

CLIMATE CHANGE AND ENERGY:
21ST CENTURY CHALLENGES TO NATIONAL SECURITY
Closing Keynote Address

by

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Thank you. It is wonderful to be back with you after 8 years. I had the privilege of serving with many of you during my 8 year tenure as Deputy Undersecretary of Defense (Environmental Security). I relish this opportunity to be back with you, to see old friends and to make new ones in the distinguished defense environmental and energy community. If I can deliver one message to you today, it is that DOD has a critically important role to play in today's energy, climate change, and sustainability challenges, and each of you has a key contribution to make to this national effort which has global consequences for our future.

We are living in a challenging era, when our choices today will reverberate through the rest of this century and into the centuries beyond. And while foremost on the world's agenda now is the economy, we cannot let those challenges overwhelm us, or delay our efforts to address the other great challenge of this era: climate change and its twin, energy use.

The work I have done with some of our nation's leading generals and admirals on CNA's Military Advisory Board has revealed that climate change is far more than an environmental threat. It is a military threat, a stability threat, and as fundamental a threat to global security today as nuclear weapons were during the Cold War.

During the Cold War, we referred to the potential for an attack by the Soviet Union as a low probability/high consequence scenario, meaning that although it was not likely to happen, if it did, the consequences would be devastating.

Climate change fits into that same scenario, with one very important exception. For each day that passes without action, we inch ever closer to a high probability/high consequence scenario – with consequences that loom large in their potential for environmental upheaval, and, in turn, as threats to our national security.

This is not speculation, but the conclusion reached by the Military Advisory Board CNA convened in 2007. The group of retired 3- and 4-star flag and general officers from all services – Army, Navy, Air Force and Marine Corps – also represented many of our Combatant Commands. We came together to better understand how climate change will affect our national security, and to lay the groundwork for mounting responses to the threats we found.

Our report, *National Security and the Threat of Climate Change*, identified key challenges that we must plan for now if they are to be met effectively in the future. It articulated the concept of climate change acting as a “threat multiplier” for instability in some of the most volatile regions of the world.

That construct -- of global climate change as a threat multiplier -- is an important insight into this issue because it recognizes that the effects of climate change are not subject to linear equations, but play in complex ways, carrying the potential to result in multiple chronic conditions occurring globally at the same time.

Consider the consequences of global climate change: retreating glaciers, rising seas, increasingly severe hurricanes and storms, floods, heat waves, drought, shifting habitat, the spread of diseases.

Then consider the human consequences wrought by those changes: loss of coastal regions – comprising the most heavily populated and critical commercial and military areas of the world, reduced water supplies, decreasing long-term agricultural productivity, hunger, widespread health crises, and mass migrations forced by environmental change and a desperate search to meet basic human needs.

So, when climate change exacerbates the marginal living standards of many Asian, African, and Middle Eastern nations, where widespread political instability and failed states are currently national security concerns, it won't simply mean a drop in GDP or other dispassionate measurements of economic decline. It will mean, in real terms – in terms of people – elevating human misery to crisis levels in many areas of the world, and societal chaos that is not confined by borders or cultures.

The all-too-often response to these projections is, “people will just have to move.” But the grim realities of such events are far more complicated and catastrophic, especially in a national and international security context.

Mass human migrations are destructive, destabilizing events – for those nations losing their citizens, and for those nations taking in refugees. And the forced movement of people is one of the most severe threats posed by climate change.

Consider Darfur – which may become known as the first conflict spawned by climate change. That unrest was triggered when desertification forced herders onto the land of farmers. It has not been a fight for power, per se, but a struggle by desperate people to survive in a drastically changed environment.

And, sadly, it may be only the beginning.

As the years progress, climate change and rising seas will force the movement of tens of millions of people in such places as the Niger and Nile Deltas, and in Bangladesh. And while that does not automatically mean the onset of violence and war, it is upheaval on a scale that, at minimum, jeopardizes peace and order.

These threats are real, and translate into serious national security concerns. Indeed, recent Senate testimony by the President's Director of National Intelligence, retired Admiral Dennis Blair, said that the "intelligence community judges that global climate change will have important and extensive implications for US national security interests over the next 20 years." And as Michelle Flournoy – the new Under Secretary of Defense for Policy – has said, climate change is an accelerator for state failure.

Countries near the brink will be pushed closer to – and over – the edge as crop production declines, hunger and illness increase, and water resources ebb. And many strife-torn countries will be further weakened, opening new doors to extremism, conflict, and radical ideologies.

As these tests come to the fore, the U.S. will not be able to stand by as events unfold. Alone or with allies, our military will be called into action – whether to help stabilize a nation or region as conditions worsen, or to undertake reconstruction after a catastrophe occurs.

These challenges are daunting but they must be faced. And I am pleased to say that since the release of our first report, some critical work has begun.

- The 2008 National Intelligence Assessment confirmed our finding that climate change is a serious threat to national security and to long-term global stability.
- Congress has directed Defense officials to include climate change considerations in their planning.
- Efforts are underway to increase the U.S. military's coordination with other nations to help prevent, mitigate, or adapt to the likely consequences of climate change.
- And the Strategic Environmental Research and Development Program, founded by Senators Nunn and Gore, has launched projects to evaluate sea-level rise and the ecological impacts on military installations posed by climate change, as well as improving energy efficiency for our deployed forces.

Also, in direct response to the recommendations of CNA's report, DoD has developed a list of questions they're going to be asking in their assessment of the impacts of climate change on roles, missions, and installations in the QDR.

I would like to share these questions with you, and ask that you share your responses with me and Cdr EJ McClure in OSD Policy, who is heading Energy and Environmental Strategy for the QDR. Here they are:

1. What role should DoD play in our nation's response to climate change?
2. What capabilities will the DoD need to support civil authorities in effectively responding to climate change events?
3. What capabilities and capacity will DoD require to build partner capacity to adapt to climate change?

