

Advanced Biofuels USA, a nonprofit educational organization, advocates for the adoption of advanced biofuels as an energy security, economic development, military flexibility and climate change solution.



Advanced Biofuels, Climate Change and National Security

By Robert Kozak

The direct relationship between Climate Change effects and National Security was recently summarized in testimony at a Congressional hearing:

*Competition and scarcity involving natural resources—food, water, minerals, and energy—are growing security threats. Many countries important to the United States **are vulnerable to natural resource shocks that degrade economic development**, frustrate attempts to democratize, raise the risk of regime-threatening instability, and aggravate regional tensions. Extreme weather events (floods, droughts, heat waves) will increasingly disrupt food and energy markets, exacerbating state weakness, forcing human migrations, and triggering riots, civil disobedience, and vandalism.*

*Food security has been aggravated partly because **the world's land masses are being affected by weather conditions outside of historical norms**, including more frequent and extreme floods, droughts, wildfires, tornadoes, coastal high water, and heat waves. Rising temperature, for example, although enhanced in the Arctic, is not solely a high-latitude phenomenon. **Recent scientific work shows that temperature anomalies during growing seasons and persistent droughts have hampered agricultural productivity and extended wildfire seasons.** Persistent droughts during the past decade have also diminished flows in the Nile, Tigris-Euphrates, Niger, Amazon, and Mekong river basins.*

While one might assume this was presented by an environmental scientist, it wasn't.

This analysis was presented on March 12, 2013 before the Senate Select Committee on Intelligence by **James R. Clapper, the Director of National Intelligence**, as part of the annual Worldwide Threat Assessment of the US Intelligence Community.

The fact that the US intelligence community considers Climate Change mitigation a National Security priority clearly shows that the scientific evidence of human produced Climate Change events is not considered "false science" by the people we have trusted to protect the country.

Leading the charge in the National Security effort is the US Navy's renewable fuel "**Great Green Fleet**" program. The key reasons renewable fuels were selected as a weapon in this fight were: 1) Renewable fuels could be used without changes to the planes or ships; and 2) Renewable fuels do not require imported expensive minerals to function as battery electric systems do.

General Clapper in his 12 March 2013 testimony described the national security of building systems that rely on such minerals:

*Rare earth elements (REE) are essential to civilian and military technologies and to the 21st century global economy, including development of green technologies and advanced defense systems. **China holds a commanding monopoly over world REE supplies, controlling about 95 percent of mined production and refining.***

*China's dominance and policies on pricing and exports are leading **other countries to pursue mitigation strategies, but those strategies probably will have only limited impact within the next five years and will almost certainly not end Chinese REE dominance.** REE prices spiked after China enacted a 40-percent export quota cut in July 2010, peaking at record highs in mid-2011. **As of December 2012, REE prices had receded but still remained at least 80 percent, and as much as 600 percent (depending on the type of REE), above pre-July 2010 levels.***

What You Can Do...

In light of this analysis, Advanced Biofuels USA strongly urges all Americans to tell their elected officials that advanced, non-food renewable fuels are good for National Security and good for fighting Climate Change.

Here are some specific initiatives to recommend:

- **Adopt EPA Tier 3 “high octane/high ethanol” regular fuel** so new high-efficiency cars and trucks can meet the 54.5 mpg 2022 fuel economy standard.
- **Start a decade-long Apollo type science and engineering program** to produce over 60% of our transportation fuel from non-food biomass.
- **Fund the Apollo and related renewable energy R&D with a dedicated, self-reducing non-renewable carbon user fee.** At \$20 ton/carbon, or .05\$/gallon for petroleum fuel, approximately \$3.8 billion/year would be generated. As the proportion of renewable fuel increased, the user fee would drop in concert with the R&D project reaching a successful completion.

Advanced Biofuels USA agrees that Climate Change is a National Security priority.

For our government to ignore Climate Change or not address it with an all-out sustainable renewable fuel effort is a grave dereliction of duty.