

**Remarks for ASD Burke – DOE Biomass Conference
11 July 2012**

Thank you, Kevin, for that introduction, and to all my colleagues at the Department of Energy – both for the invitation to join you here today and for all you do to advance the energy security of the nation every day.

As Kevin noted, I'm the Assistant Secretary of Defense for Operational Energy, which is a relatively new position at DOD. Energy security, however, is not a new concern for the Department.

There's a story about a young naval officer who was part of a lessons learned study in Japan right at the end of WWII. One of his interview subjects was a frail old man, digging potatoes in his garden – he turned out to be none other than the former Commander of the Japanese Imperial Fleet.

“What happened?” The American officer asked him, simply.

“We ran out of oil,” was the answer.

Ships moved too slowly into battle, islands went undefended at sea, and ultimately the Navy was stilled -- all by the lack of fuel, according to the former Commander. Successful American blockades of supply lines left the Japanese desperately brewing fuel from potatoes, old tires, rice – a Japanese spokesman said at one point that “two hundred pine roots will keep an airplane in the sky for one hour.”

Years later the American officer noted that the lesson he learned in those interviews was never to lose a war, and that “The way to lose a war is to run out of oil.”

The military importance of energy supplies is certainly a part of the nation's past -- and it's also the reason we at DoD believe biofuels need to be part of our future.

So today, I want to talk to you about the overall context – what DoD is doing today to promote military energy security and why; and then what role we believe biofuels can play in the defense mission. Finally, I just want to offer some thoughts about the broader, national context – how it looks from the defense point of view.

To give you some idea of scope, the Department of Defense is the single largest consumer of energy in the nation. Last year, our energy bills totaled almost \$20B. At the same time, we accounted for less than 1% of all domestic energy use. So, as a trusted

institution and significant consumer of fuel, DOD can play a leadership role when it comes to energy security, but the other 99% of the nation will have to do its part, too.

About 75% of the energy the Department of Defense uses is operational – which is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations. That is what I am responsible for – policy, guidance, and oversight of the Department’s operational energy.

The vast majority of DoD’s operational energy is liquid fuel, mostly in the form of jet fuel and marine diesel fuel. In Afghanistan today, it’s all about jet fuel – about 1.6 million gallons a day. Jet fuel is running our generators to power lights, cool tents, and recharge batteries and equipment. Jet fuel is in aircraft that are dropping supplies or striking targets, and jet fuel is in our combat vehicles. At the same time, all over the world, marine diesel fuel powers many of our ships in various operations. And back at home, when we fly these planes, sail these ships, or drive these vehicles for training, it’s the same fuel.

Now, back in WWII, energy was both a target and a critical asset in combat – and it’s certainly still true today. In our operations in Iraq and Afghanistan, getting fuel to the troops has, at times had a high cost – in lives and dollars. What’s different today is that we’re in what the military calls distributed, asymmetric operations – we’re not facing another like military force from behind our own front lines, but rather a range of adversaries across a wide area, with missions as varied as combat and civil affairs. This means the supply lines are fully in the fight.

The other difference is that we use a great deal more fuel – so the supply lines are also a very big target.

Secretary Panetta recently released a new strategic vision for the Department, which refocuses on the Asia Pacific region, but the energy concerns we’ve seen in current operations are enduring: we’re going to have a global force, ready for a range of missions – from humanitarian relief to conventional combat. It’s going to take a great deal of energy to project and sustain that force, and that’s going to mean a big supply line.

So the top energy security priority for the Department is to improve our energy performance – to get more military output for the energy input. 90% of the \$1.4 billion the Department will invest in operational energy improvements in Fiscal Year 2013 will go toward these sorts of energy efficiency and performance gains. This includes a number of improvements my office has been instrumental in getting into the hands of forces in current operations – from centralized power, to solar hybrid generation, to

improved shelters and generators. We've had great partners in the military Services for these efforts.

So that's our goal – to create a more agile, lethal, adaptable, and effective combat force, while also reducing the risks and costs for military missions. There are many good reasons to promote energy security and good energy policy – but that's our reason. To make sure our forces have the energy they need to protect the nation.

And that is the same reason DoD is interested in biofuels – for the military benefits, for improved reliability of our supply lines, and for the potential strategic gains.

DoD has a long history of being a powerful force for innovation – especially when those innovations have a direct military benefit. Indeed, the closer you are to a military capability or mission, the higher our value proposition can be. And we do have some near-term investments in alternative fuels to enhance our tactical military capability. For example, hydrogen-powered unmanned aerial vehicles have the potential to achieve much longer mission durations than those powered by traditional petroleum-based products. And the Department is interested in technologies that can generate fuel or energy at tactical locations, including waste-to-energy, which could have significant operational benefits. There are possibilities for bioenergy in this space, too.

Most of our energy consumption, however, is in liquid mobility fuels, and the fact is that the Department of Defense is going to have ships, planes, and vehicles designed to use petroleum fuels for a long time to come. So my office has taken a close look at the possibilities for new, potentially sustainable and reliable sources of the liquid fuel we need to accomplish the defense mission.

We are looking for fuels that are compatible with existing equipment and storage infrastructure, exploring where and how alternative fuel will be available and affordable to our forces. A cost-competitive alternative fuels market could provide important reliability gains, as well as flexibility against future supply disruptions and price volatility. The Department must be well-positioned to leverage these advantages. The question then becomes, how do we get from where we are today, to that mature market?

