

REMARKS BY SHERRI GOODMAN
PLENARY SESSION
PARTNERS IN ENVIRONMENTAL TECHNOLOGY
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Thank you. It's a pleasure and honor to be here. Thank you Jeff, Brad and the entire SERDP /ESTCP team for your dedication to these important programs. Thank you to all the DOD/DOE/EPA and Federal professionals who have remained committed to the environmental security mission throughout the last 8 years. Your time has now come.

I come here today as a veteran of many energy, environment and climate campaigns having served, back in the day, on the Senate Armed Services Committee, working for Chairman Nunn, overseeing the Department of Energy's defense and environmental programs and serving from 1993-2001 as Deputy Undersecretary of Defense for Environmental Security.

And I am veteran enough – which sounds so much better than saying “old enough” – to have seen the noble beginnings of the Strategic Environmental Research and Development Program, when in 1990 Senators Nunn and Gore recommended the creation of a program composed of several agencies and departments that would seek to apply Cold War era defense technologies for environmental benefits, leading to the creation of SERDP and leading to SERDP becoming the DOD's cutting edge environmental science and technology program.

And in the mid-1990s – when so many were facing the Valley of Death in environmental technology development, and trying to get laboratory-scale technology into the hands of the ultimate DOD users and approved by environmental regulators – to have created DOD's Environmental Security Technology Certification Program (ESTCP), which has become the essential element in demonstrating and validating promising environmental and energy technologies for military use.

And since then it's been smooth sailing for all of us...except, of course, for the rocky shoals, gale-force winds, dead calms and other obstacles that we have faced over the intervening decades.

No, we have not always sailed in a straight line under clear skies.

The ever-changing demands on our military as war fighters, peace keepers, stability forces, security planners, technology developers, diplomats, and soldiers don't often allow for simple solutions, especially when striving to meet challenges that range from the danger to individual soldiers posed by Improvised Explosive Devices (IEDs), to the dangers posed to all humankind by a warming atmosphere that threatens to permanently alter our climate and, literally, change life as we know it.

As I prepared my remarks for this event, I also thought of what my remarks would sound like if I were so fortunate as to come back twenty-two years from now to commemorate SERDP's 40th birthday.

The speech I envision would be filled with admiration for the work all of you had so diligently performed to help the DOD, the nation, and the world address DOD's environmental and energy challenges and avoid the worst impacts of climate change, while also recognizing your contribution to the actions that we had to take to adapt to the impacts that were already in the pipeline.

But to be able to deliver such a speech, the nation and the world will have to travel down a different path than the one that been traveled so far.

I realize that's not a news bulletin, especially for everyone here. We first heard about the theory of global warming decades ago. In fact, I was working in Congress when Jim Hansen from NASA provided his now famous testimony on the threat posed by global climate change.

Since then, I, and all of you have watched as the fact of global warming has become more firmly established every year, even against the most ardent objection and obstruction from those who believe it a hoax.

And while it seems that it has taken a long time to get us to this point, we are today – finally – moving more aggressively to understand, with specificity, the threats posed by climate change, and to undertake the planning necessary to address those threats and deliver us to a climate-secure future.

Now many of you know that I have devoted my professional life to working at the intersection of military and environmental matters, which I sometimes describe as going from weapons to waste. And in the future that list will undoubtedly grow to include energy and water – the elements that will bring us a new green-sector economy, create jobs for Americans, and restore American leadership around the world.

With this goal in mind, a few years ago I began an effort to mobilize military leaders around climate change as a national security matter.

That was the general aim of the Military Advisory Board CNA convened in 2007: to better understand – and articulate – how global climate will affect our national security, and to lay the groundwork for mounting responses to the threats we found.

For those of you not familiar with the Military Advisory Board or its report “National Security and the Threat of Climate Change” let me share some of what we found because I believe it informs where SERDP and ESTCP initiatives need to go in the future.

The MAB, as we call it, is made up of a group of retired 3- and 4-star flag and general Officers from the Army, Navy, Air Force and Marine Corps. It's a very impressive group, and you know all the names: Generals Sullivan, Kern, Wald and Zinni; Lieutenant General Farrell; Admirals Bowman, Lopez, Pilling and Prueher; and Vice Admirals Gaffney and Truly. All held senior command positions during my tenure as Environmental Security and I worked personally with each of them to integrate environmental security into the military mission.

You also know that these are not men given to emotional or fashionable arguments on issues of the day. They are sober, thoughtful, practical men. They also tend toward skepticism. In other words, if you're going to put together a cheering section, these gentlemen are not who you're looking for.

