U.S. Senate Committee on Environment and Public Works

Hearing on Promoting American Energy Security by Facilitating Investments in Climate Solutions
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Chairman Carper, Ranking Member Capito, distinguished Members of the Committee, thank you for your efforts to highlight and promote the importance of strengthening American energy security. Today, as has been the case for several weeks, the American public and the world are intently watching as the brave people of Ukraine fight for their nation, their families and their freedom against a brutal offensive by a tyrant and dictator.

The total motivations behind President Vladimir Putin's brutal and illegal invasion of Ukraine remain unclear, but nothing could be clearer than his power over Europe because of its dependence on his oil and gas. Major economies in the West need fossil fuels piped in from the East, so Putin has the leverage — and the money — to undermine the security and economic independence of our allies.

Putin believed that, because of its reliance on Russia's fossil fuels, Europe would not take any strong, united action against his unprovoked invasion of a democratic nation. The fact that this was a gross miscalculation by Putin doesn't negate that it was a calculation that helped start an unjust and horrific war.

The way to fight Putin, in the long run, is to shift the world economy away from the oil and gas that keeps him affluent, armed and arrogant. Whatever we do in the days ahead to support our European allies — and we should do everything we can — we must also move swiftly to end the world's addiction to fossil fuels.

The three issues that we are facing—depriving Putin of the power, leverage and money that the world's dependence on fossil fuels brings him, aggressively attacking climate change that is a huge national security issue, and becoming truly energy independent and not subject to big price spikes—are inextricably intertwined. Moving urgently to renewables is the answer to all three.

The price of oil and gas is set world-wide and, even if we imported no fossil fuels, we in America would still be incredibly vulnerable to price spikes. The one thing that drives up the price of oil is instability. The kind that's caused by an irrational war in the heart of Europe waged by an unstable leader. Instability can be driven by climate refugees, hurricanes, famine and drought. The kind that will be ever more common in a hotter, stormier world.

Much of the world's fossil fuels is produced and controlled by countries run by dictators. By continuing to use so much oil, we leave our economy and the pocketbooks of American families subject to the whims of these dictators. Only by pushing the world economy to renewable sources like wind, solar and agricultural biomass— which are controlled locally and essentially bulletproof from foreign manipulation — can we and all nations regain our economic sovereignty. Europe has begun to move in this direction: Many nations there are getting between one-quarter and one-third of their electricity today from renewables. But this change has to be speeded up since, as the invasion of Ukraine showed, we all are still far too vulnerable to dramatic swings in the price of fossil fuels.

America will not become truly energy independent until we end our dependence on fossil fuels.

The Ukrainian crisis is a painful reminder that energy security and climate change are national security issues. Because of my previous position as Secretary of the Navy from 2009-2017, and the unique perspective it gave me on energy and climate change as national security issues, the remainder of this written testimony will be devoted to that.

As Secretary, it quickly became very apparent that that overreliance on traditional energy sources was a national security vulnerability. That is why I moved the Navy and Marines off much of their use of fossil fuels as a warfighting measure.

Because of its tremendous size and the fact that it uses more fossil fuels than any organization on earth, the Pentagon can be a very big player in promoting energy independence. In 2009, as Secretary, I issued energy goals for the Navy and Marines, the largest of which was that, by no later than 2020, at least half of all Naval energy would come from renewable, non-fossil fuel sources. Today, two-thirds of the energy for our bases in the United States comes from these sources, mainly solar and wind. Coupled with microgrids, this meant that, even if the grid went down, our bases could still perform their military missions. As a bonus, moving to renewals on these bases saved $400 million. At sea, when I left office in 2017, approximately forty percent of naval energy came from renewables.

The Navy and Marines also aggressively sought out new technologies for new sources of energy and energy conservation. As a result of these and other measures, at the end of eight years, oil usage had declined sixteen percent in the Navy and sixty-two percent in the Marines. While these started as warfighting initiatives, with the increasing recognition of energy dependence and climate change as a threat to national security, they became ways for the Department of the Navy to fight climate change and regain energy independence.

The American military's attention to climate change is not a new undertaking. In the early 2000s, during the George W. Bush Administration, military experts and organizations began writing about and planning for the dangers of climate change to the military. The Quadrennial Defense Review (QDR) then was done after each Presidential election and looked to the threats the nation would face in the future. The 2010 QDR specifically called out climate change as one of the trends "whose complex interplay may spark or exacerbate future conflicts." The 2014

QDR was even more explicit: “The impacts of climate change may increase the frequency, scale and complexity of future missions, including defense support of civil authorities, while at the same time undermining the capacity of our domestic installations to support training activities.”

In 2017, the QDR was replaced with the National Defense Strategy (NDS). Shortly after taking office in January 2021, Secretary of Defense Lloyd Austin announced that the Pentagon will incorporate climate change into its future NDS saying: “There is little about what the Defense Department does to defend the American people that is not affected by climate change. It is a national security issue and we must treat it as such.”

