

April 6, 2011

Ann Bailey
Director, ENERGY STAR Product Labeling
U.S. Environmental Protection Agency

Dear Ms. Bailey,

We have recently reviewed the EPA's proposed pilot program for recognition of ENERGY STAR Top Tier Products. As a manufacturer of geothermal heat pumps we are highly vested in the ENERGY STAR program and respectfully submit the following comments with regard to the proposed Top Tier Products program. We appreciate the opportunity to view this proposal and the opportunity to provide feedback.

- 1) We are concerned that the ENERGY STAR Top Tier program could morph itself into the new ENERGY STAR and choose a very small, select number of Geothermal Heat Pumps, negating the fact that Geothermal Heat Pumps in general are significantly more efficient than oil, gas, and electric systems, and that the technology is considered renewable by the DOE. This lumping of non-renewables with renewables would seem to be a contradiction of directions. Only a small percentage of both renewable and non-renewable technologies would be recognized. Top Tier status would put renewable energy technologies on par with less efficient, non-renewable technologies. Geothermal Heat Pumps represent the only renewable technology (at the residential level) that is under the domain of the ENERGY STAR proposed Top Tier program. Wind, Photo Voltaic, and solar collector technologies are not.
- 2) ENERGY STAR's overall objective is for "highly efficient products." The proposal provided indicates a limitation based on size of system; "... the recognition criteria may be established at where extra large products or those with energy intensive configurations are unable to achieve recognition..." In practice, and especially with Geothermal Heat Pumps, optimal performance can only be achieved when systems are properly sized for the property they will serve.

The DOE has defined single phase, Geothermal Heat Pumps up to 135,000 BTU as applicable for the ENERGY STAR program. If recognition of "highly efficient products" is the goal, why differentiate between sizes? For Geothermal Heat Pumps, the ENERGY STAR Tier 3 requirement has no discrimination amongst sizes and an equivalent COP/EER is no more or less efficient as a result of the system size. Because qualification is performance driven, there is no reason to eliminate units because of size.

- 3) "Central AC, air source heat pumps and Geothermal Heat Pumps must be enabled to communicate digitally with an appropriate thermostat or other control, with the ability to send commissioning information, such as model number, and diagnostic information."

The requirement for communication is very broad and non-definitive. Enabling communication with a thermostat would indicate presenting information to an end user / homeowner.

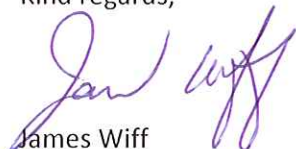
Diagnostic and commissioning information would be suitable for a service technician. Because of the proximity of a typical thermostat to the Geothermal Heat Pump or Air Conditioner, having the thermostat display any type of diagnostic information would be counter-productive for a service technician and information displayed there would be only for very basic fault conditions. The definition of diagnostic and commissioning information needs further definition.

- 4) There has been movement to "regionalize" SEER to account for differences in usage conditions for Central AC units. Geothermal Heat Pumps, per ISO-13256-1/-2 are tested more at the boundary conditions with no discrimination as to actual usage, yielding COPs and EERs that may not be reflective of the true installed efficiency. Additionally, loop field configuration and size, installation practices of the heat pump and installation of the heat pump into existing ducting and utilities can have a significant impact on overall efficiency of the unit – a constraint not shared by other products in the ENERGY STAR program. Is there a need to regionalize performance criteria for Geothermal Heat Pumps? Realistically, it may be very tough to do because of the application of the Geothermal Heat Pumps in the actual installations. Regionalizing for the AC equipment has the advantage of higher realized performance based on area of application. With this recognition, efficiencies can continually be pushed higher and incented by ENERGY STAR programs like Top Tier. Geothermal Heat Pumps, however, are very installation dependent for overall efficiency and continued pushing for greater efficiencies will place undue burden on an industry that is significantly smaller numbers than other products proposed for implementation of the Top Tier program.

In summary, there seems to be competing interests with the Top Tier program. The Geothermal Heat Pump technology is the only renewable product included and it is lumped in with non-renewable products. There is no recognition that it is superior in efficiency to non-renewable products. The Geothermal Heat Pump market volume is fractional when compared to the volume of domestic goods (e.g. TVs) or to competing HVAC technologies (e.g. gas, oil, electric). Manufacturers of Geothermal Heat Pumps have already gone through two performance level increases in the last 18 months and will go through another one in the next 9 months. Continued increases to performance levels require correspondingly higher investments. Continued push in heavy investment for ever-increasing performance standards favors only the largest of the manufacturers and in the end reduces the competitiveness of the marketplace.

Again, we thank you for the opportunity to review and comment on the proposed Top Tier program. Should you wish to discuss these comments further, please feel free to contact me directly.

Kind regards,

A handwritten signature in purple ink, appearing to read "James Wiff".

James Wiff
Director of Engineering
GeoSystems, LLC.

Office: (763) 582-1444

E-mail: jwiff@geosystemsghp.com