



Budding...business has already taken substantial steps toward sustainable business practices and is currently in progressive “sustainable motion”.



## GREEN REPORT CARD



### **Key Goes Green with Efficiency, Conservation and Geothermal:**

While operating in the traditional fossil-fuel based HVAC world, Key has shifted its focus to maximizing the efficiency of any system it repairs or installs. Key owner and founder, Jon Sherrill describes his approach to energy management as, “What can I save for BTU’s today?” An aggressive education campaign pushes individuals to increase the efficiency of their existing heating or cooling system or to invest in cutting edge geothermal technology that can take them off the grid entirely. In business since 1989, Key made a conscious choice 5 years ago to turn toward greener HVAC systems. Their “greenness” is derived from showing the customer that efficiency and geothermal reap financial savings AND happen to be good for the environment too. This has “normalized” efficiency and renewable systems that in the past were viewed as strictly for the environmentalist. Key’s green business strategies are appealing and successful because they are “cost-savings” based rather than “ideologically” based and therefore of interest to every consumer.

Key has almost single-handedly, (with a prolific education-based advertising campaign), raised the profile and viability of geothermal on the Seacoast. Geothermal uses the earth’s energy, transferring naturally occurring BTUs, through the use of compression, to heat or AC.

**How does it work?** Drill a hole to groundwater which is always at 50 degrees. Send that water through a Freon-type liquid, (Puron R410A), which boils at a very low temperature, (20 below!). The 50 degree groundwater causes the Puron to boil and turn to a gas. That gas is compressed with an electric compressor, (Key encourages solar powered compressors), and when gas is compressed it becomes incredibly hot. The hot gas heats pipes which warm the air and heat the building, (and domestic hot water). The energy is exchanged in a closed loop underground and does not expose groundwater to chemicals. The Puron, as it is warming the pipes to heat the home, cools and returns to a liquid state, dropping back down into its starting place where the 50degree groundwater warms it again in a continuous cycle.

Geothermal’s efficiency is greatly influenced by the efficiency of the heat pump which is rated by something called COP: the higher the COP, the more efficient the pump. Key’s geothermal pumps have a COP of 5.0 which means that 5 units of heat are generated for each kilowatt of electricity used. Key’s 5.0 COP means that their heat pumps offer 500% efficiency.

While geothermal is Key’s signature “green” system, conservation is a cornerstone of all service work and installation. Key’s website has efficiency information in every tab, stressing the cost savings of responsible energy use, and educating the consumer about state and federal programs that help defray the cost of efficiency upgrades. Key educates every customer that properly cleaning and maintaining an existing system can reduce energy use by 30%. They do not promote one type of fuel or system, emphasizing energy management and efficiency and advocating for whatever system will best achieve that. For example, they offer fully off-the-grid geothermal systems where solar is installed to run the water pump and compressor. “Sometimes we look at what the customer has and our analysis shows that they need to stay with oil. If that’s the case we make that system as tight as we can,” stresses Sherrill.

Key staffs every energy tradeshow and community environmental event in the region. “I consider myself an educator – I do it every day, so that people can better understand today’s possibilities.” Key’s website is education heavy with an entire page on the EPA energy program and EnergyStar Homes. They offer information and collaboration with energy and money saving programs such as Heatsmart, run by PSNH, (this is a loadsharing program which encourages diversification of heating sources and provides a significant rate reduction from PSNH). Key has partnered with local biofuel provider Simply Green to provide all of their Bioheat customers with burner service and repair; a natural fit for Key’s “diversified” and efficiency-based energy portfolio.

**Green Dreams:** Key will continue to offer greener options as they become available. Some ultra-efficient and/or renewable systems currently on the market are priced too high for the average consumer; as energy prices climb these systems will become more affordable. Key is a strong advocate of public policy that encourages renewable HVAC systems with rebates and incentives. Geothermal in particular would benefit greatly from favorable national and state legislation. Key is also dedicated to making geothermal systems as independent as possible by partnering with wind, solar and biofuels. And, Key is researching a financing system that factors in the investment value of geothermal. Currently loans to finance the initial cost don’t take into consideration the savings and increased value that geothermal brings to the property. Key is exploring loan options specifically for geothermal which would provide better terms based upon the value it adds to the home and long-term fuel cost savings.