

(13) Distributed Energy Resources – Expanding DER Applications in Target Markets

This two-year project will develop and demonstrate a two-phase biofermentation system to produce methane from dairy manure and reuse resulting solids as a beneficial amendment to the soil while producing heat for internal use and electricity for sale. The process also involves a low water usage technology. Results will be documented and disseminated nationally.

Total project cost: \$749,431

Funding request: \$336,949

Project Lead: New Mexico Energy, Minerals, and Natural Resources Department

Project Participants: Texas State Energy Conservation Office; New Mexico State University; Terra Verde; North American Development Bank; Burcham & Associates; New Mexico Economic Development Department, Office of Science and Technology; Public Citizen; West Texas A&M; Gonzalez Dairy, Inc.

Patents

None.

Presentations/Publications

None.

Progress in Past Quarter and Current Status

1. The project team has:
 - Continued to perform test runs using scale digesters.
 - Ordered digesters with delivery anticipated for mid-October.
 - Arranged with MTEC at NMSU to perform required modifications on the digesters.
 - Identified surplus equipment at NMSU to be used for the project; equipment includes 40 KW engine generator set, storage tanks, and plumbing equipment.
 - Arranged with NMSU Engineering Technology Department, Civic Engineering Branch to prepare the site and pour concrete for foundations.
 - Developed timetable for project completion.
 - Arranged with Mechanical Engineering Senior Design Team to design a project to trouble shoot and make any modifications necessary to the engine generator set to accept biogas as fuel.
 - Made a presentation to Governor Richardson's Energy, Environment and Science Advisors on the STAC project.
 - Finalized all internal NMSU requirements to move a Morgan building from campus to the site; this structure will function as the control building.

Plans for Next Quarter

2. The team will:
 - Complete construction of site.
 - Accept delivery of bio-digester units.
 - Purchase necessary instrumentation.
 - Finalize and construct biogas flare for excess gas.
 - Start filling digester units.
 - Continue working with El Paso Electric on engineering study and interconnection issues and delivery of electricity to the site.
 - Continue gathering data on biogas production and growing cultures in bioreactor.
 - Continue to affirm that all permitting requirements are being satisfied.
 - Continue to produce feeder stock for the reactor.

- Continue negotiations with Jim McNelly of Renewable Carbon Management to support collaborative efforts.
- Complete modifications on at least one digester.