4. What specific risks does climate change pose to DoD installations?
5. How might DoD mitigate energy supply risk to widely dispersed forces engaged in cooperative security or irregular warfare?
6. How might DoD mitigate its dependence on the U.S. commercial grid from critical infrastructure and missions?
7. What acquisition or business process reforms might improve DoD's energy posture?

Clearly these are not questions that lend themselves to short answers or challenges that will be met by a single solution. DOD's responses to these questions will shape our nation's future. Your insights can provide valuable input to this important national assessment.

So, as you can see, awareness is moving us to act. But much more needs to be done – in efforts specific to the environment and, as indicated by the last three questions, in efforts specific to energy use.

Chief among the findings in our climate change report was the conclusion that climate change, national security, and *energy dependence* are an interwoven set of global challenges. We cannot effectively confront the climate crisis without confronting – and changing – the way we use energy.

It also became clear that the military's energy use is, by itself, a serious security concern. This led us to the subject of our next Military Advisory Board report – due out very soon – focusing on the military's energy use and how to begin addressing the growing threat it poses.

The inescapable equation is this: our dependence on fossil fuels leaves us vulnerable – as a nation and as a military – to hostile regimes and terrorists, no matter oil's price and availability.

The issue of oil dependence *is* one that affects our nation as whole. But the Department of Defense, as the nation's single largest user of energy, has an important role to play in redefining the nation's relationship to energy.

DoD must provide the kind of strategic decision-making that can ripple across the rest of the economy – acting, if you will, as a solution-multiplier.

That is the crux of the upcoming energy report, and while I don't want to steal its thunder, I will tell you we are recommending concrete steps – in planning, *monitoring*, and implementing – that in our lifetime, and certainly in the lifetimes of our children, can transform the way we do business vis-à-vis energy.

I stress “monitor” because, as the maxim goes, “You can't manage what you don't measure.” An effective response to energy challenges requires a full understanding of the size and scope of those challenges. The DoD must assess its energy use at all levels of operation and fully define what we call its “carbon footprint.”

Our US military facilities, for example, should install equipment to monitor energy use at each installation – not only to understand current consumption, but to assess potential future costs, identify best practices for achieving efficiencies, and to map out a plan for the future.

Not that there hasn't been progress.

- The Department has made some remarkable strides over the last several years, including constructing the continent's largest solar array at Nellis Air Force Base.
- The Army just announced the largest-ever purchase of neighborhood electric vehicles for use on its installations, and will be using 4,000 of these gasoline-free vehicles by 2011.
- Fort Carson has set a goal of becoming a net zero CO2 emitter within 20 years, and they also have a goal of zero solid waste to landfills. they have partnered with a local electricity provide and installed a 2 megawatt solar electricity generation on the installation, sited on otherwise unusable land that was a landfill. They are also building with "smart growth" in mind, placing things like housing and work centers in close proximity to allowing walking, and whenever possible are building new buildings with south-facing roofs to allow passive solar
- And the Navy has made a priority of installing advanced electricity meters on their facilities – the first step in increasing efficiency and adopting next-generation smart grid technologies.
- The Services are also collaborating with the National Renewable Energy Lab on building Net Zero bases, which will combine energy efficiency with small-scale renewable generation to produce as much energy as they consume.

However, even with these innovations, there is still a long way to go before we achieve a truly secure and reliable supply of energy to our bases.

To reach that goal – while ensuring that critical missions are not put at risk – the Department must push aggressively to develop renewable energy sources, modernize the electricity infrastructure that they depend upon, and better understand where and how they use energy.

Energy use in the battlefield is also of critical importance to DoD. The human, economic, and equipment costs of delivering fuel to combat forces is significant.

Two-thirds of the tonnage deployed to the battlefield in the early stages of a conflict is fuel and water. So it's a pretty simple calculation that, if our fighting and support vehicles used less energy, fewer dangerous convoys to the front would be needed and fewer servicemen's lives would be put at risk.

Numerous DoD studies have concluded that high-fuel demand by combat forces detracts from combat capability: making our forces more vulnerable, diverting combat assets from offensive operations to supply-line protection, and increasing operating costs.

These, too, are issues that must be addressed and the conflict in Iraq has made them pointedly obvious, prompting Lieutenant General James Mattis, who commanded the First Marine Division during Operation Iraqi Freedom, to ask the Department to “unleash us from the tether of fuel.”

Before I conclude, I want to stress that, no matter the urgency of the climate and energy crises we face, the Department of Defense must first and foremost advance its mission of protecting the nation’s security through fighting and winning its wars.

We need to ensure that efforts to improve DoD’s energy-climate posture meet certain criteria, including 1) improving operational effectiveness, 2) improving operational efficiency, 3) improving energy productivity, and 4) not increasing greenhouse gas emissions. In other words, we need to reduce our carbon boot print as we develop and field more energy efficient technologies.

By selecting energy solutions that meet those four criteria, the military can be a major player in helping the nation achieve energy and climate security.

Like the climate report, it’s our hope that the Military Advisory Board’s energy report will also serve as a catalyst in bringing attention to these critical issues and in generating strategies, plans and programs to address them.

When the Kenyan founder of the Greenbelt Movement, Wangari Maathai , received the Nobel Peace Prize in 2004, the Nobel Committee stated:

“Peace on earth depends on our ability to secure our living environment.” That is more true with every passing day.

We must harness America’s innovation and creativity to create a new clean-energy future for our nation and to restore American leadership on climate change and energy. That is the future I want to leave my children, and that I know you want too. Together – we can.

Thank you.