Chino, California: Food Waste Digester Upgrade

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The Inland Bioenergy anaerobic digestion facility in Chino, operated by ES Engineering, has capacity to process up to 200,000 gallons/day of liquid food waste. Four 15,000-gallon tanks receive macerated commercial food waste from various sources. Those contents feed into a 140,000-gallon equalization tank, which in turn feeds one of two 1.2 million gallon anaerobic digesters. When ES Engineering began managing the Chino plant, the digesters were equipped with top-mounted propeller mixers, but the amount of mixing being achieved was insufficient. “Our co-owners, a waste management company, have several large contracts with grocery stores and food producers for unwanted/expired products,” explains Alfredo Ferrin, Plant Manager. “So it was very important for us to maximize this large supply of feedstock with the right mixing system. Feedstock flow can vary from 10,000 gallons/day to as much as 200,000 gallons/day, but on average it is 50,000 gallons/day. We needed equipment that does a very good job mixing and pumping a wide variety of slurries with quite high levels of solids.”

ES Engineering installed the Landia GasMix system on one of the digesters, which includes the Landia Chopper Pump designed with an external chopping system that is separated from the pump casing and the impeller to prevent clogging in the digesters. It utilizes a combination of biogas and liquid recirculation to fully mix the digester and improve biogas quality, helping to boost biogas production. All mechanical components of the system are externally mounted, enabling inspection and maintenance to be completed without having to enter or open the digester. The chopper pump draws sludge from the digester and pumps it through a chamber; biogas is drawn from the top of the digester, mixed with the sludge and injected into the tank. A similar upgrade was made to the second digester when it had to be drained for service. Together, the two digesters produce 3.3 MW of electricity.

Read more about Landia GasMix