



## AF Renewable Energy Symposium brings congressional staffers, senior AF leaders and industry reps to AMARG

Nearly 280 renewable energy experts from industry and across the Department of Defense toured the 355th Fighter Wing and 309 AMARG at Davis-Monthan Air Force Base as part of the Air Force's two-day Renewable Energy Symposium held in Tucson last week.

Dr. Gavi Begtrup, policy advisor for Congresswoman Gabrielle Giffords, and Mr. Scott Sklar, author and founder of The Stella Group, Ltd., invited to speak at the symposium, also toured AMARG.

Marking only the second time the Air Force and industry have convened to discuss productive and affordable methods of renewable energy on Air Force installations, 309 AMARG volunteered to co-host the event with the 355th Fighter Wing at Davis-Monthan to showcase initiatives that "operationalize" renewable and alternative energy solutions.

In a remote aircraft maintenance area of AMARG, symposium participants viewed a unique blend of alternative energy technologies designed for both efficiency and pollution reduction.

Despite the temperature peaking at 112 degrees during the tour, an air bearing micro turbine generator performed impressively and produced 50 kilowatts of electrical power, replacing six pieces of diesel-powered aerospace ground equipment (two air conditioners, two air compressors, and two generators).

According to Maj. Andy Middione, an AMARG individual mobilization augmentee (IMA), assigned to promote alternative energy efforts here, the turbine generator utilizes propane, an alternative fuel, which reduces diesel emissions in this particular work area of AMARG by 75 percent.

A portable office building, coated on all sides with a four-shaped thermal ceramic paint, was a cool respite for some attendees, as the product is certified to reflect 95 percent of the sun's rays. This natural cooling technique also boosts the life expectancy of a structure's cooling system as the result of less use.

Portable, energy-efficient indirect evaporative coolers, using water instead of dichlorodifluoromethane (Freon) to provide cool dry air conditioning, and

touted as safe for use during aircraft maintenance, seemed to be a comfortable gathering place for many in attendance.

"These coolers use only 750 watts of power to provide air conditioning with 90 percent less electrical power requirement than air conditioners and do not use chlorofluorocarbon (CFC) compounds which reduces hazardous material use in compliance with Federal mandates," said Major Middione, briefing the event's attendees. "AMARG mechanics can use these units to stay cool while they work inside aircraft fuel tanks and other confined spaces during the hot summer months," he added.

Supporting the Air Force's Energy Plan to increase mileage and use alternative fuels in vehicles, several large vehicles, including a front end loader, were on display to demonstrate the simplicity of a self-contained hydrogen dry cell generator installation on a fuel system.

According to Major Middione, these hydrogen generators supplement six percent of the engine's fuel requirements using only 10 amps of power and the high-quality hydrogen injected into the engine's air intake provides more complete combustion resulting in 20 percent better mileage and reduced emissions.

Major Middione expects to incorporate a blend of the displayed and other alternative energy technologies into the design of AMARG's new maintenance hangar scheduled for a fall construction start.

Both Col. Patrick Kumashiro, the 309 AMARG commander and Major Middione agree that AMARG is well on its way to achieving its goal to reduce fossil fuel use and increase energy efficiencies, and with the 355th Fighter Wing at Davis-Monthan expected to be the DoD's largest producer of photovoltaic energy in both residential and industrial operations production, it was definitely fitting for both the Wing and AMARG to play a role in this renewable energy event.

The symposium was sponsored by the Secretary of the Air Force Office for Energy, the Office of the Air Force Civil Engineer and the Air Force Civil Engineer Support Agency.



Mr. Paul Stewart of Schneider Electric (l) and Mr. Fox Theriault, an energy analyst from Air Force Space Command, discuss the alternative energy technologies on display at 309 AMARG as part of the Air Force's Renewable Energy Symposium held last week in Tucson, Ariz.



A hydrogen generator (green box situated in battery compartment) was installed on this front end loader to reduce both fuel consumption and emissions.

## High-flyin' WB-57 departs AMARG, joins two others operated by NASA

Operated by the Air Force as an atmospheric sampling and radiation detection aircraft until the mid-1970s, and for years prominently displayed for the public tour program, this meticulously disassembled WB-57 departed in May for restoration in Colorado.

The National Aeronautics and Space Administration (NASA) currently operates the only two WB-57s still flying out of Ellington Field in Houston and this aircraft, serial number 63-13295, will soon join their ranks.

According to a program representative, this aircraft, will be redesignated as NASA 927 once fully restored, which should take approximately 18 months. The aircraft will then be flown from Colorado to Texas.

With a 122.5 wing span, the WB-57 is a long-range aircraft capable of operation for extended periods of time from sea level to altitudes well in excess of 60,000 feet.

To put the impressive length of the WB-57's wings in perspective, the Wright Brothers' first flight was a distance of 120 feet.

Labeled as NASA 926 and 928, the two operational high altitude research aircraft are utilized to support a variety of missions.

Impressively employing a pallet system in the main fuselage area, these WB-57s can be "accessorized" with interchangeable pressurized and unpressurized pallet modules weighing as much as 5,000 lbs.



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## Civil Air Patrol cadets tour 309 AMARG's aircraft production areas

To beat June's afternoon temperatures, 127 Civil Air Patrol (CAP) cadets embarked on an early morning "boots-on-the-ground" tour through AMARG's aircraft production areas.

AMARG presentations included informative briefings on the F-4 Full-Scale Aerial Target or drone program (as well as a closer look inside the cockpit of a regenerated "Phantom II"); the C-130 programmed depot maintenance project; and, the A-10 Service Life Extension Program and modification line.

A C-5 aircraft, parked conveniently on AMARG's process out ramp for engine removals, offered shade, as well as an opportunity for the cadets to personally examine the enormous capacity of a "Galaxy's" cargo bay.

Last stop for the cadets, a rare opportunity to gaze into the weapons bay of a B-52G.



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