



U.S. Air Force to Quadruple Solar Generation, Build 61 Megawatts of Wind Power by 2014

SUGAR LAND--February 23, 2011--Written by John Egan for Industrial Info Resources (Sugar Land, Texas)--The U.S. military spends about \$24 billion each year for fuel and energy, and all of the armed services are operating under a Pentagon directive to increase the use of renewable energy 25% by 2025. One service, the Air Force, has committed to quadrupling its use of solar energy on its bases within four years.

"The Air Force is looking to dramatically increase its on-base solar and wind energy over the next few years," said Kevin Geiss, the Air Force Deputy Assistant Secretary for Energy, last month at the third annual Solar CEO Conference at the State University of New York (SUNY) at New Paltz. "Energy is a thread that runs through every single mission we have. It is a force multiplier. Reducing energy consumption saves lives."

About 84% of the Air Force's annual energy bill goes to aviation fuel, while 12% is spent at facilities and the remaining 4% on vehicles and equipment, Geiss said. "Investigating renewable and alternative energy helps our warfighters and increases our operational capabilities."

Geiss said that the Air Force is following a three-part strategy to lower its U.S. energy consumption: reduce demand, increase supply and change the culture. "Achieving a firm, energy-secure posture is key to all the missions we have. We're also continually trying to change that culture and work on the mindset of our airmen to get them to consider (how they use energy) in everything they do."

The Air Force is currently the federal government's largest purchaser of renewable energy, which accounted for about 6% of all Air Force energy consumption in fiscal year

2009 (which ended Sept. 30, 2009), Geiss told conference attendees. The Air Force has 54 on-base solar projects operating today, and it plans to build another 12 during the next few years. He added that the Air Force also will be developing 61 megawatts (MW) of new wind energy during the next four years.

Geiss said that during the 2011-2014 period, the service plans to construct 10 major solar projects at its U.S. installations, including:

Luke Air Force Base in Glendale, Arizona, which is home to the 56th Fighter Wing

Nellis Air Force Base in Las Vegas, Nevada, which is home to the 99th Air Base Wing

Davis-Monthan Air Force base in Tucson, Arizona, which is home to the 355th Wing
Desert Lightning

The Air Force has a goal of reducing its aviation fuel consumption 10% off its 2006 baseline, chiefly by increasing its use of alternate fuel. Geiss said progress was being made in certifying a synthetic aviation fuel blend early in 2011. The service further wants to reduce the energy intensity of its bases 3% annually, chiefly by implementing efficiency programs and constructing on-base renewable electric generation. As part of that electricity initiative, the service is investigating the use of microgrid technology to determine its security, reliability and cost effectiveness, Geiss noted. Finally the Air Force is seeking to lower motor vehicle fuel use 2% per year, in large part by increasing the use of alternate fuel 10% per year.

Since 2008, the Air Force has lowered its use of petroleum 4.7% (about 1.1 million gallons) and increased its use of alternative fuels 31% (about 408,000 gallons), the Air Force deputy assistant secretary told the attendees.

While the Air Force's expansion of renewable energy at its U.S. bases is targeted at reducing the military's overall energy bill, it also is an attempt to protect U.S. armed forces personnel in war zones. Retired Army Brig. Gen. Steven Anderson estimated that 1,000 Americans have been killed on fuel-related missions in Iraq and Afghanistan during the last nine years, U.S. Rep. Maurice Hinchey (D) told the solar conference. The soldiers were killed while transporting generators or fuel to resupply troops. There was

no estimate of how many casualties were inflicted on soldiers transporting generators or fuel in those wars.

"No one organization is more familiar with or impacted by the challenges and opportunities in the field of energy than the Department of Defense," Hinchey said. "There is an important role for solar energy in solving this problem."

The military typically awards large tracts of land to engineering, procurement and construction firms like CH2M HILL (Denver, Colorado), Fluor Corporation (NYSE:FLR) (Irving, Texas) or Bechtel (San Francisco, California), who then subcontract with smaller companies to provide equipment and services necessary to design and build renewable energy installations. Paul Bollinger, general manager of Boeing Energy, said increasing the use of renewable energy at military bases will mean billions of dollars of business opportunities for large and small companies. There will be opportunities for "minnows as well as whales," he said.

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