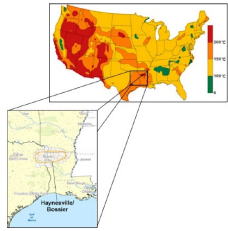


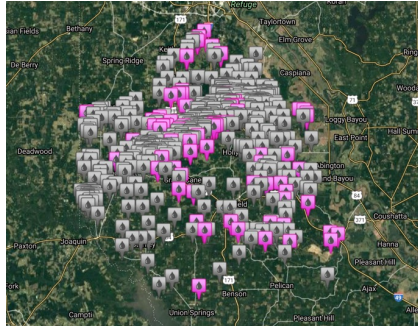
Geothermal Energy from Depleted Shale Wells for Rural and Suburban Heating and Cooling

Project Goal – Provide sustainable & renewable geothermal energy via 1) direct heating during winter, and 2) AC cooling from geothermal electricity during summer, for the rural community of Mansfield, LA, replicable to other rural areas in LA & TX

US Geothermal Potential



Shut-in wells in DeSoto, LA

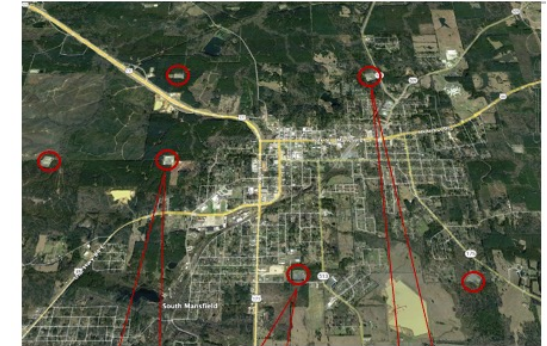


Lead Organization: Renasant Energy Management LLC, a minority-owned small business

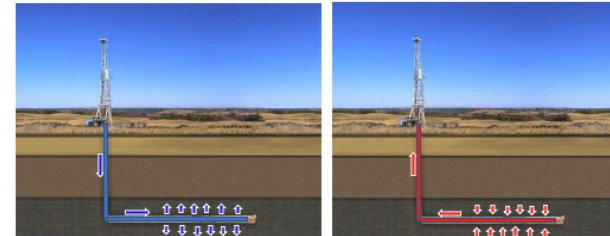
4265 San Felipe, Suite 1100, Houston, TX 77027

Technical Director (PI) - Dr. Kenneth R. Kibodeaux

Project Manager - Dr. Ivan E. Terez



Well pads are within 1500-2000 ft of schools and most of commercial buildings



Technology Summary - Heat production cycle using existing depleted shale wells: cold water injection into existing fissures in the hot rock, followed by hot water or steam production

- The disadvantaged community in the Mansfield area of DeSoto Parish, Louisiana is 76.5% Black or African-American, with 40% of the population living below the national poverty level.
- It is located in the middle of hundreds of shut-in shale wells with abnormally high geothermal potential for direct heating during winter, and geothermal electrical production for AC cooling during summer.



- **During winter: Direct heating from geothermal hot water via pipe retrofits in local buildings**
- **During summer: Geothermal electricity generation on the well pads to power AC cooling – only new electrical cables required (no alterations of buildings or their AC systems are needed)**
- **Local communities to be involved**
- **Project to be replicated and scaled-up in similar rural areas in Louisiana and Texas in the vicinity of dormant Haynesville shale wells**

Project Impact:

- **Assists citizens and businesses in underserved minority community**
- **Replaces carbon-intensive power from the grid with energy that's both renewable and sustainable**
- **Infuses capital and jobs into the local community**
- **Demonstrates technology that can be replicated in other similar communities**
- **No ESG-challenged activities – recycles already-existing wells**