



ARC Southern Energy LLC Requests \$10 Million in Department of Energy grants to Fund Field Demonstration of Gas and Solid Waste Plasma Gasifier for the CHP Production of Electricity and Cement Additives

Focus: Green Energy, Energy Efficiency, Environmental Leadership

Houston, TX, Aug. 17 -- Arc Southern Energy, LLC this month has filed an application for \$10 million in grants, from the Department of Energy (DOE), National Energy Technology Laboratory (NETL) on behalf of the Office of Energy Efficiency and Renewable Energy's (EERE) Office of Industrial Technologies (ITP). ITP programmatic goals and objectives are as follows:

- Drive a 25% reduction in U. S. industrial energy intensity by 2017 in support of EPAAct 2005;
- Contribute to an 18% reduction in U.S. carbon intensity by 2012 as established by the Administration's "National Goal to Reduce Emissions Intensity"

"Arc Southern Energy's application focuses on demonstration of our core strategies -- reduction in green house gas emissions and converting the waste to electricity, with a combined thermal efficiency greater than 75%. We will also produce cement additive products which reduce the carbon foot print and the exhaust from the gasifier will exceed the environmental specs," says Arc Southern's President Ali Abdullah. "Our multi-disciplinary team has worked since the beginning of the year to determine which projects made the most sense for the environment, our customers and the share holders".

"Most of the money we are requesting involves in validation of the technology and will accelerate the deployment of technology across United States. Our application would fund improvements that go from the processing waste, and fly ash, to improving thermal efficiency and finally to generation of electricity. This funding would increase our ability to test and deploy the technology more efficiency and support our investment in converting waste to energy which in the long run will reduce GHG emissions. Receiving these funds would help us deploy a next-generation waste to energy system that would benefit our customers and the environment."

Arc Southern has partnered with adaptiveARC and Tensorcrete to jointly apply for this grant. Arc Southern has a commercial agreement with Adaptive Arc to commercialize adaptive ARC's cutting edge cool plasma arc gasification technology. Arc Southern has also an agreement with Tensorcrete to work on renewable energy projects in production of cement additive.

Arc Southern's application includes the following funding requests for a 50 percent federal match:

- The product to be commercialized is an integrated system for conversion of landfill gas or sewage digester gas, along with landfill solid waste, coal fly-ash or sewage, to electrical energy and a marketable cement additive product. The advanced plasma arc gasifier system that forms the core technology of the system features a recently developed and proven plasma torch, along with other unique design innovations, to efficiently generate electricity from both gas phase and solid phase wastes.
- In the proposed configuration, the gasifier will ultimately operate on landfill gas, coal fly ash and a char producing feed material to generate more than 5 MW of electrical power, as well as a value added cement material, in a process that substantially reduces CO₂ emission to the environment in that it avoids an order of magnitude more carbon emission than it generates.
- The syngas produced in the gasifier is cleaned and sent to a modified piston engine that powers an electrical generator. Process heat is recovered by sending the steam produced in the hot syngas quenching process back to the plasma arc gasifier, where it contributes to the production of hydrogen. Genset engine exhaust is also routed back to the plasma arc chamber where pollutants are essentially recycled to extinction. In a further refinement of the technology, process heat is used to recycle coal fly ash waste to produce a value added material for use in cement. Overall reductions in carbon release gained from operation of the system on landfill gas (LFG), municipal solid waste (MSW), and especially coal fly ash (CFA), are substantial.

SOURCE Arc Southern Energy LLC.