The Ukraine crisis should be taken as an opportunity to eliminate our energy security vulnerabilities and remind Americans of the impacts of climate change on national security. While they are seized with pictures of a war-torn Ukraine, explaining the effects of climate change in a military context may get the needed attention they deserve.

CLIMATE CHANGE AS A MILITARY NATIONAL SECURITY ISSUE

Effects on bases: For Americans, the most visible manifestation of climate change to our military is on bases. As storms, flooding and wildfires become more powerful and occur more often due to the effects of climate change, the destruction inflicted on military bases is stunning in its scope and cost.

The examples are many and increasing. In September 2018, Hurricane Florence slammed the Marine Corps’ Camp Lejeune, North Carolina. Thirty-one buildings were destroyed or damaged beyond repair, seventy percent of homes on base were damaged, and the storm caused an 84,000-gallon sewage spill. The bill to repair just the buildings was $3.6 billion.

Scarcely a month later, Hurricane Michael struck Tyndall Air Force Base, Florida, with even wider destruction. Nearly every one of the base’s 500 buildings were damaged and 300 had to be torn down. Several F-22 fighters costing $140 million each were casualties and all 11,000 people connected to the base had to be evacuated. Getting Tyndall back to full operational level will cost somewhere in the vicinity of $5 billion and take years to do.

It’s not just hurricanes or places along the coast. In March 2019, Offutt Air Force Base, Nebraska, was inundated with floodwaters from two nearby rivers which submerged a third of the base including much of its runway, causing flight operations to be halted. The cost of repairing the base will almost certainly top $1 billion. Offutt is the headquarters of United States Strategic Command which oversees the nation’s nuclear arsenal.

There are more enduring problems than storms or isolated weather events. The largest Naval base in the world, Naval Station Norfolk, Virginia, and the shipyards which support it, are already being battered with increasing frequency by “king tides” – tides much higher than normal. The roads leading into the base are often flooded and made impassable so, if the Navy

needed to get the ships at Norfolk to sea in an emergency, it's possible that, even today, sailors could not reach their ships. If sea level rise is not arrested, the entire base will go under water in the next few decades. If a major storm hit the base today, projections say the entire area with the base and shipyards could be submerged.

Outside the continental United States, many American bases are threatened: Naval Support Facility Diego Garcia in the Indian Ocean and Army's Ronald Reagan Ballistic Missile Defense Test Site on Kwajalein in the Pacific by rising sea levels; Al Udeid Air Base in Qatar by extreme heat; and Cape Lisburne Long Range Radar, Alaska, by erosion.

In 2019, the Congressionally mandated "Report on Effects of a Changing Climate to the Department of Defense," found that two-thirds of the "mission assurance priority installations" of the American military were threatened by climate change. Even though this report was far from a complete survey (no Marine bases and only 79 of the hundreds of bases were included), its findings were stark and frightening.

Effects on disaster response/humanitarian assistance: Apart from bases, climate change has major implications and impacts on the American military. The United States Navy and Marine Corps are the world's first responders. As storms get more frequent and more intense; as floods get more frequent and more destructive; and as droughts get more frequent and more catastrophic, American Sailors and Marines are the tip of the response spear. During my tenure as Secretary of the Navy from 2009-2017, we got a request for humanitarian assistance or disaster relief an average of once every two weeks, and this trend is accelerating.

When Super Typhoon Haiyan hit the Philippines in 2013 killing more than 6,000, leaving 1.9 million homeless and spurring violence in places, Sailors and Marines were among the first to arrive bringing relief supplies, helping clear the devastation and assisting in restoring order. When Hurricane Matthew dealt a crushing blow to Haiti in 2016 killing nearly 600, displacing hundreds of thousands, causing a cholera epidemic, and destroying many food crops, Sailors and Marines responded with medical care, food assistance and many other forms of help.

Where there are these climate events of ever-increasing frequency and ferocity, instability often follows. Instability can lead to chaos and chaos to conflict. Prior to the Syrian Civil War, a diplomatic cable titled "Potential for Social Destruction and Political Instability" warned that drought could be the catalyst for this prediction.

These types of climate events strike every corner of the planet but Africa is particularly vulnerable. Extreme climate events ranging the spectrum from droughts to floods have all caused food and water shortages leading to social breakdowns, forced migration and recruiting by terrorist organizations. In early 2019, the United Nations magazine African Renewal said: "Climate change is already considered a threat multiplier, exacerbating existing problems, including conflicts." In March 2019, the most powerful cyclone in history in the southern

hemisphere, Cyclone Adai, struck Mozambique, Malawi and Zimbabwe. Soon after, a U.S. Air Force contingency response group arrived to distribute medical supplies, food and water.

