AD project to power Maryland prison

Original Article by Anna Austin appeared in *Biomass Magazine* on December 30, 2011
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Maryland's Eastern Shore Correctional Institute will soon draw one-third of its power requirements from an anaerobic digestion project processing chicken litter and crop residue.

Virginia-based EcoCorp has received a 20-year power purchase agreement from the state, said EcoCorp president and CEO John Ingersoll, and construction of the project will begin during the first quarter of 2012.

Since the majority of operating AD power plants across the U.S. utilize cow manure as a feedstock, the chicken litter and manure feedstock component makes this project particularly unique, Ingersoll pointed out. And it's a little trickier as chicken litter has a lot of nitrogen in it, is very dry compared to cow manure and not as digestible. "We're using a dry [AD] process because we don't want to use huge amounts of water to dilute the material," Ingersoll said. "We're one of the first in the country to use a dry process."

The digester will receive about 5,500 tons of feedstock per year, and EcoCorp already has contracts in place with local farmers who will haul materials to the plant. "These are 10-year contracts, which are unusual because that's a very long time for farmers [to commit to]," Ingersoll said.

That may be in part because of the state's involvement in the project. Not only will the plant provide the prison with 1.08 MW of renewable energy, but it's helping to prevent pollution in the Chesapeake Bay, one of the state's major priorities. Nitrogen presents the most serious pollution problem for the bay, a likely result of Maryland's robust poultry industry. The majority of the state's poultry farms are located on its eastern shore.

"This is something new to do with the chicken litter, and a way to clean up operations," Ingersoll said. "Our process converts the litter into ammonia, which is readily useable by plants. When applying the litter itself to soil for fertilizer, it takes time for the conversion to occur, and you lose some to the atmosphere and in run-off water."

In addition, the non-uniform texture of traditionally used chicken litter fertilizer makes it difficult to evenly apply to soil. Separate solid and liquid digestate remains after EcoCorp's AD process, according to Ingersoll, and could solve the aforementioned problems. The company plans to sell both to farmers.

While this is EcoCorp's first project in the U.S., the company has a European partner that has implemented many projects during the last couple of decades. Ingersoll said permits and design for the Maryland project are complete, and the six-month construction period could begin as early as April.