SUTTON SCHOOL DISTRICT GEOTHERMAL

Sutton, Vermont

OVERVIEW

As part of their ongoing effort towards energy efficiency, the Sutton School District applied for a Technical Assistance Grant of $4,883 in 2010 to asses if geothermal energy was a feasible option to heat and cool their school building. It was determined that the proposed geothermal system would result in a reduction of utility costs, and construction of the project since then has gone underway.

FEASIBILITY STUDY

The Clean Energy Development Fund's Technical Assistance Grant helped fund field surveys, energy models, system designs, and other expenses for the Sutton School District. An engineering study was performed by L.N Consulting, Inc on the south wing of the building to determine if heating the space could be accomplished without being supplemented by the pre-existing fuel oil furnace. The designed project would be a geothermal HVAC retrofit system covering 4000 square feet of the building with three 525' 6" boreholes and 1¼ of an HDPE pipe with U-Bend fitting and filled with thermally conductive grout. The existing air ducts in the building would be re-sealed and used to distribute air from the system. L.N Consulting, Inc created an energy model that used data specific to the building to simulate building energy use, demand, and fuel / electricity usage.

"We believe this project will be a major asset to the community as it will reduce the energy use associated with the south addition and will educate students with regards to the importance of energy efficiency and sustainability within our schools." – Sutton School District

FINDINGS & COMPLETED PROJECT

The model created by L.N Consulting, Inc concluded that the pre-existing south wing mechanical system used approximately $5,450 in electricity and $3,631 in fuel oil each year. Their proposed geothermal system would only use $4,017 of electricity per year. This would reduce their utility costs by approximately $5,064 because of the cutbacks in fuel oil usage.

Today, the proposed geothermal system has been constructed and is in current use by the Sutton School District.

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