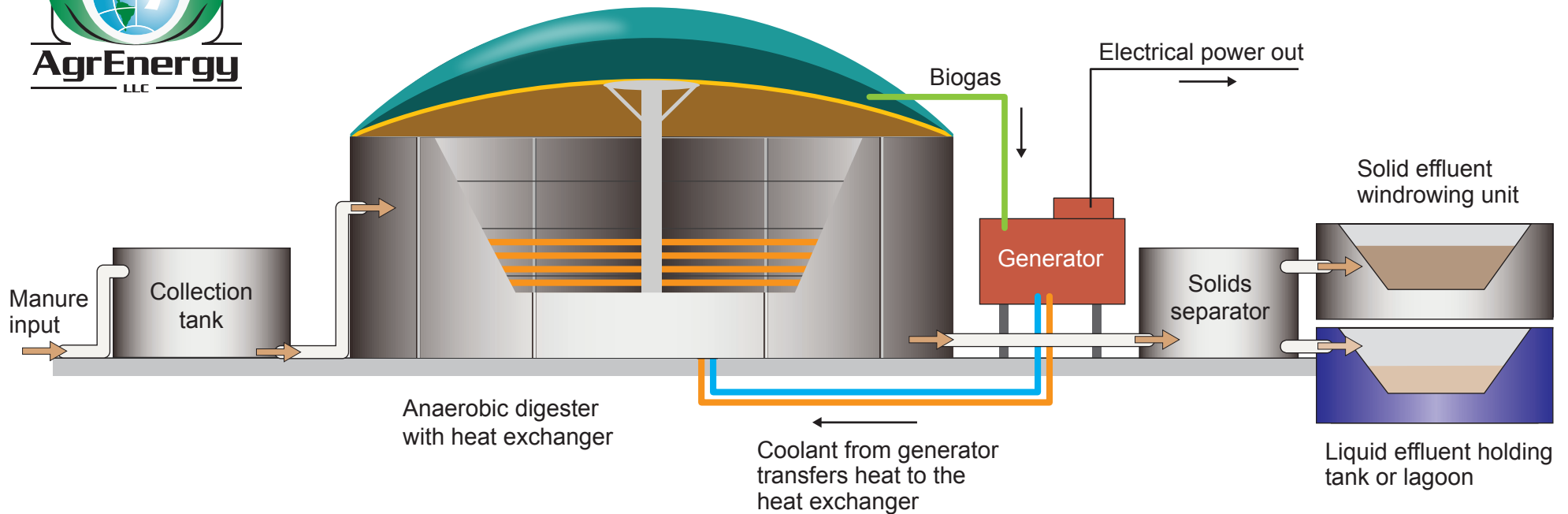




## Diagrammatic Representation of a Biogas Renewable Energy System



**Collection tank:** Manure and other organic farm waste is collected in a tank. If necessary water is added to the waste so it is easy to pump through the system.

**Complete mix digester:** A large stainless steel tank is set on a concrete slab. Mixing paddles on both sides of the tank, mix the waste in the tank. Tubing runs along the walls of the tank carrying hot fluid to keep the mix at a constant temperature. The waste enters the tank at a level above the fill line, and is removed from the bottom of the tank. A continuous flow of waste moves through the system with new waste replacing old waste on a daily basis. The gas generated inside the tank is captured underneath an expandable membrane, and is siphoned off to be burned as fuel.

**Generator:** The biogas fuels a generator which creates electrical power for use on the farm and to sell to the local utility. The fluid used to cool the generator is circulated back to a heat exchanger inside the digester to maintain the temperature of the mix.

**Solids separator:** Waste from the digester moves into a tank whereby the solid and liquid components are separated and stored in different containers. The solids are rich in nitrogen and can be returned to the field as fertilizer. Liquids are often pumped into a lagoon and left to become a part of the natural water cycle.