The work the Department has done thus far is encouraging. There are certainly complexities, from the basic science challenges to the uncertain path from theory to tank. But the Army, Navy, Air Force, and Marines have recognized the vulnerability of our singular dependence on petroleum by taking a first step toward diversification: they are all certifying aircraft, ships, tactical vehicles, and support equipment to use alternative liquid fuels.

This certification activity represents a relatively small but important investment in drop-in alternative fuels – less than a percent, actually closer to half a percent – of what the Department spent on petroleum fuels last year. This is something of an insurance policy for us – because this investment ensures that our equipment can operate on a wide range of fuels, it is important to ensuring our military readiness over the long term.

We're also leveraging the Departments of Energy and Agriculture, with their portfolio of investments in the research, development, and commercialization of alternative fuels and their expertise when it comes to addressing the cost and scalability of these fuels. In fact, just last week, DoD, working with DOE and USDA, announced a Funding Opportunity for the Defense Production Act Advanced Drop-In Biofuel Project, and it is being carefully executed through a rigorous review process.

Finally, we recognize that this nascent industry also needs to know what the military is looking for. Each Military Service has different roles to play and missions to meet, so there are going to be legitimate differences in investments and outlays, but there's a set of common principles that can help guide our interactions with outside stakeholders when it comes to alternative fuels.

That's why I am pleased to announce that just last week, my office released a DoD-wide alternative fuels policy for operational platforms, which we developed in coordination with the Military Services and other relevant defense offices. This is primarily for the purpose of guiding DOD consumers of these fuels, but it is available on our website at [energy dot defense dot gov](http://energy.dot.defense.dot.gov).

Just a few highlights: the policy articulates the defense interest in alternative fuels, which is “to ensure operational military readiness, improve battlespace effectiveness, and further flexibility of military operations through the ability to use multiple, reliable fuel sources.”

It goes on to establish clear guidelines for future investments in alternative fuels for operational platforms in three main components: testing and certification activities, field demonstrations, and bulk purchases to meet operational requirements, beyond certification and demonstration activities. Importantly, the policy formalizes what is already the practice for all the military services, and that is that any bulk purchases of alternative drop-in replacement fuel have to be cost competitive with petroleum products.

With this policy in place, I have every confidence that the Department will continue to steward its alternative fuels investments wisely as we ensure the long-term readiness and

capability of our joint force. And, while it's no secret that DoD's budget is tightening, we will still need the ability to use alternative fuels, just as the nation will still need to develop these fuels.

And let me say a few words about the defense view on the nation's need to develop alternative energy.

I think we all breathe a sigh of relief every time oil prices come down or the lights come back on – but that complacency costs us. The new domestic oil and gas finds are going to play an important part in our economic recovery, but they won't save us from everything. They won't save us from the vagaries of the global oil markets. They won't save us from global climate change or the hard realities of supply and demand – and the fact that places like Iran threaten international peace on the strength of their oil and gas revenues.

Energy security is about international stability and prosperity – it is fundamentally about national security, and that, in turn, is what the defense mission is all about.

That is where Secretary Mabus, the Secretary of the Navy, has made a particularly important contribution, in helping us all understand what is at stake and why the Navy and the Department need to act now.

It's also where there's been some controversy. I'm not going to dwell on that right now, except to say that the Department opposes any legislation that has the potential to constrain our ability to organize, train, equip, and deploy military force or prepare for the future. And look, I think it's an unnecessary argument. The fact is that there's a strong bipartisan consensus that the nation needs to improve its energy security, that domestic energy sources are essential, and that the military also needs to improve its energy security. That's exactly why Congress directed the Department to establish my office in the first place.

And there's a high degree of consensus that domestic renewable fuels have the potential to play a very important role in our future energy security.

Now, there are certainly a lot of questions being asked -- when will biofuels trump petroleum, in terms of price and availability? Well, that's tough to answer, and you're going to see some debate on that question.

But it's not the right question.

There will come a day when there will not be enough petroleum in the global market to meet global demand – whether that day comes because of “above ground” complications – governments that are unwilling or unable to get product where it’s needed, when it’s needed – or because petroleum becomes harder to get out of the ground or because climate change leaves us no choice – the day will come. So the right question is: will we be ready? Will we have viable alternatives? Right now, global demand is 89 million barrels EVERY DAY, so this is not something we’re going to be able to invent on the fly, like a dot com millionaire.

Today, we have to keep investing in the legacy energy economy, because our prosperity, global prosperity depends on it. But we also have to keep our eyes on the horizon – and that means a stable investment stream. Because we will not have the energy we need if we don’t make our investments now and hold to them.

That’s what the Commander in Chief’s “all of the above” energy strategy means. And that’s why we have a robust, whole-of-government investment in bioenergy.

What “all of the above” means for the Department of Defense is that we will have the energy we need to protect the American people.

So I urge you to remember that’s ultimately what is at stake for DoD, when we talk about energy security. We have a vested interest in the nation’s energy security, to be sure, but our primary responsibility is to enable the soldiers – the sailors – the Airmen – the Marines – the individuals who have volunteered to protect the country. What they do is very difficult and very important, and doing business with them is not like doing business with anyone else. You need to consider that: we have unique requirements and a very important mission. We do it well, but we are always looking to do it better, not just for today, but for decades into the future.

I sincerely believe that alternative fuels will be an important part of that future, and I thank you all for the work you are doing to take us to that horizon line.