



# ***Energy Security: Strategic Overview***

**RADM Philip H. Cullom  
Director of Fleet Readiness, OPNAV N43**

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Global energy consumption is growing...



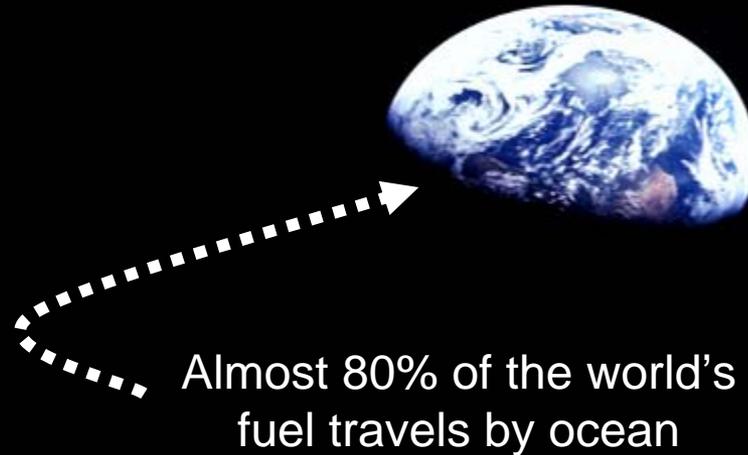
Today

... to unprecedented levels



2030

# The U.S. Navy protects the lifelines of the global energy economy

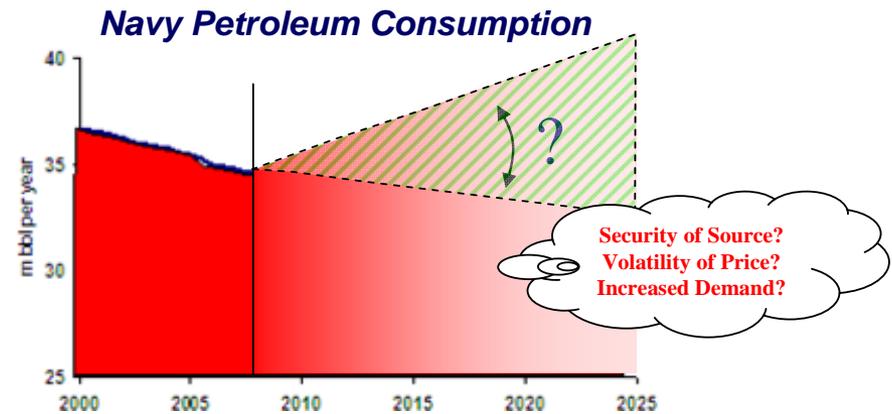
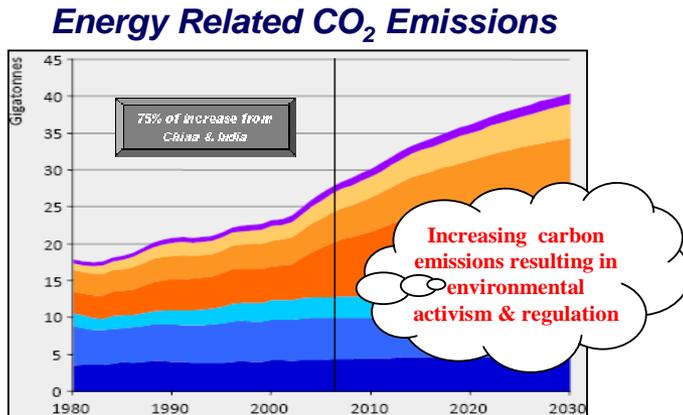
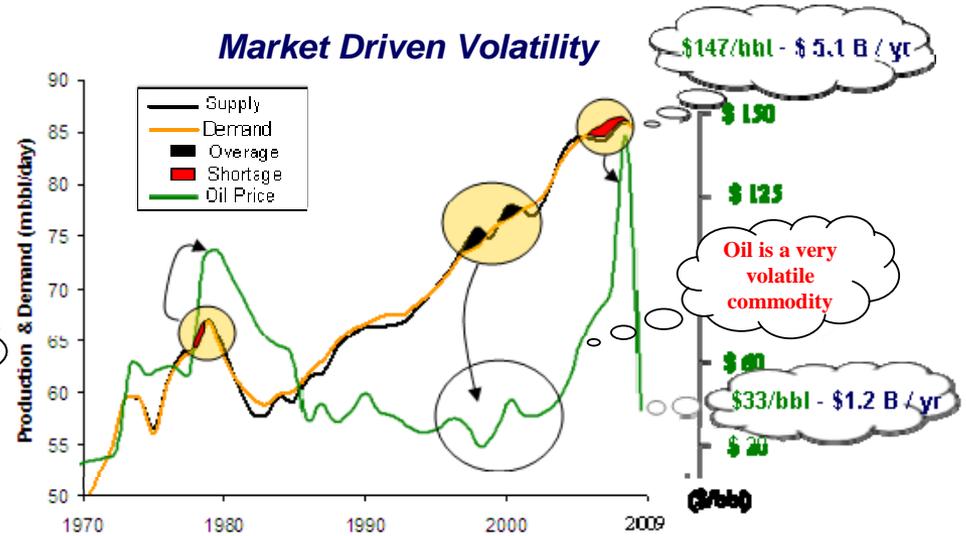
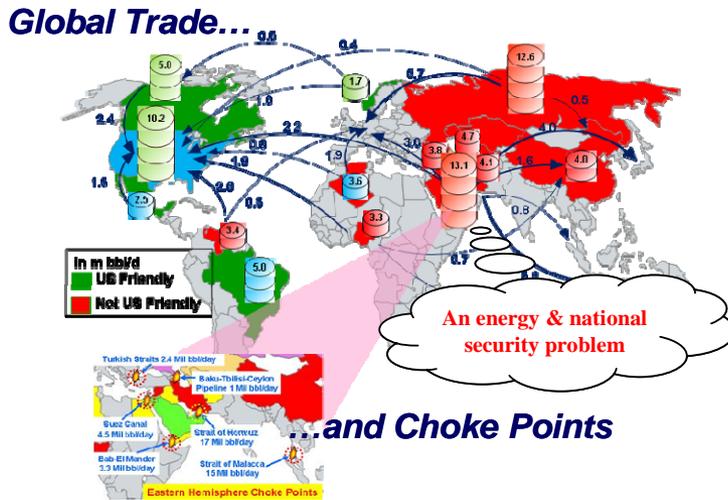


