

Remarks by the Honorable Ray Mabus  
Secretary of the Navy  
Center for National Policy  
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Dr. Steve Flynn, thank you and thank you all for having me here. I'm going to talk about the Great Green Fleet - the move in the Navy and the Marine Corps to move towards alternative sources of energy. And first I want to thank you for all the great work that you do here; the thought that you put into it, the long-range strategic vision and the implementation part that has been the hallmark of CNP. Thank you so much for helping make jobs like mine a lot easier.

The Navy, in particular, has always led in changing forms of energy. In the 1850s, the age of sail, the Navy moved from sail to coal. The naysayers at the time said, you're trading a very known and certain source of energy for one that may not be so good. But particularly during our Civil War, it proved itself, particularly at the Battle of Hampton Roads, that this was the future. It made our fleet more agile, it made it more maneuverable, it made it a better fleet.

Early in the 20<sup>th</sup> century, the Navy Liquid Fuel Board, which may sort of have given away its purpose by its name, recommended moving from coal to oil. And once again, the Alfred Thayer Mahan Navy that had grown up with seapower, control of the seas, argued against moving towards oil because of our vast network, worldwide network of coaling stations. But again, it made us better fighters; it made our fleet more maneuverable. It cut us loose from those same coaling stations and it meant you didn't have to have scores of stokers 24 hours a day shoveling coal into open fires on our ships.

In the 1950s, the Navy went to nuclear power, particularly for our submarines and our aircraft carriers. Our carriers can now spend years without refueling making them much more adaptable, much more agile. And our subs can stay underwater indefinitely and can give that persistent presence which is so often needed.

We are a better Navy and a better Marine Corps for these innovations. And every time, as I said, there have been people who said, well you're trading one form of energy for another - it's too costly, it's too iffy. And every time they've been wrong. And I think that they're going to be wrong this time too.

We are moving towards alternative fuels in the Navy and the Marine Corps for one main reason, and that is to make us better fighters. Strategically we have got to break the dependence on foreign sources of fossil fuels. We would not let countries that deliver our energy today build our warships, we would not let them build our weapon systems, we would not let them be responsible for our defense and yet we're willing to let them power those same warships, those same airplanes, those same weapon systems. So strategically there's a compelling case to be made for changing the way we get and the way we use energy. Tactically you can make the same case, every time you cut a ship away from an oiler, every time you produce the energy where you are you've made us better war fighters.

Take the example of getting a gallon of gasoline to a Marine frontline unit in Marjah. You've got to put that gallon of gasoline – and by the way, the two things that are important in Afghanistan for our fighting forces more than anything else are fuel and water – but you have to put that gallon of gasoline on a ship, you've got to get it across

the Pacific, then you put it in a truck, you've got to guard it, you've got to take it up over the Hindu Kush and then down into Marjah.

Convoy duty is one of the most dangerous things that Marines do today and Sailors do today. We lose Marines and Sailors on convoy duty, and we take Marines away from doing what Marines ought to be doing which is fighting or engaging or rebuilding. If we do two things - one is we learn to make the energy there and second is we become more efficient in the way we use energy - we have made those Marines better fighters. And we're doing that by things like, we have water purification systems now in Afghanistan that are solar powered. It does two things: number one, it alleviates the need to bring in the fuel and number two, it makes pure water right there alleviating the need to bring in bottled water.

And we're being more efficient by simple things like spray-on insulation on Marine tents. The Marines down in Quantico have a model forward operating base devoted to the uses of alternative energy.

The other reason, and there are a lot, for moving the Navy and the Marine Corps towards a greener and different energy use is that we are such a huge customer, we create such a big demand. The Department of Defense uses more than 90 percent of the energy that the federal government uses. The federal government uses 2 percent of all the energy that America uses. The Navy and the Marine Corps use more than a third of the energy that the Department of Defense uses. So if you flip the line from *Field of Dreams*, if the Navy comes, they will build it. If the Navy creates a demand, it will begin to overcome the obstacles that always face entrepreneurs, innovators and new industries – the cost and the infrastructure.

We're beginning to do that in a lot of ways. One is we have a 50,000 fleet of non-combat vehicles; they turn over about every five years. Simply by changing what we're buying - by buying more electric vehicles, more hybrid, more flex fuel vehicles - we're going to cut the amount of fossil fuel use in that fleet in half in the next five years. The Navy has 4.4 million acres of land, 72,500 buildings, and even though we defend a democracy, in truth we [Department of the Navy] are not one. We can mandate how buildings are built, we can mandate what fuels are used and we can make some of the early investments that may not be economically viable for the private sector to make because our demand is so certain and so large.

One of the things that I don't want to have happen, I don't want to trade dependence on foreign oil for dependence on foreign alternative fuels. I don't want to be buying our solar panels from somewhere else, I don't want to be buying our biofuels from somewhere else, I don't want to be buying the technology for geothermal, or hydrothermal or wind from somewhere else. But if we don't begin to make some of these investments, if we don't begin to change the way we produce and use energy, that's exactly what is going to happen. And that is as a strategic a problem as the dependence on foreign fossil fuels is today.

