



**USAF Energy Forum III:
“Energy as an Operations Enabler”**

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General Norty Schwartz

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Introduction

Good morning, ladies and gentlemen. Mr. Yonkers, thank you for that kind introduction, and for your leadership in this vital mission area. I'd also like to thank Ms. Conaton for hosting this event, and for her leadership and personal efforts in helping to transform our culture toward one that embraces “Energy as an Operations Enabler.” General Hoffman and General Johns, it is good to be with you again. Thank you for attending.

I sincerely appreciate the opportunity to spend some time with this remarkable group of professionals, and trust that you have had a productive two days. It is my privilege to close this forum, and my hope that we can move forward aggressively with a number of your actionable ideas.

Ladies and gentlemen, we cannot overstate the criticality of every Airman's embracing energy as “a consideration in all that we do.” This is a long-term imperative that carries near-term urgency. I support the vision as outlined in our Energy Plan 2010, and applaud the efforts of dedicated professionals, like those in this room, toward achieving our goals, and making greater energy efficiency and conservation a reality for our current and future Air Force.

But, the frank, free, and open exchange of ideas at this forum is only a beginning. This is necessarily a long-term commitment that will require sustained dedication and effort, and which extends far into the next generation of Airmen—far outlasting any of our tenures. And, all the while, this effort will demand creativity, innovation, and close collaboration throughout the entire national security community comprising the federal government, academia, and industry. Only with a systematic approach, determined leadership, and firm commitment from all of us, will we be able to drive workable solutions. In the time that I have today, I hope to add to the discussion by sharing a few thoughts on energy assurance and security and their nexus with global stability and our national security.



The Energy–National Security Nexus

The current strategic environment in all of its aspects—political, legal, military, economic, financial, social, environmental, and others—features unprecedented complexity, ambiguity, and nuance, and tenuous stability. Particularly, in the area of natural resources, the environment, and energy, our international relationships are often paradoxically marked by unexpected tension with strategic partners and unforeseen convergence with rivals.

As the report on the Quadrennial Defense Review concludes, there is a very real, very present connection between our dependence on energy—namely, oil—and our national security. Some of the world’s oil producers and other *rentier* states are, unfortunately, our rivals and perhaps even our adversaries. A recent study from the Strategic Studies Institute examined the defense spending of five oil-producing states, and their receipts from oil revenues. Its findings illustrated some stark realities. Among them is a negative correlation between defense expenditures and oil revenue receipts, in which defense spending increased as oil revenues decreased.

Intuitively, one might expect that decreased earnings from oil—a major, if not primary, financier of military spending in *rentier* economies—would likely lead to smaller defense expenditures. But, in the instances where there were expected reductions in defense spending as a result of worldwide economic downturns, the decreased defense expenditures were only temporary. There are many reasons for, and implications from, this counterintuitive result. The important point, for our purposes, is that, with the oil-producing nations that are in fact our rivals or adversaries, or are potential aggressors, we are effectively helping to finance their defense expenditures through our dependence on their oil reserves. Even more insidiously, the relative weight of these particular weapons arsenals actually increases, considering that the United States and allied oil-dependent nations may limit or reduce their own defense spending.

This suggests, among other things, that we must find ways to lessen our dependence on foreign sources of oil, and thus the degree to which we essentially help to bankroll defense spending by our adversaries and potential aggressors. Of course, not all oil exporters are our adversaries; many, in fact, are valuable partners



of the United States. But, for those with which our national interests diverge, our dependence on oil effectively helps to enhance their current and future military capability, both intrinsically and relative to our own, even in the midst of global economic stress and decreases in oil revenue receipts.

Toward Making Energy “A Consideration in All We Do”

The point is that our strategic environment, with all of its interconnectedness, must be examined broadly, and its challenges addressed holistically. In terms of Air Force energy, then, our efforts are no longer the exclusive purview of logisticians, engineers, and energy specialists. All Airmen—in operations, maintenance, and mission support; from the flight line to the hangar to the military personnel flight—must further realize the critical link between energy and our ability to continue making critical contributions to the Joint team. Toward a future of more fuel-efficient systems, our acquisitions professionals, planners, programmers, and strategists will play a central role. We all must share a sense of urgency, particularly in light of continued flattening budgets, decreasing purchasing power, and rising costs in operations, maintenance, sustainment, personnel, and yes, energy. Together, we must inculcate energy efficiency and conservation as part and parcel of our *modus operandi*, integrated in all aspects of our Air Force mission—on the installations side *and* the aviation side.