*“How inappropriate to call this planet Earth when it is quite clearly Ocean”*

- Arthur C. Clarke



# Global Energy Drivers



**Energy poses geopolitical, economic, and environmental challenges that call for aggressive technology and policy changes**



# Navy Energy Challenges

## Price Volatility

**Average Car:**  
**18.5 gallons per tank**



- Today:  
\$48.47 to fill

- Summer 2008:  
\$76.04 to fill

**Navy DDG-51:**  
**450,000 gallons per tank**



- Today:  
\$643,500 to fill

- Summer 2008:  
\$1,827,000 to fill

## Tactical



- Limited platform ranges
- Long and costly logistics tail for fuel delivery



## Shore

Dependent on grid  
vulnerable to:



- Physical or cyber attack
- Natural disaster
- Technical malfunction

**\$10 rise in price of barrel of oil increases  
Navy's annual fuel bill by \$300 million**

**Fuel and energy demands create  
vulnerabilities for Navy operations**



# Definition of Energy Security

## Energy Security

**Ensuring secure, sufficient, reliable, and sustainable energy for Naval tactical forces and shore installations.**

*Energy security is focused on transforming vulnerabilities associated with energy supply and demand into strategic and operational advantages.*

### Secure Energy

Energy protected from physical and cyber threats.

### Sufficient Energy

Energy in quantity and quality required to project and maintain operational effectiveness.

### Reliable Energy

Energy that can be produced, procured, distributed, and stored for consumption for an extended period of time regardless of security environment.

### Sustainable Energy

Energy that minimally impacts the environment in either the short- or long-term.

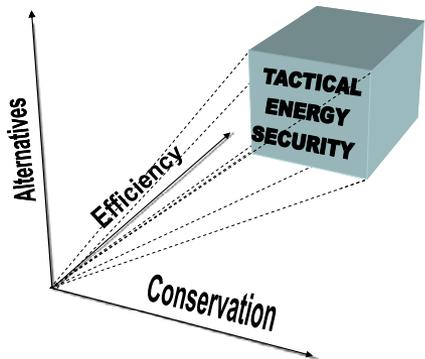


# Tactical & Shore Energy Security

## Tactical Energy Security

Protection from vulnerabilities related to the energy requirements of tactical platforms by reducing risk associated with a logistics tail, volatile petroleum prices, and instable or unfriendly petroleum suppliers.

