Introduction

L. Dean Simmons, JHU/APL
Symposium Chair

23 March 2010

Distribution Statement A: Approved for public release; distribution is unlimited.
Welcome to the

2010 CLIMATE + ENERGY

IMPERATIVES FOR FUTURE NAVAL FORCES
Why Climate & Energy?

• US national security community has expressed increasing concern regarding potential effects of changes in climate and energy
  – DNI’s 2009 Threat Assessment declares: “Climate change, energy, global health and environmental security are often intertwined, and while not traditionally viewed as threats to U.S. national security, they will affect Americans in major ways.”
  – In Sep 2009, CIA established Center for Climate Change and National Security to assess impacts of “desertification, rising sea levels, population shifts & heightened competition for natural resources”
  – 2010 Quadrennial Defense Review discusses importance of “Crafting a Strategic Approach to Climate and Energy”
• **Crafting a Strategic Approach to Climate and Energy**
  
  – Climate change and energy are two key issues that will play a significant role in shaping the future security environment.

• **Climate change will affect DoD in two broad ways.**
  
  – First, climate change will shape the operating environment, roles, and missions that we undertake.
  
  – Second, DoD will need to adjust to the impacts of climate change on our facilities and military capabilities.
• According to US Global Change Research Program*, observed effects of climate change include:
  – Rising temperature and sea level
  – Rapidly retreating glaciers
  – Thawing permafrost
  – Lengthening growing seasons
  – Lengthening ice-free seasons in the oceans and on lakes and rivers
  – Increases in heavy downpours
  – Earlier snowmelt
  – Alterations in river flows

National Security Impacts of Climate Change

• According to the 2010 QDR, “Assessments conducted by the intelligence community indicate that climate change could have significant geopolitical impacts around the world, contributing to
  – **Poverty,**
  – **Environmental degradation,** and the
  – **Further weakening of fragile governments.**

• Climate change will
  – Contribute to **food and water scarcity,**
  – Increase the **spread of disease,** and
  – May spur or **exacerbate mass migration.”**
• Energy security for the Department means
  – Having assured access to reliable supplies of energy
  – The ability to protect and deliver sufficient energy to meet operational needs.
Principal Petroleum Consumers

- USA is the world’s largest petroleum consumer in absolute terms; China is 2nd, India is 6th.
- In per capita terms, USA ranks 3rd, China & India are far behind (by factors of 13 & 30, respectively).
- Relative to USA, increase in per capita consumption in China or India is leveraged by a factor of 4 given their billion+ populations.
Principal Petroleum Producers

- USA produces ~40% of the petroleum we consume each day
- Remaining 60% must be imported, sometimes from nation’s whose interests may differ markedly from ours
  - Russia
  - Iran
  - China
  - Venezuela
  - Libya
Some observers argue that world is nearing “peak production” – and hence that global demand will soon begin to exceed supply.

Small changes in petroleum demand can lead to substantial changes in price.

Today’s Price >$80 per bbl
• Effects of climate change will be keenly felt by our nation’s naval forces
  – Reduction in Arctic sea ice will provide new sea routes and increased access to natural resources
  – Rising sea levels will affect
    • 40% of world population who live within 100 kilometers (60 miles) of the sea coast (~3 billion people)
    • Installations used by Navy, Marines, and Coast Guard
  – Changes in frequency and severity of storms will affect demand for humanitarian assistance
  – Navy’s Task Force Climate Change established to address such concerns
• Changes in petroleum supply – to include source, quantity, and price – will have significant effects on our nation’s naval forces
  – Navy, Marine Corps, and Coast Guard
    • Devote significant resources to securing U.S. access to energy resources, especially petroleum
    • Consume large amounts of increasingly expensive petroleum products themselves
  – Navy’s Task Force Energy and Marine Corps Expeditionary Energy Office established to address such concerns
Symposium Objective

• How will changes in climate and energy affect future US Naval Forces?
  – What will our naval forces need to be able to do?
  – How should they be organized to accomplish those tasks?
  – How should they be equipped to accomplish those tasks?

Geographic Regions

North & South America
Europe & Africa
Asia & the Pacific
Symposium Logistics

- Entire symposium is being videotaped by Defense Media
- Open to the public; press participation
- Check-in required both days

Questions and comments
- Open microphone for featured speakers
- Question cards for roundtables
- Electronic systems for comments and questions
  - Instructions in your program
  - UNCLASSIFIED input for ALL speakers and roundtables
    - Comments only for featured speakers
    - Comments AND questions for roundtables

Symposium Proceedings available in August timeframe
  - Distributed to all symposium participants and attendees

Presentations will be posted soon, subject to authors’ restrictions