Military Adaptation to Climate Change

Ms. Ninette Sadusky

International Policy Advisor

OUSD(Acquisition, Technology & Logistics)/DUSD(Installations & Environment)
Office of the Secretary of Defense
United States of America

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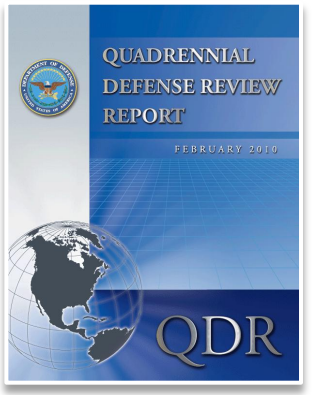
Secretary Robert Gates

"…The melting of the polar ice cap in the Arctic plus the frequency and intensity of weather events in this hemisphere, with the corresponding need for military humanitarian assistance missions, calls for a greater attention to the security implications of climate change. …"

Remarks at the Halifax International Security Forum, Halifax, Nova Scotia Nov 2009

2010 Quadrennial Defense Review

- **For the first time, DoD explicitly evaluated climate change as part of the QDR.**



- **Climate change influence DoD's:**
  - Operating environment
  - Missions

- **DoD will need to adapt to the impacts of climate change**
  - Retain Mission Capability Resilience
  - Address Changing Missions

US Climate Change Trends & Challenges

Climate Drivers at US installations

- ❑ Arid areas of the Southwest will become hotter and drier
- ❑ Increased temperatures and weather extremes in the Southeast
- ❑ Rising temperatures will impact cold-region installations
- ❑ Coastal areas will be impacted by sea level rise and storm surge

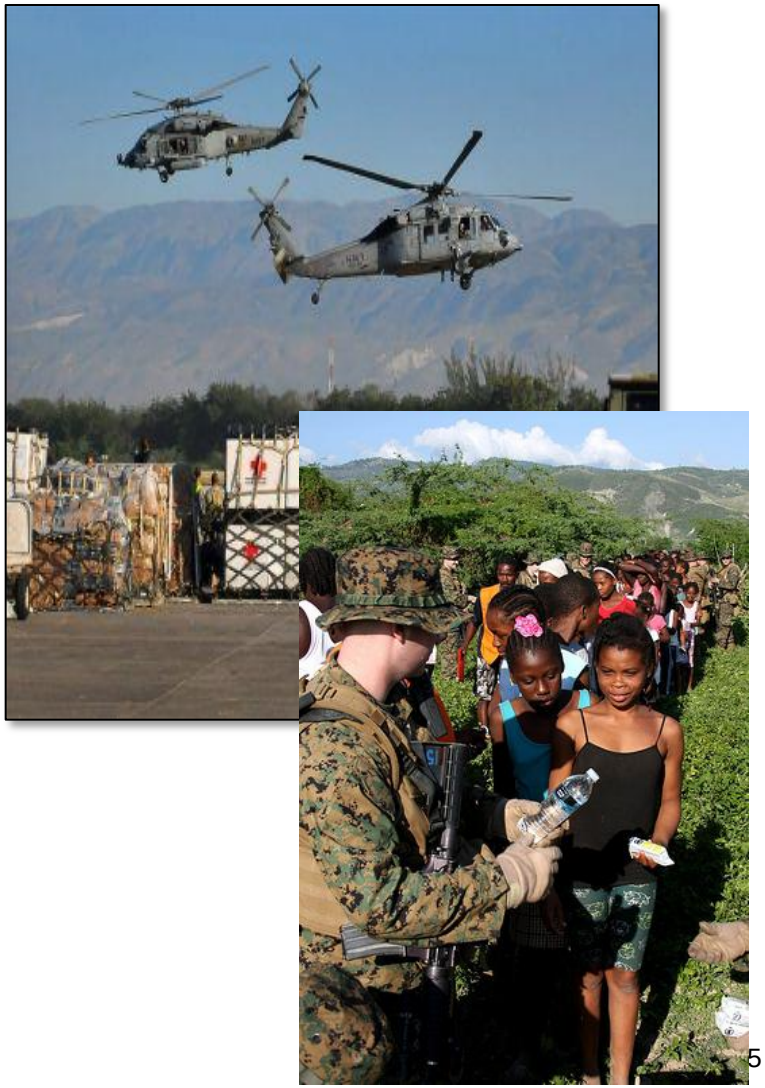
Climate Change Impacts on DoD

Vulnerabilities

- ❑Built infrastructure
- ❑Stressed ecosystems
- ❑Training and testing lands

Military mission capability

- ❑????
- ❑????



