



The Story of BioTown[®], USA

VISION: BioTown[®], USA, is the country's first effort toward creating communities, where all energy needs are met through biorenewable resources.

KEY MESSAGE:

1. Indiana is committed to leadership in the bioenergy field.
2. BioTown[®], USA is a public-private showcase community, and the hope is that more communities take advantage of the model presented in Reynolds.

MISSION: Indiana Governor Mitch Daniels launched the project in September 2005. The project was first piloted in Reynolds, Indiana, located in White County at the heart of rural America. Reynolds was selected as the pilot community for the BioTown[®], USA, concept for several reasons:

- Size of town ó Large enough to make an impact, yet small enough to be nimble and manage this pioneering project.
- Quality infrastructure ó The town is accessible by rail and roads from the north, south, east, and west.
- Agriculture ó Many large-scale farm and livestock operations surround the town.
- Research ó The town is in close proximity to one of Indiana's top research universities.

Meeting the energy needs of this town with renewable sources is one of the first of its kind in the world, while using environmentally friendly technologies that will convert animal and human waste along with other agricultural wastes into energy. Agriculturally-derived energy is a key part of Indiana's economic comeback. Indiana's many natural advantages like its location and infrastructure make it primed to be a leader in bioenergy.

Phase I was the promotion, education and increased use of ethanol and biodiesel as agriculturally derived replacements for petroleum fuels. Phase I was completed successfully.

Four major goals of Phase I:

1. Educate residents about and encourage residents to use ethanol and biodiesel.
2. Installed an E85 (85% ethanol, 15% gasoline) pump and a B20 (20% biodiesel, 80% petroleum diesel) pump in town to make alternative fuels available to BioTown[®] residents.
3. Replaced the town's fleet with vehicles capable of using alternative fuels.
4. Generated highly visible events that allow the alternative energy story to be told across the state, nation and world.

Phase II included the research, development and implementation of plans to transform agricultural and municipal wastes into electricity. Indiana State Department of Agriculture commissioned a detailed

research initiative that took an in-depth, analytical look at energy uses in the Reynolds area, potential biomass feedstock, byproduct uses and available technologies for waste conversion to energy.

A Suite of Technologies was originally recommended by the BioTown[®], USA Development Authority, which included three complimentary systems: an anaerobic digester, a gasifier and fast pyrolysis. The plan was to develop the technology with private investments. However, the uncertainty in the economy from 2007-2009 and the utility regulations in Indiana presented challenges for the completion of Phase II as planned.

Since that time, private investors have stepped forward to continue the BioTown[®], USA Concept. The systems that are operating today include:

1. AlgaeWheel is a system that applies algae-based technology to replace the typical equipment used in a conventional wastewater treatment plant. The AlgaeWheel system is capable of producing algae for a variety of uses, including electricity generation, biofuels production, emissions sequestration (particularly CO₂ or greenhouse gas), fertilizers, and feed supplements. The energy generated has the potential to eliminate or significantly reduce the need to purchase energy for a mechanical wastewater treatment plant.
2. Bio Town[®] Ag Energy Center is located just north of the Town of Reynolds, utilizes the manure generated from Bio Town[®] Ag's cattle feedlot and swine facility along with other organic products for processing in an anaerobic digester to generate methane gas. The gas is then used to power internal combustion engines to generate three (3) megawatts of electricity per hour, which supports the BioTown[®] USA initiative of producing a sufficient amount of alternative energy to cover the energy needs of the Town of Reynolds.
3. Meadow Lake Wind Farm is the newest addition to the suite of alternative energy technologies located in White County. The wind farm is owned by EDP Renewables and the current four-phase project covers over 68,000 acres in the southwest corner of the county, with the potential for additional phases to be added. The 303 wind turbines, producing 500 megawatts of clean renewable energy, co-exist well with the agricultural land use in the area, allowing farmers to continue growing crops while generating revenue from the wind turbines.

Phase III focuses on producing synthetic natural gas from agricultural wastes and biomass. The technologies used today will have great relevancy to Phase III. The goal of both phases is to understand and select a technological process that is the most efficient and economical at converting waste to biogas, which can be processed to a usable form of energy.

COMMUNITY INITIATIVE: A key component of the BioTown[®], USA concept is the education and tourism aspect. As a pilot project, it will be up to the community to share the BioTown[®] story in hopes of helping other communities to become self-sustaining using biorenewable resources. We currently provide tours of the renewable energy sites in White County, which include the AlgaeWheel, Bio Town Ag's Anaerobic Digester, Liberty Landfill EnviroWatts Generating Plant, and the Meadow Lake Wind Farm.

The BioTown[®], USA community initiative will include:

- **Education/Tourism Center** - The proposed BioTown[®] Education/Tourism Center will be a focal point in the Reynolds community. The Center will be located in the recently closed elementary school located in Reynolds and will be open to visitors wishing to learn more about bioenergy. We will coordinate educational tours for elementary, high school and college students, in addition to the general public. The structure will include exhibition areas to demonstrate biorenewable energy and sustainable technologies. We are working closely with Ivy Tech Community College and Saint Joseph's College in the development of curriculum to support the Center and the opportunity for the Center to be staffed with interns. We currently take the BioTown[®] story out to communities across our state and nation in hopes of educating the population on biorenewable resources and converting their towns to a BioTown[®].
- **Research Lab** - The BioTown[®] Research Lab will be developed in partnership with surrounding colleges and universities to allow students to complete internships and research other streams of biorenewable resources. Algaewheel is in the process of building a research lab that will allow the testing and analysis of various waste streams to determine their impact on the growth of algae and its potential for developing energy.
- **Ag Museum** - An Ag Museum is also being discussed for the Education/Tourism Center to showcase the history of agriculture in Indiana, from its earliest days of horse-drawn plows to the BioTown[®] technologies of today. The goal is to preserve the cultural heritage of Reynolds and White County while enhancing the identity of the community and region.

Agriculturally-derived energy is a key part of Indiana's economic comeback. White County, Indiana now produces over 510 megawatts of homegrown renewable energy. BioTown[®], USA will encourage our state and country to become less dependent on foreign oils and Reynolds, Indiana has the opportunity to become a model of sustainability in the Midwest. BioTown[®], USA can and will play a pivotal role of turning challenges into sustainable opportunities.