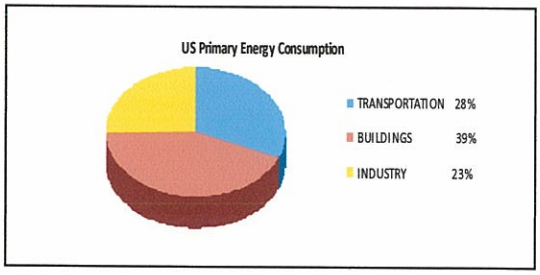
Comments on the New York State 2013 Energy Plan

NYS Energy Overview

- Conventional sources are unsustainable
- Costs continue to increase
- Conventional sources impact the environment
- ***Buildings consume a lot of it (+/- 40%)!***



ORNL Report to DOE 12/08 (following from the report's Executive Summary)
"Geothermal heat pumps (GHPs), sometimes called ground-source heat pumps, have been proven capable of producing large reductions in energy use and peak demand in buildings.

If the federal government set a goal for the U.S. buildings sector to use no more nonrenewable primary energy in 2030 than it did in 2008, based on previous analyses (Updated and summarized in this report), it is estimated that 35 to 40 percent of this goal, or a savings of 3.4 to 3.9 quads annually, could be achieved through aggressive deployment of GHPs.

GHPs could also avoid the need to build 91 to 105 GW of electricity generation capacity, or 42 to 48 percent of the 218 GW of net new capacity additions projected to be needed nationwide by 2030. In addition, $33 to 38 billion annually in reduced utility bills (at 2006 rates) could be achieved through aggressive deployment of GHPs.

However, GHPs have received little attention at the policy level as an important component of a national strategy. Have policymakers mistakenly overlooked GHPs, or are GHPs simply unable to make a major contribution to the national goals for various reasons? This brief study was undertaken at DOE's request to address this conundrum...."[1]

ORNL Report's results - Residential (Replacement, Retrofit, New Construction) 5.5 to 7.0 Million HVAC units sold in the US annually Residential (Replacement, Retrofit, New Construction) or about 5% of housing supply. As a result of the ORNL report and other considerations, the DOE is now tasking its teams with facilitating the deployment of ***1,000,000 geothermal heat pumps per year by 2016*** – as compared to the current roughly 100,000 units sold in 2010.

GeoEnergy Enterprises, a NYS company, new, hybrid Geothermal HVAC system, developed with the aid of LIPA and NYSERDA, reduces the cost and complexity of "going geothermal" attaining these goals.[2]

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[1] *Full ORNL report available on request*

[2] *See geothermal HVAC & GeoColumn HVAC system overview which follows as Appendix A*

Programs such as the recently (last week) unveiled Power Saver Loan (5% to 7% for 20 year loans of up to $25K) are a step in the right direction but fall short of required goals to change face of US and NYS power supply. We all know the benefits of on or off grid solar PV. What we need is an effective CHP partner for solar PV to create an effective and economical CHP system. We believe that geothermal or ground source HVAC to be that partner.

Typical Solar/Geothermal Combined Heat and Power Projection

For example a typical 1,500 square foot NY suburban home costs approximately $4,000.00 to 4,500.00 (average of $355.00/mo.) per year for energy required to heat, cool and provide hot water for the home in 2010 dollars. To take this home off grid would require a 5Kw solar PV system and a 3-ton GeoEnergy HVAC system. Both of these products qualify for a 30% Energy Star rebate against the installed costs of the system.

Combined Solar Geo Retrofit **ProForma** **5 kw/3-ton HVAC**	
5 KW PV system, installed	$30,000.00
3-ton geothermal HVAC, installed *	$20,000.00
Total cost	**$50,000.00**
30% tax credit (goes in homeowner pocket or to loan shortfall	**$15,000.00**
*cost for GEE GeoColumn HVAC system	
20 year loan @ 5.5% interest/per month	$344.00
20 year loan @ 5.5% interest/per year	$4,128.00

Advantages:

- Retro fitted buildings can be considered to be green and "off grid";
- NO emissions incurred in retrofitted buildings;
- Locks in building owner/operator fuel operating costs for 20 years;
- "Free Power" to owner/operator after 20 year payback;
- Puts cash in building owner's pocket *now* for incidental costs, loan shortfall or other uses);
- Creates NYS green jobs in green manufacturing, sales, installation and maintenance (5% NYS homes retrofitted/yr = ***$20B/yr in new green revenue***);
- Puts funds that would go to off shore energy sources back into NYS economy (potential for 8,000,000 NYS housing units X $4250.00 = ***$34 billion/year back in building owner/operator's pockets)***.

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