These situations are not confined to areas outside the United States. When Hurricane Sandy struck the east coast of the United States, the American military responded in myriad ways. The 26th Marine Expeditionary Unit flew aboard the amphibious ship USS Wasp to provide medical, logistical, engineering, and heavy airlift support. Units from all service branches provided a dizzying array of help ranging from dewatering to fuel deliveries to millions of meals.

In a more permanent situation, there are already internal climate change refugees in the United States. Today, at least 17 communities, mostly Native American or Native Alaskan, are in the process of relocating for climate related reasons. Even if climate change is arrested in its tracks, it is estimated that 414 cities and towns will have to relocate. The only relocation program currently being run by the federal government is the moving of Isle de Jean Charles in Louisiana. Not a buyout program, this effort aims to move the 99 residents together to another location at a cost of $48 million. Even with this small number of people, it is a complex and daunting task.

As climate events intensify and are more frequent, all the U.S. armed forces, particularly the Navy and Marines, will be increasingly called on to respond and to be put in harm's way because of the conditions following the event or the resulting chaos or conflict. Answering the call of these cataclysmic events is a dangerous undertaking as is any mission into uncertain and unknowable conditions. The more often the military is tasked to provide humanitarian assistance and disaster relief, the more military lives are put at risk.

Effects on the Arctic: The Arctic is warming twice as fast as any other part of the Earth. With the ice melting all across the Arctic as a direct result of this much warmer planet, the area is quickly becoming a potential flashpoint. A summer ice-free Arctic opens up possibilities unimagined only a short time ago. Already the fabled Northwest Passage is being used and a previously unreachable treasure of minerals on and beneath the sea floor are becoming available.

I personally saw these effects when, in March 2016, I went to the north pole aboard the submarine USS HAMPTON. We had been warned that, if the ice was too thick, we might not be able to surface at exactly the pole. When we arrived 800 feet below the surface, radar showed a mile-wide area of thin ice around the pole. We came up through ice only eight inches thick and had to have someone with a long stick go ahead of where we walked to make sure the ice could handle even our weight. According to the civilian "ice pilot" who had done this many times, it was by far the thinnest the ice had ever been.

As new Arctic possibilities open up, the security and military implications increase as quickly. Cruise lines with little or no experience in the far north and no ships which are ice capable, are advertising cruises to "this magical land." It is not hard to imagine the international incident and probable tragedy if one of these cruise ships hit an iceberg and became disabled or

sank. The search and rescue options available come only from the military and are extremely limited. A case in point: the U.S. Coast Guard has only one more than forty-year-old icebreaker.

Exploring for the mineral riches of the Arctic also involves incredibly high risk. The harsh environment means that much standard equipment does not work and, for example, if there was an oil spill such as Deepwater Horizon in the Arctic, the difficulties in containing such a spill would be far greater than it was in the Gulf of Mexico (and it took several months in far closer and more hospitable conditions to stop that spill) and the damages would be exponentially larger.

In direct military terms, Russia has built or rebuilt almost 500 military facilities across the Arctic many with radars and weapons that work in extreme cold. The only possible explanation for these is, in Pentagon-speak, Anti-Access/Area Denial (AA/AD). Russia wants to be able to control which shipping passes through the Arctic. Because of the increasing traffic through these waters, if it shut down passage to only its ships or those of its allies, it could do great harm to the world's economy. It claims that the waters to its north are inland waterways and thereby subject to their exclusive control. Under international law, this is not the case but enforcing this international law is a different matter and may not be possible without a military solution.

Even accounting for the nations which border the Arctic (United States, Russia, Canada, Norway and Denmark—through control of Greenland), a nation far away—China—is making one of the largest plays in the Arctic. Through its "Polar Silk Road" China is investing billions (if not trillions) in energy and mineral projects and in setting goals for Arctic shipping routes. It has and is building icebreakers and is giving a great deal of attention to the region.

The United States' activity both in commercial and military terms has not been very significant. Every two years, the Navy runs ICEX, a multi-national military training exercise in the Arctic. The last several ICEX's have been truncated because the thinning ice could not support the base camp. The U.S. Navy put out an "Arctic Road Map" in 2009 which was updated in 2014 and 2019. Among the goals of this Road Map are to ensure the Arctic as a stable and conflict-free region and preserve freedom of the seas. Because of the immense and fast-moving alterations to the Arctic due to climate change and the potential for isolated clashes or open conflict, these goals will add increasing burdens to our military in the near term and will have to be part of America's national security discussions and policy.

Climate change acts as a threat multiplier and alters the military operating environment impacting our security, our safety, our economy and our ability to remain a global leader. It is an issue which must be at the very top of our national security concerns.

CONCLUSION

Moving us away from fossil fuels and toward clean energy is exactly what's needed to protect our national security and regain our energy independence. The same is true for the entire

world. We should see the Ukrainian crisis as an terrible reminder why we need to move much faster on these linked issues.

Climate change is a national security issue. Our dependence on fossil fuels is a national security issue. Moving toward clean energy and away from fossil fuels will move us toward a more stable, healthier, safer world.