Since we are talking about a culture change—an attitudinal and behavioral shift that will take root and develop only over time—the foundation for this normative change must be laid now. Currently, on our installations, there are many things that we are doing to conserve energy, like reducing facility energy consumption, increasing facility alternative and renewable energy resources, and decreasing ground vehicle fuel consumption. Although facilities and vehicle and ground equipment combine for a total of only 16% of total Air Force energy utilization, I am encouraged by this smaller-scale, but nonetheless significant, progress on our installations.

However, with our current aviation systems and operations, the trade space is often very narrow, with limited room for balancing efficiency with mission effectiveness, and even less so with flight safety. Although we are, in a manner of



speaking, somewhat hamstrung due to current technological and systems limitations, we still must be focused on fostering a culture that is conscientious about making the right decisions regarding energy efficiency and conservation.

This is true especially as we make decisions on modernization and recapitalization. Upgrading our legacy systems with more energy-efficient engines, for example, can move us toward greater ability to conserve aviation energy. And, where modernizing is no longer cost-efficient, our recapitalization and acquisition efforts should focus on future systems that are designed and developed to be more energy-efficient, and also capable of facilitating operations that are efficient without unacceptable sacrifices in stealth, range, lethality, or overall effectiveness and safety.

Moving forward, we need to inculcate the notion of energy efficiency as a strategic imperative—a realization that this is a matter fundamental to our effectiveness as an Air Force. The cost of inaction can severely hamper our mission. Therefore, energy goals must be linked to, and articulated in terms of, operational effectiveness and capability.

To do this, however, we need stronger analytical tools and more robust operations research to discern and evaluate the meaningful data. For example, the price of fuel or other materiel alone is really of limited utility, when, to get a truly accurate cost reading, the analysis must include expenditures of getting materiel to where we need it—through the entire supply chain, “from tail to tooth.” Only with sufficient and relevant data can we determine the exact requirements for greater energy efficiency and conservation, and be properly informed toward our future investments, operations, and sustainment.

As a starting point toward data reliability and analytical soundness, our Airmen in operations research, for example, could undertake serious efforts to apply a rigorous approach toward real-world possibilities in energy efficiency. I am aware of at least one renowned operations research program—at the Naval Postgraduate School—where this effort could be further advanced, and where some of our Airmen can help to establish an analytical foundation for the Air Force to measure, in meaningful terms, its mission effectiveness in relation to cost effectiveness. Another



institution is our own Air Force Institute of Technology, which also offers advanced degrees in operations research; or, the United States Air Force Academy, which offers interdisciplinary baccalaureate degrees in this vital discipline.

Whatever the location, our Airmen have an opportunity to help target our most important energy efficiency and conservation investments. The Airmen at NPS, by the way, would be in good company with one of the school's most distinguished alumni. You probably have heard of him: Admiral Mike Mullen, the Chairman of the Joint Chiefs of Staff, and a 1985 graduate of the school's operations research Master's Degree program.

Conclusion

Finally, I would add that not only should the Air Force not try to tackle these important energy issues alone; it *cannot* solve these problems without help, because energy issues challenge our entire country, as well as our partners in the global community. We have a ready-made convergence here, of many organizations and individuals, in the U.S. Government and around the world, that share the same energy predicaments, and are able, willing, and in fact eager to collaborate toward novel solutions.

For the Air Force's part, we must embrace:

- the notion that energy efficiency is not a stand-alone priority because it binds together and enables every dimension of our mission; and
- the idea that energy efficiency affords us greater resiliency, which translates to greater capability and versatility.

Energy efficiency and conservation must be instilled in every Airman's daily efforts and integrated into every aspect of our mission.

I appreciate that the needs I just mentioned perhaps are not novel. To some, in fact, they might be well-known. But, the imperative to do better is so apparent; it is simply compelling. So, I hope that the words have more than passing impact here today.

I certainly appreciate the opportunity to share some perspectives with you, and I look forward to continued collaboration and partnership, and to bold and determined leadership, as we inspire and engage our sharpest, most creative minds



on one of the most substantial challenges that we face as the largest consumer of hydrocarbons on the planet. As Airmen, as partners in common cause, and as a Nation, we must move forward together, and pick up the pace now—together. Thank you.