Changing Mission

- **Changing (expanding) requirements**
  - Humanitarian Assistance/Disaster Relief
  - Peace Keeping
  - Other
- **Changing operational environment**
  - Actual change to environment
  - Equipment limitations
  - Force health protection
  - Logistics challenges

Resilience

Retain Military Mission Capability

- **Presidential Direction**
  - **Improve federal government efficiency through development of a green economy and decreased dependence on fossil fuels.**
  - **"DoD vision is to maintain the ability to operate into the future without decline – either in our mission or in the natural and manufactured systems that support it"**

- **Key Areas to Improve Mission and Reduce Overall Cost**
  - **Energy & Reliance on Fossil Fuels**
  - **Chemicals of Environmental Concern**
  - **Water Resources Management**
  - **Maintaining Readiness in the Face of Climate Change**

Objectives & Goals

OBJECTIVE 1

Continued Availability of Critical Resources

- Goal 1 – Use of Fossil Fuels Reduced
- Goal 2 – Water Resources Management Improved

OBJECTIVE 2

DoD is a U.S. Government Leader in Reducing GHGs

- Goal 3 – Scope 1 & Scope 2 GHG Emissions Reduced 34% by 2020, relative to FY08
- Goal 4 – Scope 3 GHGs reduced 13.5% by 2020, relative to FY08

OBJECTIVE 3

Minimize Waste and Pollution

- Goal 5 – Solid Waste Minimized and Optimally Managed
- Goal 6 – Chemicals of Environmental Concern Minimized

OBJECTIVE 4

Management and Practices Built on Sustainability & Community

- Goal 7 – Sustainability Practices Become the Norm
- Goal 8 – Sustainability Built into DoD Management Systems

OBJECTIVE 1:
Continued Availability of Critical Resources

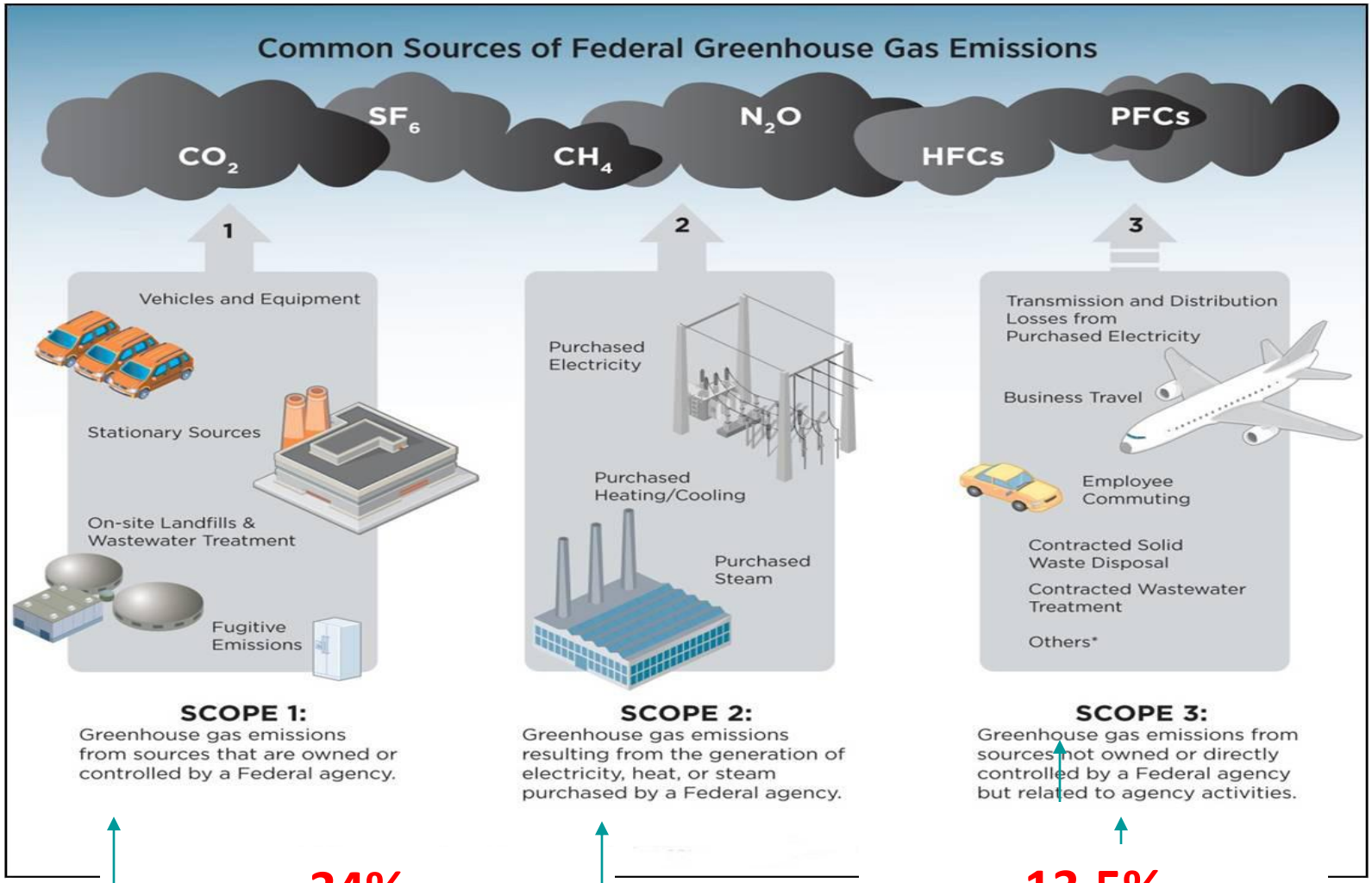
- *Energy Intensity by DoD Facilities Reduced by 30% of FY 2003 Levels by FY 2015 and 37.5% by FY 2020*
- *18.3% of Energy Consumed by DoD Facilities is Produced or Procured from Renewable Sources by 2020*
- *Use of Petroleum Products by Vehicle Fleets Reduced 30% by 2020 Relative to 2005*

