Southeast Albany Neighborhoods
Category A Feasibility Study
NYSERDA PON 4614

Albany County

Technical Lead: Aztech Geothermal

Anticipated completion of study/availability of final report: December 2022

Figure 1. Google Map of Project Area: Mansion, Pastures and South End Neighborhoods, Albany, New York

V1 3/2022

The Site & Beneficiaries

This project involves the historic communities, Pastures, Mansion, and South End, adjacent neighborhoods with residential and commercial buildings in the City of Albany, southeast of the Empire State Plaza. National Grid, The GreyEdge Group, CHA, and Aztech Geothermal, have partnered with Albany stakeholders to perform a geothermal scoping study of these neighborhoods covering a population of approximately 1,750. The Phase 1 cluster of buildings to be explored includes 169 buildings on 100 acres as depicted in Figure 1. Building types include single and multi-family residential buildings, four 12-story low-income apartment buildings (i.e., Steamboat Square), a credit union, offices, a church, and convenience stores with approximately 1.1 million sf of conditioned space.

Potential Thermal Resource

These neighborhoods offer compelling geothermal opportunities from the combination of local thermal resources: 1) sewer mains heading to a water treatment facility, 2) large volumes of Empire State Plaza (ESP) condenser cooling water making its way to the Hudson River and 3) the Hudson River. Condenser water from the ESP during 40F low water flow conditions would be sufficient for more than 3,000 homes without a single geothermal borehole. A fourth opportunity is the large percentage of aging natural gas piping slated for replacement in the next 10 years. Phase 1 could avoid the replacement of approximately 202 aging natural gas services or ~44 percent of the total gas services in the area.

Potential Configuration

Phase 1 buildings will be upgraded with water source heat pumps (WSHP) which access the best available thermal resources and are connected via ambient temperature loops. Another proposed energy resource is to transform surface parking lots into sites that harvest available local solar PV, solar thermal and ground source renewable energy to provide heating, cooling, thermal storage, electric power generation & storage, and vehicle charging energy services. These sites can become nodes on a modular, distributed Renewable Energy Network that connects to the existing electric grid and enables city-wide scalability.