

POWER FROM PORK

Partnership turns manure into money

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Rudi Roeslein will be the first to tell you he's no farmer, even though he owns two Missouri farms. The Austrian immigrant made his money building machinery to make beverage cans and selling it all over the world. Now 71 years old and wealthy enough to chase his dreams, Rudi has three lofty goals. He wants to find alternative sources of energy, protect the environment and create more habitat for wildlife.

That's the reason he launched Roeslein Alternative Energy in 2012, partnering with Smithfield Farms on a project that today is literally turning manure into money. On a blustery day in June, Rudi speaks to a group of ag journalists next to a confinement barn housing 1,000 hogs and a 4-acre manure lagoon located north of Milan.

You would expect an operation of this type to smell. Concentrated Animal Feeding Operations, or CAFOs, are known for two things: producing large amounts of meat in a short time, and creating controversy from the associated odor. It's quickly obvious something is different about this one: There's no smell.

Stretched tightly over the lagoon is a black plastic cover. It bulges skyward with an accumulation of nearly 2 million cubic feet of methane gas. Unseen pipes suck the gas away, where a compressor filters out impurities, then funnels it into tanks on a trailer.

From there it will be trucked to another farm and injected into a pipeline. Once the source of complaints from neighbors, the gas is now a valuable commodity, Rudi says. It's highly prized in California where strict carbon standards favor natural-gas powered vehicles. In fact, the gas collected here is so clean it received the lowest carbon intensity score ever by the California Low Carbon Fuel Standard.

"What motivated me to do this is I spent a lot of time over 35 years working in China," Rudi says. "I watched the development in China and it is pretty disturbing to see the eastern border. The amount of pollution and the landscape that has no wildlife, no clean water, and you think, 'Can that happen here?'"

Rudi invested \$50 million to prove the technology would work. Already in place on three of Smithfield's farms, the technology will soon roll out to all nine facilities. "We ended up approaching Smithfield and asking for their manure as an opportunity to prove this will work," Rudi says. "As we moved along, Smithfield started to see the value. So we are now 50-50 partners in this venture."



As if removing a harmful greenhouse gas and eliminating its odor wasn't enough, Rudi is moving on to the second phase of the project. The farm he owns north of Unionville has been turned into a 1,700-acre laboratory with the goal of growing prairie grass to feed into digesters and create even more renewable gas. If the plan works, farmers could find a new cash crop that can be successfully grown on marginal land.

A side benefit will be more habitat for wildlife, as evidenced by the quail, turkey and deer that are thriving on the native grass and cover crops at the farm.

Typical of most north Missouri row-crop operations, about 80 percent of the land here is suitable for cultivation. The rest is either too steep or the soil is too poor for corn and soybeans. Instead of wasting fertilizer and other inputs on this marginal ground, Rudi "fired" the acreage and returned it to prairie.

"We ran around in combines and looked at the yields and took out some of those poor-producing acres and sowed them down into prairies," says John Murphy, wildlife and ecological services manager at the farm. "Rudi would be the first to tell you that we have the luxury of not depending on every single acre for production. If we are not making a profit we are going to fire those acres and do something different with it."

The "something different" is an impressive sight in summer when colorful blue spiderwort, purple milkweed and pink blazing star mingle with waist-high big bluestem grass. Besides feeding pollinators, the native plants send deep roots into the ground, keeping nutrients in place and slowing runoff.

Experiments here are not always successful. John tells of the decision to plant sorghum to use as biomass for the digester. Drought caused the plants to wilt, making them impossible to harvest. The failure is one less mistake a future farmer will make.

In time, Rudi plans to offer long-term contracts to farmers to feed his digesters. In the meantime, work continues to find the best combination of plants to achieve his goals.

"I could have taken my \$50 million and moved next to Ted Turner and rode horses and lived happily ever after," Rudi says. "The problem is, I've seen what's happening around the world and I couldn't have slept thinking I'm sitting on the sidelines doing nothing."

For more information call 314-729-0055 or visit www.roesleinAE.com.



photo courtesy Roeslein Alternative Energy

Top: John Murphy checks a stand of native prairie on a research farm located north of Unionville. **Above:** Methane collected from manure is turned into renewable energy at this farm and others near Milan.



Rudi Roeslein left his native Austria at age 8. Now 71, he is devoted to feeding a growing world population while finding opportunities where others see challenges.