Illustration of Energy Cost Savings - Heating

Nothing replaces an accurate heat loss/cooling gain calculation, based on an appropriate methodology, for accurately estimating space conditioning costs and comparative savings. This bulletin is not a substitute for those kinds of calculations, rather a simple illustration of possible GeoExchange savings.

The blue line on the chart at the right shows where the cost of natural gas and the cost of electricity are equal. This relationship is made possible by the efficiency of the GeoExchange system.

For example, $0.50 per therm natural gas is equal to 6.5¢ electricity when a Geothermal Heat Pump is used for space conditioning.

 Assume 800 therms of natural gas were used to heat a building for the previous heating season and the average cost per therm was $1.00. The cost of electricity was 6.5¢ per kilowatt-hour.

What is the savings if a GeoExchange system had provided for space heating?

$1.00 per therm is equal to 13.0¢ electricity
6.5¢ actual cost per kilowatt-hour ÷ 13.0¢ equivalent cost = 50% savings
800 therms X $1.00 per therm X 50% = $400 savings

Make your own calculation:

________ per therm is equal to _________¢ electricity

________¢ actual cost per kilowatt-hour ÷ _______¢ = _______% savings

________ therms X ______ per therm X _______% = ______ savings
The chart below provides an estimate of GeoExchange savings for space heating a house or small commercial structure.

The blue line connects natural gas costs per therm with electricity costs per kilowatt-hour. Where the blue line crosses the red line, the savings per square foot can be read. Multiplying this number by the square footage of the building will yield the annual space heating savings for GeoExchange.

For example:
$1.00 per therm, 6.5¢ per kilowatt-hour = $0.24 savings per square foot.
2400 square foot house X $0.24 savings = $576 annual space heating savings.

Make your own calculation:
_______ sq. ft. X _______ savings = _______ annual space heating savings.

If you have further questions on this GeoTech Bulletin please contact us toll-free

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