We set out five goals for the Navy, the biggest one is that by the year 2020 half of all naval energy whether afloat or ashore will come from non-fossil fuel sources.

I told you about the vehicles. By 2016 we're going to deploy the Great Green Fleet which will be a carrier strike group that uses no fossil fuels.

And we've made some significant progress in the last six months towards getting to this Great Green Fleet. Number one, we flew the F/A-18 Hornet at Pax River on a

mixture of aviation gasoline and biofuel. Biofuel made from camelina. Camelina, which I didn't know at the time, is a member of the mustard family, it is an inedible seed and it can be grown in rotation with wheat and other crops, it can be grown in all 50 states of this union. This airplane that has gone mach 1.2, 1.2 times the speed of sound, on this camelina didn't know the difference in the fuel. We call it the Green Hornet. Now, those of you who are old enough remember the original Green Hornet. The rest of you, go Google it. You'll understand why we call it that.

We've launched the Navy's first hybrid ship, the *Makin Island*, a big-deck amphib, a really big ship that has two drives – one a more conventional, gas turbine drive and the other an electric drive. We use the electric drive at speeds of under 10 knots. The very first voyage of this ship from Pascagoula, Mississippi where it was built, around South America to San Diego where it was going to be homeported, it saved almost \$2 million dollars in fuel costs just by doing this. Over the lifetime of that ship – if fuel prices do not increase – you're going to see a savings of about a quarter billion dollars in fuel for this one ship. Now multiply that by the nearly 300 ships of the Navy.

We are going to have our first test of biofuel on a surface vessel this summer and we are prototyping an electric drive for Aegis DDGs, our new DDGs that we're building – guided missile destroyers – and for the ones already in the fleet, to go back and retrofit them.

We've got a lot of help; we've got a lot of partners. I was with the Secretary of Agriculture, Tom Vilsack, this morning at another event. We've signed a Memorandum of Understanding to work together on biofuel because we can not only help the Navy and

helping our national defense and helping our energy security, we can help American farmers. We can help American farmers begin to move into a new economy.

The first thing we've done is in Hawaii, because Hawaii is the most dependent state on imported oil and the farmers there are having difficulty with the migration of sugar cane out of Hawaii, is to begin to get them to grow biofuels that the state Hawaii can use and that the Navy installations and Marine Corps installations on Hawaii can use.

We've been working with Secretary Chu at the Department of Energy to make sure that our research and development efforts are coordinated, with Administrator Karen Mills at the Small Business Administration to make sure that the entrepreneurs at the new businesses are taken account of and are helped in this whole process and we started working with bigger companies with our energy goals.

One of the five goals is we said, we're going to look at the people who build our ships, that build our weapon systems, that build the things that we buy. We're going to look at how they design those ships and those weapon systems and those aircraft in terms of total life costs and in terms of how much energy they're using and the kind of energy they use. But we're also going to look at their energy footprint. These companies' energy footprint are going to be one of the ways that we evaluate them.

We've just announced our Preferred Provider Program which is going to reward those companies that are consistently good in acquisition. We're going to give them better payment terms; we're going to give them more favorable contract terms. These are some of the things that we're doing.

The Navy has always had pride in innovation. The Navy has always been an early adapter and always been on the cutting edge of technology. The American Navy

created the world's first submarine. We figured out how to launch a ballistic missile and hit another ballistic missile - hit a bullet with a bullet. We have the tools, we have the power, we have the skills and we have the science, and most importantly we have the people who are not only able to do it, but who are eager to do it because they understand that being so dependent on sources of energy that are volatile, that are uncertain, that have the ability to be taken away from us or to have the price raised dramatically is not a good way for us to do our national defense.

I know that you're working on some things on climate change. One of the side effects of all this is we're going to be greener, we're going to be better for the environment. And that's a good thing; we should be better stewards of this. But it's also in our best interest because as you look forward at the roles of the Navy, one of things that you have to pay attention to is the potential for civic unrest in the littoral areas, the areas along the coast, as climate change exacerbates economic problems, exacerbates agricultural problems, exacerbates some of the things that make these countries a risk. And if you have that, the Navy and the Marine Corps are going to be your first responders. So it's in our best interest, number one, to make sure that we pay attention to climate change and to do something about it ourselves, and number two to begin to work with these countries doing things like the African Partnership Station and the Pacific Partnership and South American Partnership where we go in and we train people, we do some of the things like medical and dental and veterinary services, we rebuild schools and hospitals and we interact with the local community. Very often the only Americans that people will ever see are Sailors and Marines, and they are the face of America,

they're our best ambassadors. You can surge people, you can surge equipment, you can not surge trust.

And along the lines of energy, this is not something that is just a nice thing to do, this is an absolute must. This is not an issue of feeling better, this is an issue of being better fighters, this is an issue of national security, this is an issue of energy independence for our military and it's something that the Navy is leading in and is going to continue to lead in.

Thank you all very much.