But if you want realistic analysis and assessment, and tested leadership, these are precisely the men you want. So, based on the fundamental principle that the military's ability to respond to national security threats is only as good as its ability to understand and plan for them, we formed the board not to endorse preconceived notions but to explore existing circumstances, look at future likelihoods, and assess their impact on our future security.

So, what did the MAB find? For one, that climate change was real. Even those who came in as skeptics, left with a belief in the scientific analyses that tell us our atmosphere is warming. In fact, one of the most fascinating aspects of the process was listening to members of the MAB discuss their own feelings on climate change, and express their own revelations.

Admiral Dick Truly's remarks are particularly embedded in my mind, as he was the only member of the Board who had actually floated in weightlessness, high above the Earth, and looked back to take-in the entire planet in one glance. Through his words, we all felt an understanding of the delicate nature of our planet and its atmosphere. And after hearing his thoughts – as well as those of the other MAB members and the men and women who provided detailed briefings to the board – we all had a clear sense that our planet is being steered down a very dangerous path.

In addition to finding that climate change was real; the MAB also found that, indeed, climate change poses very real threats to our national security. And that we are ill-prepared to deal with the potential challenges that confront us as a result of this unlikely enemy.

To touch briefly on some of the specifics of the MAB findings, the report identifies likely climate-change threats that will come in the form of extreme weather events: drought, flooding, sea level rise, retreating glaciers, shifting habitats, and the increased spread of life-threatening diseases – all of which have the potential to disrupt our way of life, and to force changes in the way we keep ourselves safe and secure.

The report also makes clear – and this is a very important insight – that the effects of climate change play out in complex ways and act as “threat multipliers” carrying the potential to result in multiple chronic conditions occurring globally at the same time.

In other words these threats don't pose tidy linear, cause-and-effect equations but present chaotic puzzles of cause setting off a cascade of effects which, in turn, impact one another and spark new effects.

In real-life terms, that means climate change will seriously exacerbate already marginal living standards in many Asian, African, and Middle Eastern nations where widespread political instability and failed states are already national security concerns.

Economic and environmental conditions in already fragile areas will further erode as food production declines, diseases increase, clean water becomes increasingly scarce and large populations move in search of resources. Weakened and failing governments, with an already thin margin for survival, will foster conditions conducive to internal conflicts, extremism, and movement toward increased authoritarianism and radical ideologies.

The MAB also found that the multiplied impact of these threats would not – as I think many believe – be confined to the regions just mentioned.

Climate change could cause the U.S. to be drawn more frequently into these situations, either alone or with allies, to help provide stability before conditions worsen and are exploited by extremists. The U.S. might also be called upon to undertake stability and reconstruction efforts once a conflict has begun, to avert further disaster.

Even in stable regions of the world, climate change will likely add to tensions as the U.S. and Europe face demands to accept large numbers of immigrants and refugees as drought increases and food production declines in Latin America and Africa.

And extreme weather events and natural disasters, like Hurricane Katrina, may lead to increased missions for a number of U.S. agencies, including state and local governments, the Department of Homeland Security, and our already stretched military, including Guard and Reserve forces.

Finally, the report found that climate change, national security, and energy dependence are a related set of global challenges.

Our dependence on fossil fuels leaves us more vulnerable to hostile regimes and terrorists, and clean domestic energy alternatives help us confront the serious challenge of global climate change. Because the issues are linked, solutions to one affect the other. Technologies that improve energy efficiency also reduce carbon intensity and carbon emissions.

I'm pleased to say that the report has had far-reaching impacts: moving Congress to ask Defense officials to include climate change considerations in their planning; raising public awareness; and spurring interest from nations around the globe in how to respond to the strategic threats posed by regional manifestations of global climate change, and inspiring SERDP to create project evaluating the sea level rise and ecological impacts on military installations.

It has also led us to consider the great challenge to national security posed by the last item I just mentioned: namely, how do we reduce the military's use of oil and cut the intensity and volume of carbon emissions in order to protect our strategic interests and ease the impact of climate change?

While the issue of oil dependence is one that affects our nation as whole, the DOD, as the world's number one consumer of energy, has an important role to play in redefining the nation's relationship to energy and providing the kind of strategic decision-making that can ripple across the rest of the economy.