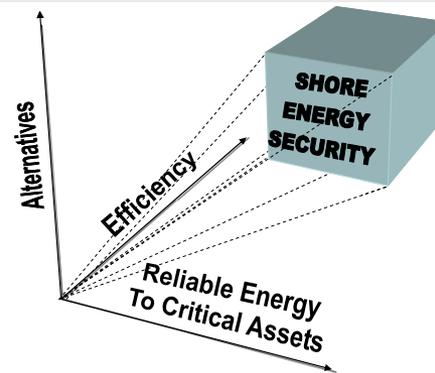
The Navy increases tactical energy security by decreasing overall liquid fuel consumption, increasing the fuel efficiency of tactical platforms, and using alternative fuels.



## Shore Energy Security

Protection from vulnerabilities related to the commercial electrical grid, which is susceptible to physical and cyber attack, natural disaster, and malfunction.

The Navy increases shore energy security by decreasing shore energy consumption, increasing shore energy efficiency, increasing the use of alternatives, and increasing the reliability of its energy supply to critical assets.





# Confirming Our Focus on Energy Security

## Global 2009

*“Sea control of logistics lanes, as well as defense of related logistics bases, were as important or more important than sea control of the main objective area, as secure logistics were key to being able to maintain a seaborne presence and continue the sea control fight.”*

- Global '09 Summary

- Naval forces require secure, sufficient, reliable, and sustainable energy to maintain mission effectiveness
- High fuel consumption rates place a significant stress on logistics lanes that enable the exercise of seapower
- Access to sufficient quantities of petroleum-based fuels relies on vulnerable logistics lanes outside the theater of operations

**Energy Security**

**Assure Mobility**

**Expand Reach**

**Green Footprint**

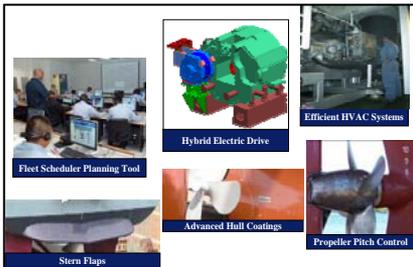
*“Logistics is an Achilles heel of ours... A force that was more fuel efficient would have reduced forces required to support warfighting assets and reduced warfighting assets required to support supply assets. This would have significantly added warfighting capacity to forces assigned.”*

- Global '09 Participant

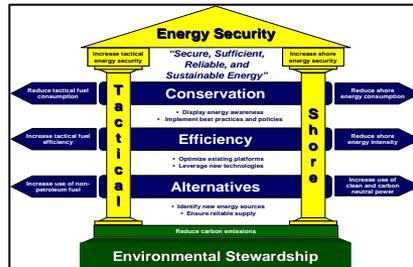


# Navy Energy Line of Sight

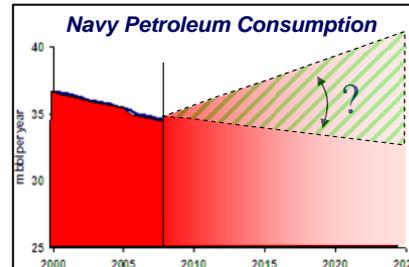
## 5 Year Plan



## 10 Year Goals



## 20 Year Vector



## 30 Year Ambition



- Chart an aggressive technology and policy course change
- Recognize and leverage quick wins
- Emphasize energy across planning, programming, budgeting, and execution

- Achieve measurable results for shore and tactical energy security
- Link energy and environmental stewardship
- Make energy a strategic resource to provide operational advantages

- Refine Energy Goals
- Enhance platforms with cutting-edge energy technology
- Refine existing strategic documents and planning to address energy

- Maintain the long-range perspective of the Energy Ambition
- Envision a variety of alternative futures
- Ensure active consideration of energy in future strategic documents and planning

**Task Force Energy is laying the foundation for a long-range holistic Energy Strategy**