework: Integrate both operational and facilities energy
 - Grid Security: Focus on mission assurance and long-term cost avoidance
 - Energy R&D: Focus on minimizing operational forces demand—mission assurance
- *Initiatives to Spotlight in QDR*
 - Reducing energy demand through acquisition reform: Mandatory energy efficiency key performance parameter, fully burdened cost of fuel
 - Incorporating energy into wargames and analysis
 - Developing and implementing sustainable energy policies: Maintain access to energy supplies, increase efficiency, increase use of renewables, reduce harmful emissions in support of U.S. government climate initiatives

Legislative Language

- ❑ **2008 NDAA Section 951 tasked QDR to consider the effects of climate change on DoD facilities, capabilities and missions:**
 - *“Examine the capabilities of the armed forces to respond to the consequences of climate change, in particular, preparedness for natural disasters from extreme weather events and other missions the armed forces may be asked to support inside the U.S. and overseas.”*
 - *“Use mid-range projections of the IPCC 4AR.”*
 - *“Use findings of appropriate and available estimations or studies of the anticipated strategic, social, political and economic effects of global climate change and the implications of such effects on the national security of the United States.”*



*Energy, climate change, and economic stability are
inextricably linked*