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New Tama facility to focus on environment: aims at energy alternatives - waste reduction

Will conduct research, gather data at site

By John Speer
Editor

A center to test and develop equipment which will allow small and moderate size businesses to generate their own power is expected to be completed in late July on Tama's east side. The fuel used to produce heat to generate the power are solid wastes which result from the manufacturing process at the businesses.

Three Thiessen brothers and a fourth man, all with local connections, co-own Ag Bio-Power LC, which has set up headquarters in the former Kaufman Auction House south of the Iowa Quality Beef Plant at 3334 L Avenue. The building may also be remembered as the long-time location of Larry's Feed and Supply.

Brothers Joe, Sam and Mike Thiessen and Pat O'Rourke have combined forces to further develop processes and applications which will allow for the safe burning of high-polluting commercial and industrial solid waste.

The Tama plant will further the collection of data and be aimed at research and development. It is planned, upon completion later this month, to have the facility able to generate enough electricity on its own to be self-sustaining, according to Sam Thiessen. Joe Thiessen, who lives at rural Toledo, has invented a process to accomplish the burning of the high-polluting wastes and a patent was granted for it on Oct. 28, 2003.

As explained by Sam Thiessen, "The process uses the gasification of bio-mass, in this case shelled corn, as a filter to burn other fuels, such as rubber or paint filters, that cannot be burned in the open."

The corn is "waste seed corn" according to Joe Thiessen - discard corn which cannot be fed or put used in home heating which would end up in a landfill.

Joe Thiessen said he spent about three years developing the process and obtaining the patent. Much of the earlier stages of development were done on the farm of LaVoy (Bud)

and Marlene Thiessen, rural Chelsea, the Thiessen brothers' parents.

Workings

To illustrate the method, a paint filter used in a commercial plant is set on fire on a conveyor system. The smoke from this is directed to a "gasifier" along with shelled corn and air. This is then combusted in a burner that can heat hot water or steam which can then be used to generate electricity.

According to the developers, "gasification is a process of semi or partial combustion. By starving solid fuels of sufficient oxygen during the combustion process, a gas is produced which can be burned at another nearby location."

Sam and Joe Thiessen are quick to point out the concept of gasification is not new - they say it was used extensively, for example, to fuel the private sector of Germany during World War II.

SWAP Support

A forgivable loan to aid in support of the project was received earlier this year from the Iowa Department of Natural Resources Solid Waste Alternatives Program (SWAP.) This money was used to advance the process in the elimination of paint filters from an Iowa City manufacturing plant operated by Lear Corp.

The Iowa City facility makes armrests and other items for most every major car manufacturer. A representative of Lear, Bill Murray, was on hand for a recent demonstration at Tama.

Lear's interest lies in "saving money by recycling its industrial wastes to produce energy for stream in the operation of its plants."

Also on hand for the recent demonstration was John Koch of the Iowa Waste Exchange. "John has been most helpful in getting our operation off the ground," said Sam Thiessen. "He has been an exceptional liaison with the Iowa Waste Reduction Center (WRC) in Cedar Falls, which has provided technical expertise, and with the DNR's Air Quality Bureau. Without John's help, I do not believe we would have been nearly as far along in developing this process."

Ag Bio-Power is also working with Tire Environmental Services, Muscatine, to eliminate "fluff" - which they describes as a "hard to manage waste resulting from tire shredding." Joe Thiessen says the string-like fluff material, wire and rubber is subject to "cold heat" or lower heat, which burns away the fluff and residual rubber from shredded tires. In an earlier demonstration at the farm, the process left the wire in tact. Thiessen said it is important to not use too much heat in the process because the wire is recyclable if it is not subject to extreme temperature during this phase of the process.

All three Thiessen brothers and O'Rourke are South Tama High School graduates. Sam Thiessen lives at Parker, Colo., and Mike Thiessen and Pat O'Rourke live at Havasu City, Ariz.