

Energy Bulletin

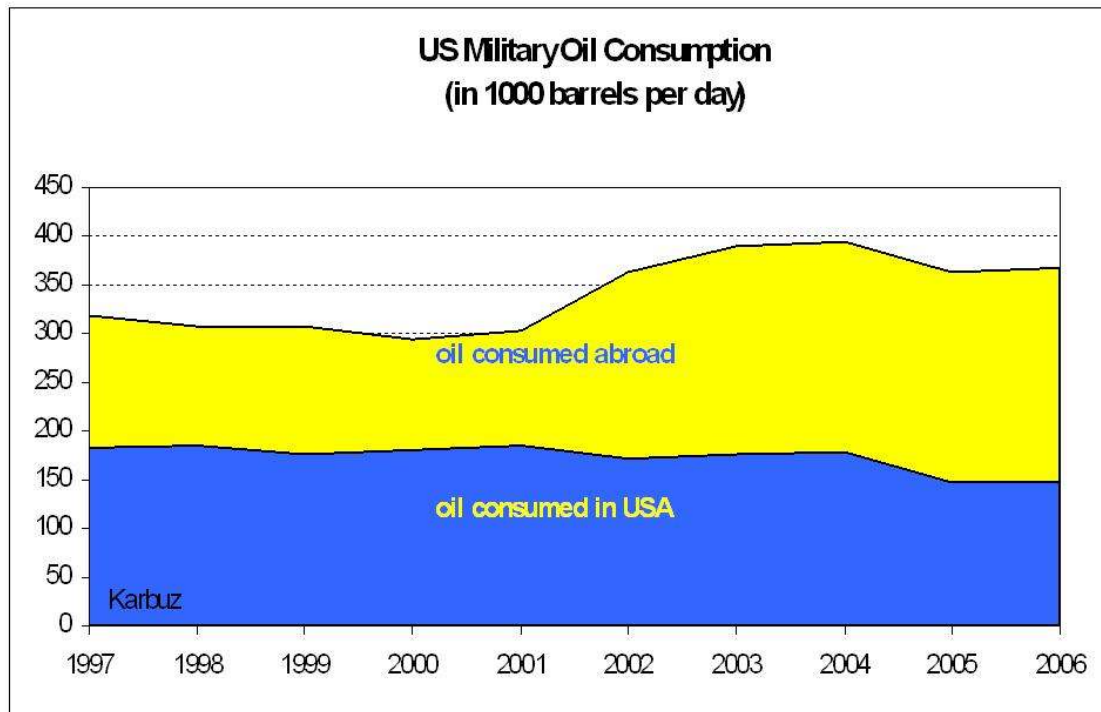
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Can the military go green?

By Sohbet Karbuz

The Pentagon runs on oil. Since the so-called Global War on Terror has started more than half of US military oil consumption has been occurring outside continental US.

Increasing US military oil consumption and its associated cost (\$17 billion in Fiscal Year 2006) eventually has attracted a long deserved attention.



A Wall Street Journal article¹ in January 2007, a section called "[Oil and the Military](#)" on Senator Dick Lugar's website, [2nd Annual Military Energy Alternatives](#) conference in February 2007, Air Force Energy Industry Forum² in March 2007, cold-weather test of synfuel blend in B-52 engines, and energy conservation and efficiency efforts of Air Force Space Command are some of the important ones that focus on Pentagon's addiction to energy in general and oil in particular.

Meanwhile, on February 27, 2007 the US Senate Committee on Finance held a meeting about "[America's Energy Future: Bold Ideas, Practical Solutions](#)." One of the witnesses was Michael A. Aimone, Assistant Deputy Chief of Staff for Logistics, Installations and Mission Support, U.S. Air Force. His written [Statement](#), entitled "Air Force Energy Strategy for the 21st Century", outlined recent achievements to improve USAF energy use.³

However, it is not only the US military that is worried about the energy future. For instance, Chinese [Armed Forces Ordered to Cut Costs, Reduce Energy Use](#) and Canadian [Military goes green in bid to cut fuel costs](#).

Can militaries the world over go green? Yes, in facilities and buildings. And No, not in platforms (war machines). Instead of wishful thinking we should face the bitter realities.

It is oil that runs about 11,000 US military aircrafts and helicopters, 200 combat and support ships, nearly 200,000 tracked and wheeled vehicles and 187,000 fleet vehicles (passenger cars, busses etc). The budget documents and high official's announcements show that the Pentagon will buy in the next 20 years as much war machines as it currently has (mainly to replace the old ones). Guess what, except maybe for some ground vehicles all the news ones will also run on oil.

Those war machines burn oil such intense rates that their oil consumption is mostly talked in "gallons per mile" and "gallons per minute" instead of "miles per gallon."

For instance, F-15 fighter burns 26 gallons per minute, B-52 bomber burns 55 gallons per minute, aerial refueling tankers burn over 35 gallons per minute, and C-5 Galaxy transporter burns 58 gallons per minute. An Abrams tank takes only 0.5 miles per gallon. Note that burn rates increase due to the age and the environmental conditions.

By the way, did I mention that thousands of other military equipment (such as generators) and some types of UAVs and missiles also run on oil?

The Air Force is the largest oil consumer. And it is not possible to convert existing flying gas stations into flying alternative consumers in the near future. But, the Air Force Budget 2008 stated that the Air Force has a goal of fulfilling 50% of its aviation fuel requirements in continental USA from a synthetic fuel blend by 2016.

During a recent [Statement](#) Michael A. Aimone, Assistant Deputy Chief of Staff for Logistics, Installations and Mission Support, USAF, said that "We recognize that Gas-to-Liquids do not assure the Air Force a dependable supply of jet fuel, since domestic natural gas production is insufficient to meet the Nation's needs. The production of SynFuel from coal, oil shale and biomass sources would solve this constraint; however, there are considerable technical, environmental, and economic issues that remain to be worked out."

Now some math: if you want to fill a B-52 with conventional JP-8 it costs around \$100,000, try with synfuel blend (50% conventional JP-8 and 50% synthetic fuel derived from natural gas) it costs \$300,000. Now, the question: how much would it cost to fill it with oil shale blend, assume oil shale is available in commercial quantities?

The US Air Force Logistics Agency's AEF Fuel Management Pocket Guide has a logo on the back cover reminding us: "Without Fuel Pilots Are Pedestrians."

The next time when President Bush wants to spread democracy and liberation, I guess he will make two phone calls: one to Pentagon for sending the bombers and the other to the US Mint for printing money. But in February President Bush made a back up decision – establishing a new command for Africa (USAFRICOM).

The US and British Navy have plans to go electric in the long long future, much later than Peak Oil hit them.

Army and Marines are considering hybrid, electric and biofuel solutions for their tactical vehicles. But they are over optimistic for the logistics chain issues in deployed war zone.

So, can the military go green? Yes, if they are not involved in any war.

¹ Masood Farivar, "Military Seeks Oil Savings," The Wall Street Journal, January 9, 2007. The article is behind a firewall but you can [read it on Skybuilt's site](#).

² It is a pity that Daniel Yergin is given floor in plenary session while Roscoe Bartlett at breakfast session (at 7:00 am).

³ See [Comments on Testimony by Michael Aimone](#) on my blog.

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