Goal 1 - Use of Fossil Fuels Reduced

- *Potable Water Consumption Intensity by Facilities Reduced by 26% of FY 2007 Levels by FY 2020 (contributes to energy goals)*
- *DoD Industrial and Irrigation Water Consumption Reduced by 20% of FY 2010 Levels by FY 2020 (contributes to energy goals)*
- *All DoD Development and Redevelopment Projects of 5,000 Square Feet or Greater Maintain Pre-Development Hydrology to the Maximum Extent Technically Feasible*

Goal 2 - Water Resources Management Improved

OBJECTIVE 2: Reducing Green House Gases



34% Reduction Target

13.5% Reduction Target

OBJECTIVE 3: Minimize Waste and Pollution

- *All DoD Organizations Implementing Policies by FY 2014 to Reduce the Use of Printing Paper*
- *50% of Non-Hazardous Solid Waste Diverted from the Waste Stream by 2015 and Thereafter Through 2020*
- *60% of Construction and Demolition Debris Diverted from the Waste Stream by 2015, and Thereafter Through 2020*
- *Landfills Recovering Landfill Gas for Use by DoD: Two by FY 2012 and Ten by 2020 (contributes to energy goals)*

Goal 5 – Solid Waste Minimized and Optimally Managed

- *15% Reduction of On-Site Releases and Off-Site Transfers of Toxic Chemicals by 2020, Relative to 2007 (can contribute to energy goals)*
- *100% of DoD Excess or Surplus Electronic Products Disposed of in Environmentally Sound Manner*
- *100% of DoD Personnel and Contractors that Apply Pesticides Properly Certified Through 2020*

Goal 6 – Chemicals of Environmental Concern Minimized

OBJECTIVE 4: Management and Practices

- *95% of Procurement Conducted Sustainably (can contribute to energy goals)*
- *15% of Existing DoD Buildings Conform to the Guiding Principles on High Performance and Sustainable Buildings By FY 2015, Holding Through 2020 (contributes to energy goals)*

Goal 7 – Sustainability Practices Become the Norm

- *All Environmental Management Systems Effectively Implemented and Maintained (should assist energy goals)*
- *The Sustainability of Transportation and Energy Choices in Surrounding Areas Optimized by Coordinating with Related Regional and Local Planning (contributes to DoD and national energy goals)*
- *All DoD Installations Have Integrated Pest Management Plans Prepared, Reviewed, and Updated Annually by Pest Management Professionals*

Goal 8 – Sustainability Built into DoD Management Systems

Adaptation

- **Assess vulnerabilities**
- **Develop strategies to address vulnerabilities**
  - Invest in research and development to fill the gaps
- **Integrate into planning and operations**

Partnering for Success

- No U.S. government "lead" on climate change, but DoD can demonstrate leadership
  - Reduce emissions in support of national mitigation goals
  - Share data and solutions to assist in adaptation efforts
  - Adjust mission capability

- Partner with other U.S. government agencies such as:
  - Department of Energy
  - Department of Homeland Security
  - State Department
  - US Agency for International Development

- Partner with Other Militaries

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