Consider energy use on installations. The Department has made some remarkable achievements over the last several years, including constructing the continent's largest solar array at Nellis Air Force Base. And the Air Force is the third largest purchaser of green electricity in the country, behind only Intel and Pepsi. But there is still a long way to go to achieve a truly secure and reliable supply of energy to our bases.

To reach that goal – while continuing to ensure 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 the Department. The human and economic cost of delivering fuel to combat forces is significant. Energy efficient technologies, energy conservation practices and renewable energy sources can all reduce the cost, in American lives on the battlefield.

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

I cannot claim that as an original insight. 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 are issues that must be addressed and the conflict in Iraq has made them pointedly obvious, prompting General 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 go further, I want to stress the very important fact 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.

That is without dispute, and while the Department has a significant role to play in advancing sound energy policies, it has an unwavering obligation to ensure that it meets its primary missions of protecting our nation's national security interests.

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 what we call “energy-climate security.”

Increased efficiency and smarter energy use must also be a component of new weapons platforms, a point raised recently by General Cartwright, Vice Chairman of the JCS, who cited a Predator UAV as an example of an efficient, effective alternative to conventional fighter jets: it costs about a third of what a fighter costs, uses about a third of the fuel a fighter uses, requires no tankers for refueling, and can stay airborne for 20 hours instead of two.

It's a system that makes military sense and energy sense, and the more those types of alternative systems can be utilized where appropriate to the military mission, the better we will position ourselves for achieving greater energy-climate security.

Few challenges facing America – and the world – are more urgent than combating climate change. The science is beyond dispute and the facts are clear. Sea levels are rising. Coastlines are shrinking. We've seen record drought, spreading famine, and storms that are growing stronger with each passing hurricane season.

Climate change and our dependence on foreign oil, if left unaddressed, will continue to weaken our economy and threaten our national security.

Now is the time to confront this challenge once and for all. Delay is no longer an option. Denial is no longer an acceptable response. The stakes are too high. The consequences, too serious.

If that sounds a little more eloquent than the rest of my remarks, it's because those aren't my words. They're the words president-elect Barak Obama who has pledged that his presidency will, again in his words, "mark a new chapter in America's leadership on climate change that will strengthen our security and create millions of new jobs in the process."

He has called for investments of \$15 billion – each year – to spur private sector efforts in solar power, wind power, next generation biofuels, safe nuclear energy and, most importantly, efficiency, to create a clean energy future,

As I said at the outset, we have not always sailed under clear skies or in a straight line, and as we know, and as the president-elect concedes, resolving the issues of climate change and energy security will not occur overnight, or over a decade.

But they can be resolved.

The word of the moment is "Change." The election of Barack Obama will bring profound change across our nation. The current financial crisis is changing our economy. And our changing climate and the energy shocks of the past year mark the beginning of what will prove a transformative step away from a fossil-fuel based present and toward a clean-energy, low-carbon future.

The challenges are great, and DOD can, and must, help lead us to that future. For the sake of our children, our towns, our cities, and our nation, we must all envision a future in which the tail of oil no longer wags the tooth of our fighting forces; a future where we generate energy from sunlight that is 8 minutes old instead of from sunlight that shone on the Earth hundreds of millions of years ago; and a future in which we power our lives using sources that support our environment rather than destroy it.

Seventy years ago, my parents, as young kids, were faced with dire and uncertain circumstances – circumstances that many around the world hoped would just go away. But my family knew that they had to take action to ensure the security of their future, and in 1938, they escaped from the oppressive regime that governed Nazi Germany and found shelter here in the US.

They got out, but many didn't – including my great grandparents who perished in the Holocaust – and because of their courage, their tenacity, and their good fortune the actions my family took 70 years ago ensured the security of not only their future, but of mine, and my children.

I tell you that story to make the point that neither uncertainty, nor the size and scope of the challenges we face, must prevent us from taking action to protect ourselves against what is likely to be a dangerous future. And while we will not be able to prevent all negative consequences, we can, by acting now, ensure that our children and our children's children have a future that is worth fighting for.

Today we know, with reasonable confidence, that our future will bring more migration as people seek higher ground, search for potable water, and clamor for food. We know the future will bring more disasters and extreme storms.

But we also must realize that, together, we can act to mitigate the impact of climate change and, in turn, reduce the number of people that will lose their homes and livelihoods, and their families and communities to the ravages caused by an overheated atmosphere.

We can, together, act to give our countries and communities a more sustainable future. We can, together, act to provide a better world for our children and grandchildren. It won't be easy, and it won't be fast. But we can, together, create a better tomorrow.

Thank you.