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BioTown, USA is Model Energy Program

By Mikel Chavers

Nearly an hour and a half outside of Indianapolis, in the small, rural Indiana town of Reynolds, 150 of the town's families drive flex-fuel vehicles, and residents can fill their cars with biodiesel and E85 fuel at the local BP station. Construction is also underway for a special facility that will turn waste—such as cow and hog manure—into energy.

Reynolds has become BioTown, USA, the nation's first model community that will run completely off biorenewable energy sources, becoming self-sustaining and environmentally friendly. BioTown is a winner of one of eight CSG Innovations Awards.

"Many states have shown great interest in BioTown—all curious to see the end results of the project," said Indiana Lt. Gov.

Becky Skillman. "BioTown is only successful if it can be duplicated."

With that in mind, the second phase of the model project is already in the works. In March, ground was officially broken for the Technology Suite, a special facility that will take municipal waste such as corn stover, manure and other types of biomass and turn them into electricity, thermal energy, biodiesel and fertilizer.

The facility will contain a gasifier and an anaerobic digester. Brandon Seitz, program manager of the Energy Division of the Indiana Office of Energy and Defense Development, said the digester portion is actually pretty common and the process will basically run the waste products—usually manure—through the digester where methane gasses are let off. Methane gasses are usable as heat and electricity, he said.

In essence, the energy made from the waste will be used in Reynolds' lights, Seitz said.

What's left over after that process is a kind of organic solid that can be used for such things as bedding for farmers' cattle. The best part: "It doesn't smell," Seitz said.

Energy Systems Group based in Evansville, Ind., is partnering with the BioTown project to develop the special technology facility. That partnership was more than two years in the making, said Seitz, who heads the BioTown project.

Finding the right partner on the technology suite was just one challenge for Biotown. Once the facility is up and running, transportation of the waste to the facility is a huge issue, he said. Farmers close by are willing to bring their waste to the facility using tanks, while at least

one farmer is exploring the idea of using a pipeline to transport waste to the facility.

With more than 150,000 hogs within a 15-mile radius of Reynolds, all that waste is important. By 2008, the BioTown Technology Suite will provide all the electricity for the town, and any excess electricity will be sold to the local electric utility, giving Reynolds some economic advantages, Seitz said.

"This kind of gives a new avenue for something else to use the waste for," he said.

For the town's nearly 550 residents, being a part of a project that uses homegrown renewable resources means they'll soon be independent from foreign energy sources and they will get to use cutting edge technology in their day-to-day lives.

"It's very rewarding to see this community embrace these new ideas," Skillman said. "Reynolds has the highest number of users per capita of flex fuel in the world, I'm sure," she added, taking into account the small size of the town. In November 2005, as a part of the first phase of the project, 20 residents received free General Motors flex fuel vehicles for two years. Others have since purchased their own.

BioTown traces its roots to 2005 when the Indiana Department of Agriculture rolled out a strategic plan that included bioenergy. The biggest initiative in that arena was the BioTown project, and it since has developed into Indiana's own teaching tool.

"It's not just about taking waste and making energy," Seitz said. "We want to make this an educational destination; we want to teach people around the country about bioenergy."

Fast Facts

- An ongoing exhibit about BioTown at the Indiana State Museum cost \$31,047.
- BioTown's Technology Suite uses an anaerobic digester, a gasifier and fast pyrolysis to turn waste into energy.
- Indiana officials estimate the technology facility in BioTown will generate electricity by fall 2007 and will be fully operational by 2008.
- In September 2007, BioTown representatives traveled to Germany's BioVillage in the town of Juehnde. The town of nearly 750 residents is the first in Germany to produce all of its heat and electricity from bioenergy.