

ARNG Energy Conservation Initiatives

What is it? The Army National Guard (ARNG) operates approximately 2,600 readiness centers. Many of these facilities are old: the average age is 42 years and many (approximately one out of four) are more than 70 years old. The ARNG has recently taken up the challenge to renovate the older facilities and make them energy efficient. Also, when the ARNG builds a new facility, the goal is to use innovative and sustainable building strategies.

What has the Army done? Recent environmental (green) accomplishments include energy saving initiatives along with the reduction of hazardous waste:

- The Arizona Guard is using the earth's natural insulation to heat and cool their 5,200 square-foot ECO-building. The building is burrowed into the ground within walls of recycled tires filled with compacted earth. The building also has an atrium that is designed to provide abundant natural light. The roof has cisterns that collect precious rain water – runoff that is as welcome as it is rare in the state's desert climate. On the grounds the facility has an array of 18-kilowatt photovoltaic wind turbines. The state has a central energy control system that controls the indoor climate of the ECO building as well as many other public buildings across the state.
- The Michigan Guard revamped their re-painting facility to use non-toxic paints and paint-stripping processes. They switched from a solvent-based paint to a water-based paint and shifted from a hazardous working environment to one that is virtually pollution free for the environment and for the workers. They also shifted from a toxic paint stripping process to a water-based solution using high-pressure water jets. By filtering and regenerating waste water (and eliminating the solvents), they reduced waste from 100 to 150 pounds per vehicle to about 2 to 3 pounds per vehicle.
- The Colorado Guard has a new Army Aviation Support Facility that was constructed primarily from recycled and locally-made materials. In addition, the facility is lighted almost entirely (over 90%) by sunlight during day time operations. The facility uses roof runoff to irrigate drought-resistant plants and makes use of waterless urinals. The facility also has a unique modular design that accommodates a full-time staff of 70 and “expands” to handle the drill weekend staff of 350 Soldiers.
- The Hawaii Guard has taken an interagency approach breaking ground with a new facility they will share with the U.S. Army Reserve and the Hawaii Office of Veterans Services. This facility will make use of photovoltaic panels to help reduce energy usage and costs.
- The New Mexico Guard is building a 30-module 54-kilowatt photovoltaic solar farm. This solar project will not only reduce the amount of electricity bought from the service provider but will also reduce the amount of green house gases generated by the consumption.
- The New Jersey Guard recently completed a 170-kilowatt photovoltaic car port. This car port takes underutilized space to provide shelter for parked vehicles and generates electricity for some of the Sea Girt training site facilities. The renewable energy produced will reduce approximately 165 tons of green house gas emissions annually.

Why is this important to the Army? With the national debt above \$13 trillion and with the nation consuming about 85% of all energy from fossil fuel sources, the shifting of Army energy consumption to renewable sources is financially and environmentally wise. The ARNG continues to leverage various funding sources such as MILCON (military construction) funding to implement energy saving initiatives, but a recurring paradox is that it takes a significant investment in installations in order to conserve energy and yield financial payback.

What continued efforts does the Army have planned for the future? Many old readiness centers have been demolished and many have been converted to other establishments; a few are scheduled for preservation, restoration, or reuse. As Readiness Centers are renovated and replaced, the Army is committed to building and rebuilding newer more energy efficient structures that are renovated with energy saving enhancements.