

Alternative Energy, American Style

When a US company seeks to streamline its energy-producing rice hull combustion & conversion process, it relies on a screening vendor for critical assistance.

With oil supplies stretched tight worldwide, oil recently topping \$60 a barrel and nearly every industrialized nation concerned about global warming, the need for alternative energy sources has never been more critical. Agrilectric, a leading US operator of rice hull combustion power plants, is one company that's attacking the problem of non-renewable energy in an innovative, entrepreneurial style.

Agrilectric, based in Lake Charles, Louisiana, is a cooperative group of companies that mills rice, burns traditionally discarded rice hulls to generate electricity and converts the resulting ash into useful products for a range of industries. Through the process, 97,000 short tons of rice hulls are converted into power generation annually. Agrilectric's 13-Mwh unit supplies power generation to its internal processes and an adjacent rice mill, while it sells excess capacity back to the power grid.

In business since 1984, Agrilectric now transforms the rice hull ash into a valuable product shipped worldwide. The ash is beneficial as a molten steel insulator, a concrete additive, and soil amendment. Its unique characteristics also make an excellent filter aid used in the chemical, wastewater, and swimming pool industries; and numerous US racetracks use ash products as oil absorbents.

Another Agrilectric company, which markets its renewable combustion/ash processing technology internationally, has expanded the technology with the construction of an 8-Mwh electrical generating plant in Brazil.

For better production efficiency, Agrilectric decided to streamline its business model by bringing a previously outsourced process - screening rice hull ash for foreign material - back in-house. But difficulty in obtaining the right screening equipment, a critical first step in processing the ash, was threatening to disrupt Agrilectric's quality objectives and force the company to endure additional expenses.



- Improved product quality with accurate oversize particle removal
- Increased productivity and reduced labor costs with simple dis-assembly and cleaning
- Compact design fits easily into existing installations and areas of limited head room.
- Solid rubber suspension gives quieter operation.

Out of space, out of time

Since current plant equipment took nearly all production space, the new vibratory screener had severe height and width restrictions, requiring it to stack vertically above a bulk bag loading station.

To meet demanding production goals, the screener also had to be durable enough to withstand abrasive rice hull ash, reliable enough to minimize maintenance for many years, and robust enough to satisfy a minimum fill rate of 3 metric tons per hour. Because Agrilectric had contractual service commitments to meet, the screener had to be fully operational in less than one month.

But the vibratory screeners Agrilectric evaluated for the production rate were either too big or the manufacturer could not meet the delivery deadline.



"We were in a bind," says Quintin Richard, Agrilectric's Packaging Supervisor. "Nothing could be accomplished without the right screener in place because it was the first piece of machinery in our new process. With contractors already scheduled, even a day's delay would cost us thousands of dollars, yet the screeners we'd looked at just weren't right for the job."

A speedy, compact solution

To resolve these problems Agrilectric chose a high-capacity, 60-inch Vibrasonic Compact Screener from Russell Finex of Pineville, NC. Russell Finex has extensive experience working with customers to determine the appropriate use of screening and filtering equipment to meet specific requirements.

Without the Compact screener, Agrilectric would have had to relocate existing machinery, causing complex logistics problems and production disruption, along with additional capital expenditures.

"The screener's compact size and design fit our needs perfectly," says Richard. "It not only allowed us to keep our existing equipment setup, but also maintained our production efficiency better than other screener options we had."

"Because Russell Finex expedited delivery, we were operational in less than four weeks after our initial contact," continues Richard. "This allowed us to meet our customer obligations efficiently and saved us additional cost from project delays."

Besides fitting Agrilectric's confined space needs, Richard estimates the Compact screener could allow his company to process up to 5 metric tons of ash per hour, a limit set not by the screener but by the speed of bulk bag offloading. Adding this extra production capacity should pay handsomely as the demand for clean, renewable energy sources ratchets up.

For over 70 years Russell Finex has manufactured and supplied screeners, filters, and separators to improve product quality, enhance productivity, safeguard worker health, and ensure powders and liquids are contamination-free. Their unique, Compact vibratory screeners are a breakthrough improvement over conventional screeners where reliability, cleaning efficiency, and headroom or room size are issues.

In using the Compact screener, Richard points out that Agrilectric is boosting quality control, while minimizing product handling, lead, and delivery times. He adds that while some screeners have commercial hardware such as nuts and springs exposed to the material being screened, the Russell Finex unit does not, thereby eliminating the risk of hardware vibrating loose and entering the product stream. He appreciates also that the units are essentially dust and spark proof, with quieter operation than traditional units.

"Switching from outsourced to in-house screening for Agrilectric is like switching from foreign oil dependency to more efficient, alternative domestic resources for our nation," concludes Richard. "It makes sense, but you'll need a knowledgeable partner to accomplish it. Russell Finex was that partner for us, just as Agrilectric is increasingly an alternative energy partner domestically and abroad."



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