12 August 2012 | **MP3** at voaspecialenglish.com

Turning Industrial Waste-Heat Into Electricity

This is the VOA Special English Technology Report.

Scientists say enough energy is being wasted in the oil and gas fields of Texas every year to provide electricity to one hundred thousand homes. Businessman Loy Sneary says he is using that waste to create a profitable company called Gulf Coast Green Energy.

Mr. Sneary says sixty percent of all energy produced in the world today is being lost as wasted heat. He wants to capture some of that heat from -- among other places -- the thousands of oil and gas wells in Texas, and turn it into electricity.

LOY SNEARY: "We've got more electricity that could be generated than all of the coal-fired power plants, natural gas fired power plants and nuclear power plants in the world. That's what the potential is."

Deep underground, the earth is hot. If you drive a drill down into hard rock or shale, the drill bit gets hot. Mr. Sneary uses his "Green Machine" technology to help capture the energy that is produced when heat meets cold. The machine moves the hot well-water through one pipe next to another filled with a cooling material called refrigerant. This refrigerant boils, and steam is produced. This steam is used to make electricity.

LOY SNEARY: "And so we can take these lower temperatures, hot water sources, transfer the heat, and then once that refrigerant is expanded and pressurized, from there on it's just like a steam turbine."

It is not just oil and gas wells that can provide waste heat for the Green Energy machines to use to make electricity. The heat-recycling technology can work with solar energy collectors, coal-fired power plants and internal combustion engines -- almost any industrial process that produces waste heat.

Last year, Mr. Sneary connected his device to the boilers at Southern Methodist University in Dallas, Texas. He used that system's waste heat to create electricity, helping to reduce the university's utility bills.

Maria Richards is SMU's Geothermal Laboratory Coordinator. She says the lab's temperature maps help Mr. Sneary find hot areas near petroleum drilling

operations. Those areas are where Mr. Sneary can deploy his machines. The school and Gulf Coast Green Energy have worked together for several years.

MARIA RICHARDS: "There is so much heat in the Gulf Coast, and that made us realize that by working with the oil and gas wells, it was an ability to tap into those resources."

LOY SNEARY: "The research that the SMU Geothermal Lab has done has allowed us to target the areas where there is adequate heat in these oil and gas wells to be able to be utilized."

Loy Sneary is now negotiating with drillers in Texas and is working on a project in West Virginia. He also is looking at other states.

And that's the VOA Special English Technology Report. I'm Christopher Cruise.

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