

HOMELAND SECURITY COMMITTEE
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AND GLOBAL COUNTERTERRORISM
REPUBLICAN LEADER

Congress of the United States
House of Representatives
Washington, DC 20515

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June 11, 2009

Ike Skelton
Chairman
House Armed Services Committee
2120 Rayburn House Office Building
Washington, D.C. 20515

Howard P. "Buck" McKeon
Ranking Member
House Armed Services Committee
2340 Rayburn House Office Building
Washington, DC 20515

Dear Chairman and Ranking Member:

According to the U.S. EPA's Energy Star Program, Geothermal Heat Pumps (GHPs) are among the most efficient and comfortable heating and cooling technologies currently available. GHPs can reduce energy consumption for building use—and corresponding emissions—over 40 percent compared to air-source heat pumps and over 70 percent compared to electric resistance heating, with standard air-conditioning equipment. I believe GHPs can help the Department of Defense save money and reduce carbon emissions.

GHPs circulate a working fluid (typically water or water/antifreeze mix) through pipes buried underground to utilize the relatively constant earth temperature as a thermal energy source to heat buildings, or as a thermal energy sink to cool buildings, displacing some of the need for electricity and the need for natural gas or other fossil fuels. This clean, sustainable technology is a simple, grass roots way to reduce the ever growing power grid requirements without sacrificing comfort or practical use.

According to a December 2008 report published by Oak Ridge National Laboratory (managed by the Department of Energy):

- *Aggressive deployment of GHPs could achieve 35 to 40 percent of a recommended carbon reduction path for the U.S building sector.*
- *"... future policies should ensure that GHPs are not excluded from renewable portfolio standards and goals and related environmental initiatives."*

GHPs are the only renewable that improves the viability of all other renewables. Adding GHPs to a renewable project will reduce the typical wind power or solar power demand sizing requirement by 30-50 percent, thus reducing the total capital investment required and reduce the long-term energy consumption of the project.

Hundreds of thousands of these systems are installed across North America with thousands of systems installed in dozens of military projects nationwide including-- Little Rock AFB, Whiteman AFB, Air Force Academy, Whiting Field, Pensacola NAS, Oceana NAS, Beaufort MCAS, Fort Irwin, Fort Bliss, Anniston Army Depot and Fort Polk.

The Fort Polk installation resulted in over 4,000 family housing units retrofitted with GHPs, occupying over 5 million square feet. An independent evaluation has shown that a typical year nets savings of over 32 percent in electricity and a peak electrical demand reduction of over 6.5 mW, while natural gas savings average 260,000 therms per year. The net annual value of energy and maintenance savings is \$3,000,000.

The Oceana NAS installation covered 15 buildings with a simple payback generation of fewer than 10 years. Annual system savings was projected at \$750,000. The diversity of this project clearly defines the case for GHPs in multiple applications. The project covered a number of installation types including; office space, officer's quarters, classrooms, maintenance facilities, training facilities, storage facilities and communication structures.

GHPs have a tremendous flexibility when paired with other renewables or conventional HVAC components and make a substantial impact in lower power usage, lower utility peak demand and lower overall carbon emissions.

While the DoD has started to utilize GHPs, I believe they can go even further in making their facilities more efficient. GHPs are the obvious choice for new building construction or retrofit of existing structures and conventional heating and cooling systems. As you consider the 2010 Defense Authorization bill and the energy needs of the U.S. military, I ask that you incorporate this technology by encouraging the Secretary of the Army, Navy, and Airforce to incorporate GHPs into their facility management programs..

Thank you for your consideration and I look forward to working with you to incorporate this important technology in the U.S. military.

Respectfully,



Mark Souder
Member of Congress